

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016



A Report to Traditional Owners of the
Argyle Participation Agreement and
Empowered Communities East Kimberley

by

John Taylor

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Foreword

After John finished work on his 2003 report *Aboriginal Population Profiles for Development Planning in the Northern East Kimberley*, I began coordinating the response to recommendations in the Aboriginal Social and Economic Impact Assessment Report of the Ord River Irrigation Project Stage 1. During that time, I saw how John's report shaped dialogue between the Traditional Owners of country mined at Argyle Diamond Mine (ADM), Rio Tinto, WA Government and other surrounding TO groups. It ultimately led to royalty relief and an investment decision in favour of underground mining, extending the life of the mine. Benefits accrued to the company, the WA Government and to the regional economy in the East Kimberley.

The years since the first report was published in 2003 have seen the expansion of the Ord River Irrigation Scheme, significant investment in infrastructure projects, new exploration activity and sweeping policy changes such as the abolition of ATSIC. Native title has been determined over much of the East Kimberley, and agreement making modernised to assure Traditional Owners a seat at the table in development discussions. A new institutional landscape of PBCs is emerging to work alongside our existing community-controlled organisations, all focused on the social, cultural and economic wellbeing of our mob.

Much has changed in the East Kimberley, but has it changed for the better? In key indicators of wellbeing such as health, housing, participation in the labour market, income, education employment and training, what has changed for Aboriginal people in the East Kimberley? Have we benefited locally from the economic contribution development projects have made to the regional economy and to Western Australia? Are we better positioned to weather economic shocks such as mine closure and Covid-19 downturn? This is what *Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016* set out to explore.

The findings in this report have implications for all Australians with a stake in the East Kimberley because here, as in so much of regional and remote Australia, Aboriginal development and regional development are entwined. As leaders in Aboriginal organisations and families in the region, our goal is nothing short of securing the intergenerational social, cultural and economic wellbeing of our people.

We have worked hard to build a shared agenda for Aboriginal development in the East Kimberley. We now ask that you work alongside us, in true partnership, to achieve it.

Des Hill
Chairman
Binarri-binyja yarrowoo Aboriginal Corporation
Backbone for Empowered Communities in the East Kimberley
Kununurra, 2020

For the women responsible for keeping the Barramundi Dreaming site safe, there is a sense of spiritual loss. They see themselves as having failed in their duty of custodianship. Looking back to Ngarrangkarni times, they realise that they are the only Kija women who have not been able to pass on the guardianship of the sacred site to their daughters.

(From Digging Sticks to Writing Sticks:143)

In 1976 the Ashton Joint Venture was created between the Kalumburu Joint Venture and CRA Exploration- later to become Rio Tinto. In 1979 diamonds were found in the East Kimberley of Western Australia. In 1980 the Good Neighbour Agreement was signed. In 2002, the Kimberley Land Council commissioned the first Taylor Report with the aim of baselining a snapshot in time for the East Kimberley region, with particular focus on the Aboriginal population. In 2004, the Argyle Participation Agreement (APA) superseded the Good Neighbour Agreement. Traditional Owners were faced with two options regarding the future operations of the mine – closure around 2007 or to support Rio Tinto with commencing an underground mining operation. I was born in 1982.

The Argyle lease occupies the traditional country of the Mirriuwung and Gidja peoples as well the Malignin and Woolah peoples. I am a Gidja woman of the Tiltuwam dawaam. My skin group is Nangala. My Gidja name is Wadjbarreyal. My grandmother is Madigan Thomas (dec) who was the holder of the Daiwul Ngarrangkarni story for Gidja women as described in the story line for Kilkayi. My mother is Ethel McLennon and I am a new mum to my daughter, Lila Marnmi Chealuck. We are the women amongst many other women who are Traditional Owners of the APA – past and present “beneficiaries” - who feel that we have failed in our duty to protect country and the women’s sacred site located at the Argyle Diamond Mine that is known today as the Barramundi Dreaming site.

Like many other Traditional Owners in my generation, we are what the Agreement refers to as “kids and grandkids”, we have inherited the consequences of decisions made since 2004 and feel incredible responsibility to get Mine Closure right. Not just on behalf of Traditional Owners, not just in support of other East Kimberley Aboriginal people and not just on commercial or legal terms as prescribed in the APA. We feel responsible for ensuring that the legacy often referred to during the “good years” is what remains at the point of relinquishment.

I have learnt the history of the agreement making process, listened to Traditional Owners concerns, watched the quality of life experienced by our families and communities, read numerous texts and documents including Kim Doohan’s “Making Things Come Good”, poured over the Indigenous Land Use Agreement, Management Plan Agreement, multiple Trust Deeds and historical documents, asked thousands of questions, spent countless hours in meetings and phone calls, on planes, in cars and on foot. In the past 2 years as Chair, the way I relate to my community and to my family has not changed but our country, our daam, and the way we relate to it has.

In our lived experiences, the dependency of the status quo, the industry of social services and the relationship between Traditional Owners and Rio Tinto, are in many ways evidence of an era that perceived Aboriginal people as problems to be dealt with rather than assets to be invested in.

As an unintended consequence of well-meaning people, we find that we are about to embark on what will undoubtedly change the way mine closure is undertaken – before, during and after the life of any mine in Western Australia. There have been benefits but the legacy we often hear about across the East Kimberley region is far from being achieved. We recognise that we have only one opportunity to get this right and that the results will either be used as a blueprint for mine closures in the State of Western Australia, or not. I certainly hope it's the former.

This is no longer about waiting for the private sector, Rio Tinto or the State Government to deliver on legal instruments in isolation or to make decisions that affect TOs and Aboriginal people alike, without our input. Unfortunately, the domino effect of poorly designed, poorly resourced or poorly executed policy has resulted in the “band-aid” approach, an approach that is also felt by non-Aboriginal people, often testing the social fabric of what makes the Region so resilient.

While I am entrusted to ensure what was promised through intent and implementation with the APA is achieved, the future of the East Kimberley Region requires a new way of thinking, innovation guided by culture and the very real need to stand together to ensure that Aboriginal people are valued for the assets that we are, not a problem to overcome. As Traditional Owners we will continue to make sure that our voices are heard and our rights are upheld as prescribed under the United Nations Declaration of the Rights of Indigenous People.

Addressing the impacts of Mine Closure and the findings contained within this Report requires support, representation and investment from industry and government, across portfolios and across party political lines. If we cannot succeed in this together, then we fail to deliver a better future for the next generation of Western Australians, we fail to uphold the intent of the Argyle Agreement and we fail in the very roles we have been entrusted to lead in.

My vision is to see our country, our people and our communities returned to their brightest. This is simply the first step in a long journey. A journey I hope my daughter can look back on in years to come and be proud of the legacy she, and so many others, have inherited.

Kia Dowell
Chairperson
Gelganyem Limited
Broome, 2020

Acknowledgements

First and foremost, acknowledgement is due to the Mirriuwung and Gidja Traditional Owners of the Argyle Participation Agreement who invited this update to the Taylor (2004) report as a reference point for an assessment of the circumstances facing Aboriginal people of the East Kimberley region prior to the closure of Argyle Diamond Mine. The resilience and strength of this group in sustaining a relationship with Rio Tinto and Argyle Diamond Mine while their country has been used for mineral extraction is duly recognised. The openness of these Traditional Owners and other Aboriginal leaders who participated in workshops in Kununurra, Warmun and Halls Creek in pursuit of regional collaborations for better wellbeing is appreciated. As for logistics and access to data, I am indebted to particular individuals and agencies including Rowena Alexander and Graham Dewar (Argyle Diamond Mine); Gavin Martin and Janet Reark (Rio Tinto); Amanda Wheeler (Gelganyem Limited); Christy Hawker, Samantha Betts and Danielle Tucker and Natasha Storey (Binarri-binyja yarrowoo Aboriginal Corporation); Jenni Rogers (Ord Valley Aboriginal Health Services); James Fitzpatrick (Telethonkids); Gavin Cleland (WA Country Health Service Kimberley); Sarah Morris (Nirumbuk Aboriginal Organisation); Jeff Gooding and Caroline Constant (Kimberley Development Commission); John Scougall (Wunan); Kathy Hough (True North); Karla Foster (NDIA Kimberley); Chris Dorrian (WA Department of Premier and Cabinet); Julie Considine, Karen Shanahan, Brendan Pettit, Jamie Craggs (WA Department of Communities); Mike Ayre, Christine McComb (WA Police Force); Mark Bloomfield and Adam Grzelec (WA Department of Training and Workforce Development); Gavin Morris (WA Department of Education); Dympna Forte, Sharon Davis and Jane Gostelow (Catholic Education Western Australia); Jeanette Koh, Le Jian, Jag Atrie, Maureen Hutchinson and Alan Joyce (WA Department of Health); Jennifer Endersbee (WA Department of Justice); Jennifer Carroll (WA Department of Transport); Jason Williams and Ross Ryan (National Indigenous Australians Agency); Melissa McKenzie, Jen Mackay (Commonwealth Department of Social Services); Mohammed Shahidullah and Angelina McRae (Australian Bureau of Statistics). Any errors arising from the processing of data from these sources are the responsibility of the author.

Executive summary

As a report on what's changed in the East Kimberley, the baseline for this analysis extends back to 2002 when the Kimberley Land Council (KLC) commissioned the preparation of a statistical profile of the population of the East Kimberley region, with particular focus on the Aboriginal population, as a key input to the KLC Argyle Diamond Mine (ADM) project. The 'ADM project' referred to the development of a comprehensive Indigenous Land Use Agreement over the ADM lease area and it involved preparation for, and finalisation of, formal negotiations between Traditional Owners and other stakeholders and the future implementation and monitoring of the agreement. The process was triggered by a range of factors, including the possibility of ADM commencing an underground mining operation. The alternative was mine closure around 2007.

The document produced by this commission was published initially by the Centre for Aboriginal Economic Policy at the Australian National University (ANU) in 2003 and then reprinted by ANU E Press in 2004 (Taylor 2004). It provided a set of social indicators that assisted negotiations toward the eventual establishment, in 2005, of the Argyle Participation Agreement and commencement of the underground mine. Crucially, it laid bare the fact that the East Kimberley had a substantial economic development challenge: the majority of its Aboriginal population remained overly dependent on welfare, was structurally detached from the labour market, and was ill-equipped (for a host of supply-side reasons) to engage with it.

This finding formed the background to the introduction of a number of measures by governments, Argyle Diamond Mine and regional Aboriginal organisations, that were designed to reverse this situation. Almost 20 years on, with impending closure of the Argyle underground project, and with renewed negotiations aimed at ameliorating potential impacts, the present report was invited by Traditional Owners of the Argyle Participation Agreement. Their purpose was to understand the nature and extent of change in the baseline social indicators set out in the original report as a means of bringing an essential quantum to discussions around local and regional needs and priorities.

The Argyle Diamond Mine is far from the only economic shock to have impacted on the region during this period, with the Ord Final Agreement and various government investment packages also looming large, but imminent closure of the Argyle project provides a convenient benchmark against which to reassess regional circumstances drawing attention, as it does, to the question of where to now for Aboriginal people? After all, part of Rio Tinto's own interpretation of a social licence to operate was a commitment to sustainable community and regional development that would outlive the life of any mine. The question inevitably arises, to what extent has this occurred?

Of further relevance is the emergence, post-ATSIC, of new region-wide planning structures in the East Kimberley under the Empowered Communities umbrella with its own needs for data to inform its Regional Development Agenda. Also of consequence since the baseline report there have been multiple Native Title determinations and these now cover almost the entire East Kimberley region. In 2002 there were no determinations in the region, today there are 29 that fall either wholly or partially within the land area of the East Kimberley. Presently, these are managed by 12 Registered Native Title Bodies Corporate (RNTBCs) with three more to be established. In the East

Kimberley, as elsewhere, these corporate bodies are increasingly engaged in social and economic development activities and have their own particular interest in the measurement of changing regional circumstances.

In response to these needs, what this report provides is a customised and detailed population-based analysis of Aboriginal social and economic change in the East Kimberley region over the 15-year period between 2001 and 2016 using public access data. The purpose is to assist Aboriginal people and their representative organisations in their strategic thinking and representation to government and others as they seek to achieve social and economic development goals. As anticipated, the time would always arise when interested parties would seek to establish what difference, if any, various policies, programs and investments have made to overall outcomes for Aboriginal people. This report provides the answer, at least as far as can be measured by official data.

Against a background of slowing population growth and ageing there has been absolute improvement in key measures—more people in mainstream employment, more on higher incomes, additional housing, increased school retention, fewer avoidable deaths etc., but what matters more is the volume of improvement relative to population (need). Here, change is often mixed with either negative or positive change in the employment rate (depending on definition), more people on higher incomes but poverty rates increasing, no change in low school attendance rates and mixed literacy and numeracy outcomes, less apparent housing need overall but continued high occupancy rates in many locations, significant decline in mortality and morbidity rates for some conditions but increase in others, lower, but still very high, arrest rates, and so on. Even in instances where improvement exists, sizeable gaps in outcomes between Aboriginal and other East Kimberley residents invariably remain. Furthermore, gaps have widened within the Aboriginal population, especially in regard to income and opportunity.

These findings, and many others, are presented in thematic sections that provide detailed statistical data from census and administrative sources on change in population, labour force, income, education and training, housing and infrastructure, health status, and crime and justice. It should be said that the types of data available are not necessarily designed with Aboriginal issues and interests in mind, nor do they cover the full range of what might be included in any assessment of Aboriginal wellbeing. However, to the extent that improvement in these areas does form part of the calculus of Aboriginal wellbeing as determined by Traditional Owners and the regional Aboriginal leadership, it is legitimate and beneficial to establish what has changed over the past 15 years. The implications for these stakeholders, and for those with whom they do business, are presented in a full summary section at the end of the report.

No sooner had this report been submitted than the World Health Organisation declared an international public health emergency in relation to a novel coronavirus-related disease, COVID-19. In quick time, of course, this was upgraded to a pandemic with devastating consequences for society and economy around the world, and not least in the East Kimberley. It is now clear that the data presented in the main body of this report are best seen as describing social and economic outcomes as they were just before the pandemic. Quite what these outcomes will look like post-pandemic remains to be seen and this is certainly a project worth planning for with some urgency. In the meantime, as an initial corrective, a postscript to the main report is provided to reflect on which social and economic characteristics of the regional population are likely to

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have implications for the unfolding of the pandemic and associated response measures, and how the pandemic and its associated response measures are likely to impact on social and economic outcomes.

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Abbreviations and acronyms

ABS	Australian Bureau of Statistics
AHPPC	Australian Health Protection Principal Committee
AIGC	Australian Indigenous Geographic Classification
AIHW	Australian Institute of Health and Welfare
ALRC	Australian Law Reform Commission
ANZSIC	Australian and New Zealand Standard Industrial Classification
ANZSOC	Australian and New Zealand Standard Offence Classification
ANZSCO	Australian and New Zealand Standard Occupational Classification
APONT	Aboriginal Peak Organisations of the Northern Territory
AQF	Australian Qualifications Framework
ASMR	Age-Standardised Mortality rate
ASR	Age-Standardised Rate
AQF	Australian Qualifications Framework
ASCO	Australian Standard Classification of Occupations
ATAR	Australian Tertiary Admission Rank
ATAS	Aboriginal Training and Support program
ATSIC	Aboriginal and Torres Strait Islander Commission
BBY	Binarri-binyja yawrawoo Aboriginal Corporation
CBO	Community Based Order
CDP	Community Development Program
CDEP	Community Development Employment Projects scheme
CHINS	Community Housing and Infrastructure Needs Survey
COAG	Council of Australian Governments
COP	Coalition of Peaks
CPI	Consumer Price Index
DOH	Department of Health
DSS	Department of Social Security
EHNS	Environmental Health Needs Survey
ERP	Estimated Resident Population
FIFO	Fly-in/Fly-out
ICD	International Classification of Diseases
ICU	Intensive Care Unit
IL	Indigenous Location
LGA	Local Government Area
MLCR	Module Load Completion Rate
NACCHO	National Aboriginal Community Controlled Health Organisation
NAPLAN	National Assessment Program – Literacy and Numeracy
NGO	Non-Government Organisation
NMS	National Minimum Standards
NIAA	National Indigenous Australians Agency
OECD	Organisation for Economic Cooperation and Development
PBC	Prescribed Body Corporate
RAESP	Remote Area Essential Services Program
TAFE	Technical and Further Education
TO	Traditional Owner
VET	Vocational Education and Training
WA	Western Australia
WACE	Western Australian Certificate of Education

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1. Regional profiling

Aboriginal people in the East Kimberley are once again at a crossroads. In highly personalised accounts in the Foreword to this report, the Chairpersons of Gelganyem Limited and Binarri-binyja yarrowoo Aboriginal Corporation relate how a major resource project in their region has consequences not only for those directly impacted by exploitation of traditional lands but also for those in wider areas affected by the imposition (and now withdrawal) of a large economic input to an otherwise small regional economy. As the Argyle Diamond Mine (ADM) moves to decommission, Aboriginal leaders across the region are contemplating future options for economic development and self-determination, a task now also affected by the (unforeseen) COVID-19 pandemic. It was felt that the closure of mining operations at Argyle presented a convenient moment to take stock. Much had been riding on expected benefits to the regional population not just from Argyle but from a growing list of regional development projects and State and Federal investment packages. Naturally, the question has arisen as to what difference has all of this made to the lives of Aboriginal people? As Des Hill mentions in the Foreword, a foundation for answering such a question was laid in the early 2000s with the production of a baseline report on social and economic conditions.

In 2002, acting on behalf of Traditional Owners of the Argyle Diamond Mine site, the Kimberley Land Council (KLC) commissioned a baseline demographic, social and economic profile of the Aboriginal population of the northern part of the East Kimberley (Taylor 2004). This was to form part of a social impact assessment exercise to assist a process of agreement-making between the various parties. Key to these discussions was consideration of whether to commence a period of wind-down in pit and processing operations at the Argyle mine leading to closure by 2010, or whether to extend these activities with underground production into the next decade with closure somewhere around 2020. We now know, of course, that the latter occurred with underground mining proceeding and Traditional Owner consent to and support for this outlined in the *Argyle Diamond Mine Participation Agreement-Indigenous Land Use Agreement* signed in 2005 (Doohan et al. 2012). We also now know that 2020 was the correct prognosis for closure.

As anticipated, ADM and Traditional Owners are once again in negotiation, this time to consider matters related to the processes and impacts of mine closure, a phase in the mining cycle that has less finality than implied as the impacts of resource extraction can linger for decades (O’Faircheallaigh and Lawrence 2019). Accordingly, the ADM process of decommissioning involves ongoing participation for Traditional Owners in a range of activities such as environmental rehabilitation. To inform discussions surrounding these arrangements, the parties once again consider it beneficial to take stock of social and economic circumstances and, in particular, to establish with statistical information what outcomes have changed for Aboriginal people in the wider East Kimberley region since the time prior to the Argyle Agreement. This focus on region-wide outcomes is a recognition that for local populations to ultimately benefit from mining requires the development of a sustainable mixed regional economy, especially by the time of post-mining, along with an enhanced Aboriginal capacity to participate. This is something that Rio Tinto, in particular, has declared as an essential element of its social licence to operate on Aboriginal lands (Harvey and Gawler 2003; Harvey 2004; Harvey and Nish 2005).

In defining this wider region of interest for the 2003 study, an ‘area affected’ was determined to include the town of Halls Creek and areas north through Kununurra to Wyndham and Kalumburu—effectively the northern half of the former Wunan ATSIC Regional Council area. To establish population-based indicators for this area synthetic estimates of population were created since more precise estimates were not available for the designated geography. The present analysis is cast wider and examines outcomes in each of the two East Kimberley Local Government Areas of Halls Creek and Wyndham-East Kimberley for which official estimates of Aboriginal population are available. This extends the boundary of the original analysis to incorporate lands south of Halls Creek and west to Yiyili and Kupartiya. As necessary, and as far as possible, new 2001 (or nearest date) baseline figures for this revised geography are generated.

In constructing a statistical time series for these Local Government Areas (hereafter referred to in combination as the East Kimberley region) the focus, as before, is on developing whole-of-population public access social indicators from a variety of published and unpublished sources. These include the Census of Population and Housing, administrative collections held by Commonwealth and Western Australia government departments, ADM company records and data from regionally-based agencies and organisations as appropriate.

It should be stated that the types of data yielded by such sources are not designed with specific Aboriginal interests and issues in mind nor do they cover the full range of what might be measured in any assessment of Aboriginal wellbeing (see, for example, Taylor 2008; Yu and Yap 2016). In short, they are not developed from what has been referred to as an ‘Indigenous standpoint’; in fact, very few statistical data around the world are (Walter and Andersen 2013; Kukutai and Walter 2015). However, to the extent that improvement in regional employment outcomes, incomes, education, housing, health and justice do form part of a general calculation of Aboriginal wellbeing according to local Aboriginal stakeholders (namely, the sorts of indicators detailed in the initial baseline study) then it is legitimate to calibrate change in these as a partial contribution to the rapid appraisal of impacts, not just of mining in the region, but of the whole gamut of economic and social developments that have occurred in the East Kimberley since the early 2000s. The primary benefit of such an exercise is the development of a common quantum of change in population-level measures that can assist in establishing the size and composition of regional trends, needs and priorities. This is what the present report seeks to provide.

Achieving this is not as straightforward as it may seem for a number of reasons. First of all, two broad sources of statistical data need to be accessed—census and administrative data—and some of the categories produced by these have changed since the early 2000s. Since the emphasis here is on developing robust time series to identify change, it is essential that data sets are consistent over time and this is not always achievable. Secondly, the combined boundaries of Halls Creek and Wyndham-East Kimberley LGAs do not precisely match the boundary of the Kununurra Indigenous Region which is modelled on that of the former Wunan ATSIC Region. As these geographies are sometimes used for different datasets, problems of concordance can arise. The main difference is the inclusion in Halls Creek LGA of Yiyili and associated communities. However, as the effect on population counts is only minor it is reasonable to apply the term ‘East Kimberley region’ interchangeably for each geography although the population denominator used for estimating age-distributed levels is always the Kununurra Indigenous Region as this is the one for which population estimates are

exclusively available by age. Otherwise, ABS estimates for total populations in each Local Government Area are used as appropriate.

A further point to note is that all of the data compiled for analysis refer to persons who have indicated the East Kimberley as their usual place of residence in either the census or in administrative data collections. Because this is a population-based analysis, for the most part indicators are sourced for census years, the last one of these being 2016. Census year population estimates therefore become the all-important denominator for most rates. While this inevitably dates much of the analysis, some time-lag in profiling is always going to occur given the time it takes the ABS to generate and release population estimates after each census (two years) and the lengthy processes involved in producing annualised administrative data. Apart from usual residence data from the 2001 census, all census data were extracted from the Australian Bureau of Statistics' (ABS) TableBuilderPro, a web-based platform that allows the extraction of confidentialised census cross-tabulations. As for administrative data, these were supplied by relevant government departments and other agencies according to their own rules of population definition and data extraction. Also, while use of the label 'Indigenous' in the first report was statistically correct, as this is the official umbrella term used by the ABS when referring collectively to Aboriginal and/or Torres Strait Islander people, it is acknowledged that the preference in the East Kimberley is for using the term 'Aboriginal' in statistical reporting and this is the practice adopted here. In any event, these statistical populations amount to virtually the same thing in the East Kimberley.

As with the initial report, it remains the case that no comprehensive statistics of the type presented in this report are available for Traditional Owner groups in the East Kimberley, indeed this is the case across Australia. This has its greatest drawback in the context of Native Title (Taylor et. al. 2012; Yu 2012). The most dramatic change in governance arrangements since the baseline report is arguably the emergence of Native Title determinations that now cover almost the entire East Kimberley region. In 2002 there were no determinations, today there are 29 that fall either wholly or partially within the land area of the East Kimberley. Presently, these are managed by 12 Registered Native Title Bodies Corporate (RNTBCs) or Prescribed Bodies Corporate (PBCs) with three more to be established. In the East Kimberley, as elsewhere, these corporate bodies are increasingly engaged in social and economic development activities and have their own particular interest in the measurement of changing regional circumstances. Despite this, however, official population and social indicator data are still only compiled and made available for mainstream government administrative or statistical areas, most of which do not match up with Native Title boundaries and none of which identify Native Title holders. As a consequence, the ability of PBCs to readily acquire data on the social and economic circumstances of their own constituents for internal planning and to make public representation on their behalf is substantially constrained.

This constraint has long been recognised and one solution to date has been for PBCs to gather such data for themselves, albeit with significant financial support for capacity-building and implementation from government and/or the private sector (Taylor et al. 2012; Yu and Yap 2016). There is a case for considering whether similar resources should be provided across the board in recognition of local group data needs and the requirement of PBCs to respond to the interests of Native Title holders. An immediate example of this exists within the context of the Wyndham sub-regional plan prepared

by a coalition of local Aboriginal organisations (including Balangarra PBC) which includes a proposal for a Wyndham-specific household survey to improve the quality of local data for community development as part of the Empowered Communities Regional Development Agenda.

Such a case resonates with recent discussion that has emerged internationally around the theme of indigenous data sovereignty and rights to local ownership and control over data (Kukutai and Taylor 2016; Carroll Rainie et al. 2019). In Australia, different Aboriginal and Torres Strait Islander peoples remain statistically invisible even though they have a growing need for dedicated information as incorporated groups. In light of sentiments regarding local representation and participation in decision-making that arose from the First Nations Regional Dialogues on constitutional recognition (<https://www.referendumcouncil.org.au/dialogues>) the present report, as the initial one, remains constrained by the lack of data regarding communities of interest.

Finally, some comment should be made about methodology. It is fast becoming a well-known, but unfortunate, fact that the five-yearly census fails to count all Aboriginal people, not to a small degree, but substantially. At the 2016 census, it is estimated (by the ABS) that as much as 28% of the Aboriginal population of the East Kimberley was not enumerated (ABS 2017). What this means is that raw census counts of variables such as employment numbers or persons per dwelling cannot be taken at face value—they need to be adjusted for undercount. To this end, the method used here is to regard the census as a large sample survey from which essential rates of events (such as the employment rate) can be derived. To establish true levels (such as numbers actually employed) these rates must then be applied to appropriate cohorts of population using adjusted census counts in the form of ABS population estimates. Further errors of omission involving non-response to census questions occur across all census variables and some of these can be substantial for Aboriginal respondents in the East Kimberley (e.g. level of qualification 13.5%, personal income 12.1%) but there is no way to adjust for these other than by omitting non-response from the calculation of rates. There are issues too with the completeness of administrative data in so far as they assume consistent self-identification of the same individuals across wide-ranging administrative settings, an outcome that is far from certain. It is also unclear whether numerator populations established from administrative data are exactly drawn from denominator populations based on ABS estimates—in truth, this is unlikely and therefore any rates calculated using these sources are probably best described as approximate only.

Putting all of this together, official data from the five-yearly census and from the more continuous gathering of information by government agencies provide only an indication of what Aboriginal social indicators and their levels might be, albeit based on a fairly consistent set of definitions and administrative processes and reasonably large samples of likely true populations. All of the data presented in this report, and in the original report, indeed in any report using public access statistics, are only analogues of real people and their circumstances on the ground. They are available for administrative units only rather than for social and economic constructs that might have more relevance to Aboriginal people. Nonetheless, they currently remain the best available statistical product that result from a variety of interactions between individuals and the State. Any attempt to move beyond this to improve data quality, content, and utility at the level required by representative bodies awaits a shift towards greater Aboriginal

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governance of data design and gathering processes (Kukutai and Taylor 2016). This issue is revisited by way of conclusion.

2. Population change

In discussing and measuring population change it is necessary to be clear about definitions as a range of counts and estimates are available. For example, each census produces a *de facto* count of people who are present in the East Kimberley region on census night. Then, there is a *de jure* count of people across Australia who indicate the East Kimberley as their usual place of residence on census night regardless of where they are actually counted. Finally, the ABS publishes post-census estimates of Aboriginal and non-Aboriginal resident populations of the East Kimberley in recognition of the fact that errors occur in each census enumeration. In the assessment of population change, and throughout the report, only these latter categories based on usual place of residence are used.

A key measure, then (since it heavily influences the post-census estimates), is the five-yearly census count of usual residents. This is shown by LGA for each of the past four censuses in Tables 2.1. and 2.2. The first point to note is that Aboriginal population counts for each LGA have been broadly similar and reasonably stable over time except in 2001 and 2011 when the counts in Halls Creek were notably higher than in 2006 and 2016. As indicated, though, variation in these counts can be substantially affected by non-response to the census question on Aboriginal identity and this also affects the count of non-Aboriginal populations. As a consequence of this census error (and others), it has never been possible to fully establish the ‘true’ size of the Aboriginal population of the East Kimberley (or anywhere in Australia for that matter). However, if we discount these non-responses, we can say that Aboriginal people comprised 82% of the usual resident count of Halls Creek LGA in 2016 and 37% of the count in Wyndham-East Kimberley. We can also say that these proportions have been reasonably stable over time.

Table 2.1 Aboriginal and non-Aboriginal usual resident counts, Halls Creek LGA 2001-2016

Year	Aboriginal	Non-Aboriginal	Not stated	Total
2001	2,909	538	207	3,654
2006	2,480	458	198	3,136
2011	2,784	706	70	3,560
2016	2,425	535	307	3,269

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

Table 2.2 Aboriginal and non-Aboriginal usual resident counts, Wyndham-East Kimberley LGA 2001-2016

Year	Aboriginal	Non-Aboriginal	Not stated	Total
2001	2,317	3,700	1,094	7,110
2006	2,257	3,387	952	6,596
2011	2,715	4,399	684	7,798
2016	2,338	4,004	811	7,148

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

As mentioned, the ABS makes adjustments to census counts using estimates of census error such as net undercount of the population and non-response to the question on Aboriginal and Torres Strait Islander status. Sometime (usually two years) after each census it releases small area Estimated Resident Population (ERP) figures for Indigenous and non-Indigenous populations and it has done this for Local Government Areas since 1986, although figures for 1981 were also produced internally. Since 2006, estimates by age breakdown have only been available for the Kununurra Indigenous

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Region (which is effectively the same as the two LGAs combined even through the boundaries differ slightly). These Indigenous Region data therefore provide the best available measure of changing age distributions and they are used in this report to adjust census counts as appropriate through to 2016. They also form the basis for population projections through to 2031.

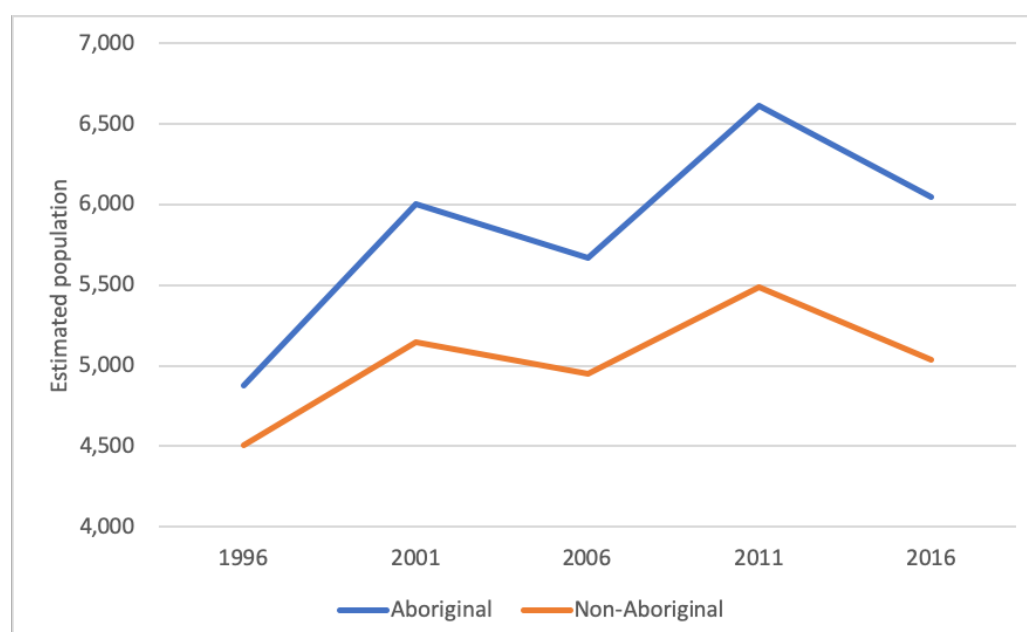
Figure 2.1 and Table 2.3 show how these resident Aboriginal and non-Aboriginal estimates have changed over the 20-year period to 2016. Both sets of estimates have varied over time in tandem but with a general trend towards a progressive increase in numbers. Aboriginal people have remained steadily in the majority and they have increased their share of the regional population reaching almost 55% in 2016. Substantial increases in the Aboriginal estimates between 1996 and 2001 and again between 2006 and 2011 might raise questions about census coverage at the earlier points in time but equivalent fluctuations in the rest of the population suggest that these might well reflect real shifts in population levels related to local influences.

Table 2.3 Aboriginal, non-Aboriginal and total Estimated Resident Populations: East Kimberley region 1996 to 2016

	Aboriginal	Non-Aboriginal	Total	Aboriginal % of total
1996	4,877	4,507	9,364	52.1
2001	6,000	5,142	11,142	53.8
2006	5,666	4,951	10,817	52.4
2011	6,611	5,488	12,099	54.6
2016	6,046	5,033	11,079	54.7

Source: Taylor 2003; ABS Catalogue nos. 3230.0, 3231.0, 32380.0, 3238.0.55.001, 3238.0.55.00

Figure 2.1 Aboriginal and non-Aboriginal Estimated Resident Populations: East Kimberley region 1996 to 2016



Source: Taylor 2003; ABS Catalogue nos. 3230.0, 3231.0, 3238.0.55.001, 3238.0.55.002

Whatever the case, these estimates raise a number of concerns about the capacity of the ABS (or any other agency of government for that matter) to adequately enumerate Aboriginal residents of the region. The problem is highlighted by a consistent gap over time between the numbers counted at each census and the size of adjustments that are

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required in order to produce final estimates of the population. Table 2.4 shows the proportional and numeric size of this gap in the East Kimberley. In 2001, the estimated Aboriginal population was 27% higher than the population counted on census night and the scale of this difference has persisted at each census despite the fact that the ABS has committed more and more resources to remote area enumeration. This raises a question about how one might usefully deploy demographic, social and economic data that are drawn from barely three-quarters of a population? As we have seen, one solution, and the one applied here, is to use census counts as representing a large sample of the population in order to establish rates of events with eventual levels determined by population weights based on ERPs.

Table 2.4 Difference between Aboriginal usual residence counts and Aboriginal estimated resident populations: East Kimberley region¹, 1996 to 2016

	Usual residence census count	Estimated resident population	Difference	% Difference
2001	4,713*	6,000	1,287	27.3
2006	4,337	5,666	1,329	30.6
2011	5,505	6,611	1,106	20.1
2016	4,761	6,046	1,285	27.0

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016, ABS Catalogue no. 3238.0.55.001

1. Refers to Kununurra Indigenous Region

* Place of enumeration count

Population distribution

At the Local Government Area level there has been a steady shift in population distribution away from Halls Creek LGA towards Wyndham-East Kimberley. Tables 2.5 and 2.6 show estimated Aboriginal and non-Aboriginal resident populations in each Local Government Area from 2001 to 2016. These show that while the Aboriginal population is evenly distributed between the two LGAs there has been a gradual shift in distribution over time towards Wyndham-East Kimberley. In 2001, 45% of the regional Aboriginal population was resident in Wyndham-East Kimberley LGA and by 2016 this had risen to 50% although the numbers implicated in this shift were relatively small—Halls Creek was lower by 325 persons and Wyndham-East Kimberley was higher by 371. Non-Aboriginal residents, on the other hand, have consistently been heavily concentrated in Wyndham-East Kimberley.

Table 2.5 Aboriginal estimated resident populations by Local Government Areas in the East Kimberley, 2001-2016.

	Halls Creek LGA	Wyndham-East Kimberley LGA	Halls Creek % of regional population	Wyndham-East Kimberley % of regional population
2001	3,292	2,708	54.9	45.1
2006	2,886	2,780	50.9	49.1
2011	3,205	3,406	48.5	51.5
2016	2,967	3,079	49.1	50.9

Source: ABS Catalogue no. 3238.0.55.001

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Table 2.6 Non-Aboriginal estimated resident populations by Local Government Areas in the East Kimberley, 2001-2016.

	Halls Creek LGA	Wyndham-East Kimberley LGA	Halls Creek % of regional population	Wyndham-East Kimberley % of regional population
2001	639	4,503	12.4	87.6
2006	572	4,379	11.5	88.5
2011	688	4,800	12.5	87.5
2016	632	4,401	12.6	87.4

Source: ABS Catalogue no. 3238.0.55.001

As for individual localities within the East Kimberley, Table 2.7 shows the rank order of Aboriginal usual residence counts in 2016 using the ABS' 'Indigenous Location' (IL) classification together with equivalent non-Aboriginal counts. Also provided are the 2006 census counts of Aboriginal population in order to provide some basis for assessing change over time (2001 usual residence counts are not available for these detailed geographies). Given the substantial and growing census undercount in the region it is not clear how reliable these census counts of Indigenous Locations are over time. For example, the substantial apparent growth in the population at Warmun may simply reflect poor enumeration in 2006; likewise, the decline at Balgo in 2016. Having said that, the key point to note is that the overall trend points to a growing concentration of regional population in the main centres, especially Kununurra and Halls Creek possibly as people have followed, or been directed, by the availability of housing, services, and jobs.

Table 2.7 Aboriginal Usual Residence counts by main settlements in the East Kimberley region, 2006 and 2016

Indigenous Area/Location	2006	2016	Change (n)	Change (%)
Kununurra	993	1,149	156	15.7
Halls Creek	853	1,031	178	20.8
Kalumburu	359	374	14	4.1
Wyndham	308	360	47	16.9
Warmun	194	491	297	153.1
Balgo	410	289	-121	-29.5
Kundat Djaru	111	165	55	48.6
Mindibungu	119	133	16	11.7
Mulan	99	91	-8	-8.0
Rest of East Kimberley	1,291	680	-438	-47.3
% of population counted in main settlements	72.7	85.7		

Source: ABS Census of Population and Housing 2016

While Table 2.7 provides a more detailed sense of the geography of regional population change, what it does not reveal is the extent of this in individual smaller communities and town-based Aboriginal reserves across the East Kimberley. In 2001, a total of 69 discrete Aboriginal communities were reported across the East Kimberley by the ABS' Community Housing and Infrastructure Needs Survey (CHINS) but only 7 of these are identified by the 2016 census geography. The ability to report on population change in the majority of individual locations is thus highly constrained. While the Indigenous Location geography represents the lowest unit within the census classification that is specifically intended to identify Aboriginal communities, many of these remain statistically invisible as they are subsumed under large area geographies. In Table 2.7

they are cumulated under the category ‘Rest of East Kimberley’. In 2016, they accounted for 13% of the East Kimberley Aboriginal population. This was up slightly from 11% in 2006.

Unfortunately, the CHINS was abandoned by the Australian government after the 2006 Census following the abolition of the Aboriginal and Torres Strait Islander Commission (ATSIC) and so the data in Table 2.7 are now the best remaining official data available on community population change. Precisely what has occurred in the many communities that are not listed in Table 2.7 is a moot point and one that is of interest in the context of the regional services reform process since the so-called ‘Road Map’ for reform uses a population minimum of 50 persons as one of its criteria for investing and divesting in services and capital works. Advice provided by the Department of Communities for a contemporaneous project in the Pilbara (RIC 2018) was that populations are underreported because their head tenant rent collection model is the only source of data and because many tenants are transient. Furthermore, they tend to rely on (inadequate) census data for population numbers and, in any event, they no longer have service responsibilities for the majority of communities. Consequently, the issue of data quality/availability for particular localities often doesn’t arise for the Department of Communities. The upshot (and irony) is, despite heightened policy interest in the circumstances of Aboriginal people in the region, there are now less overall data, and less reliable data, on their detailed distribution across the region than there have been in the past.

Inter-regional migration

The census question on usual place of residence 5-years ago provides for the calculation and analysis of movement in and out of the East Kimberley between each census as well as the degree to which people remain resident within the East Kimberley. Table 2.8 shows the proportions that remained as East Kimberley residents between each census period. This shows that most Aboriginal people tend to stay within the region whereas about half of the non-Aboriginal population changes their region of residence between each census year. However, there is still a good deal of inter-regional movement of Aboriginal people.

Table 2.8 Proportions of Aboriginal and non-Aboriginal populations remaining resident in the East Kimberley region between census counts: 2001-2016

	2001-06	2006-11	2011-16
Aboriginal	81.5	85.4	81.3
Non-Aboriginal	48.4	45.4	54.6

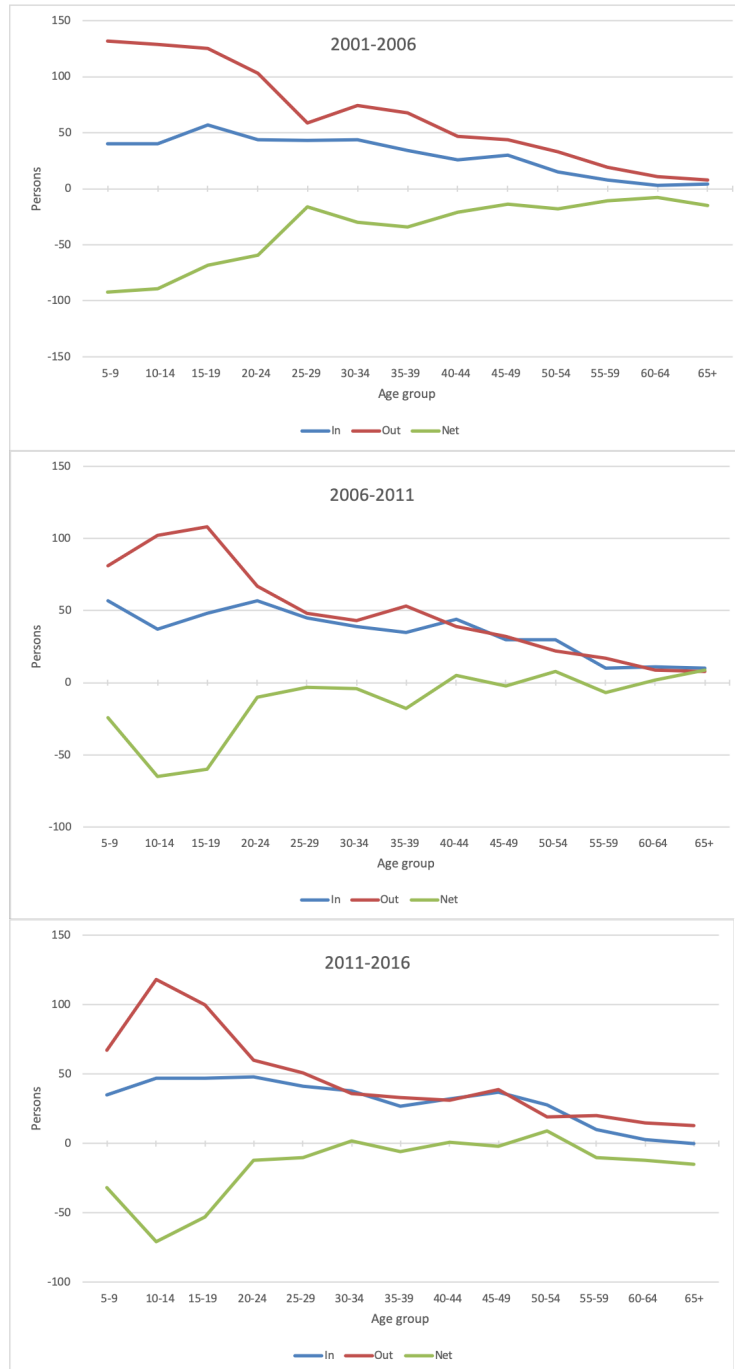
Source: ABS Census of Population and Housing 2006, 2011 and 2016

Figure 2.2 shows the number of Aboriginal people of different ages moving in and out of the East Kimberley between each census period since 2001. Also shown is the net balance of these movements. The results are quite striking as they reveal consistent net losses of population due to migration over each census period and across most age groups. Of particular interest is the fact that these losses have been concentrated in the youngest age groups and yet there is only limited indication (in 2001-06) of corresponding losses at parental ages that are typically reflective of family migration. In effect, the sustained out-migration of persons under the age of 20 years appears to

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be largely unilateral. Given that much of this involves the school-age range of 10-19 years it is suggestive of out-migration for education and training and there is some evidence to support this proposition.

Figure 2.2 Age distribution of Aboriginal migration in and out of the East Kimberley region: intercensal periods 2001-2016



Source: Customised tables, ABS Census of Population and Housing 2006, 2011 and 2016

For example, non-government schools in the East Kimberley that provide education up to Year 10 have for some time sent many of their junior and senior secondary students to a number of Colleges elsewhere in WA. Presently, these include St Mary's College in Broome, La Salle College, Clontarf College and Willetton Senior High school in Perth, Edmund Rice College at Bindoon north of Perth, and Christian schools in

Coolgardie and at Gibson near Esperance. In addition, the Wunan Foundation runs the Kimberley Education Excellence Program which offers Aboriginal student scholarships to schools in Perth, Melbourne and Sydney. This is based on a model that involves small groups of students living together in home-settings with Aboriginal house parents.

While a number of Aboriginal youth clearly spend periods of time away from the East Kimberley for schooling and training, acquiring data on these movements is not straightforward as no single systematic source exists and administrative systems, such as they are, are ill-equipped for data extraction. One obvious option is to obtain figures on those in receipt of Abstudy (Living Allowance) as this program covers living away from home expenses. At the time of the 2011 census there were 40 Aboriginal residents in receipt of this payment and 29 at the 2016 census. From the numbers on out-movement in Figure 2.2 this would seem to only account for between 20 and 40% of the net migration loss at high school ages leaving some doubt as to the impact of such movement. Another potential source of data is from the Student Subsidy Travel Scheme that is administered by the WA Department of Transport and provides travel assistance to school and tertiary students who are geographically isolated. While this does not separately identify Aboriginal students, in the third quarter of 2016 it recorded a total of 41 participants.

While available data seem to point to a figure of around 40 absentees, the fact is the number of school-age children away from the East Kimberley for varying periods of time during the school year (especially at census time in August) remains unknown. This presents a potentially significant issue for understanding the extant and projected demographic composition of the East Kimberley Aboriginal population. Put simply, students who are away from home at boarding school at the time of the census are counted as usual residents of the school location rather than that of their family home. This is because the census household form asks, “Where does the person usually live”, and then instructs the following: “For boarders at boarding school write the address of the boarding school or college.” In terms of demographic accounting, such students are effectively lost to the resident population.

Trends in fertility

Data on the number of births each year to Aboriginal women in the East Kimberley are available from two sources: the ABS’ national database of births formally registered with State authorities by parents (in WA this is the Registry of Births, Deaths and Marriages administered by the Department of Justice); and the WA Midwife’s Notification System administered by the Department of Health. The latter collates data from midwives and other birth attendants who use information obtained from mothers and from hospital or other records to complete a notification form for each birth.

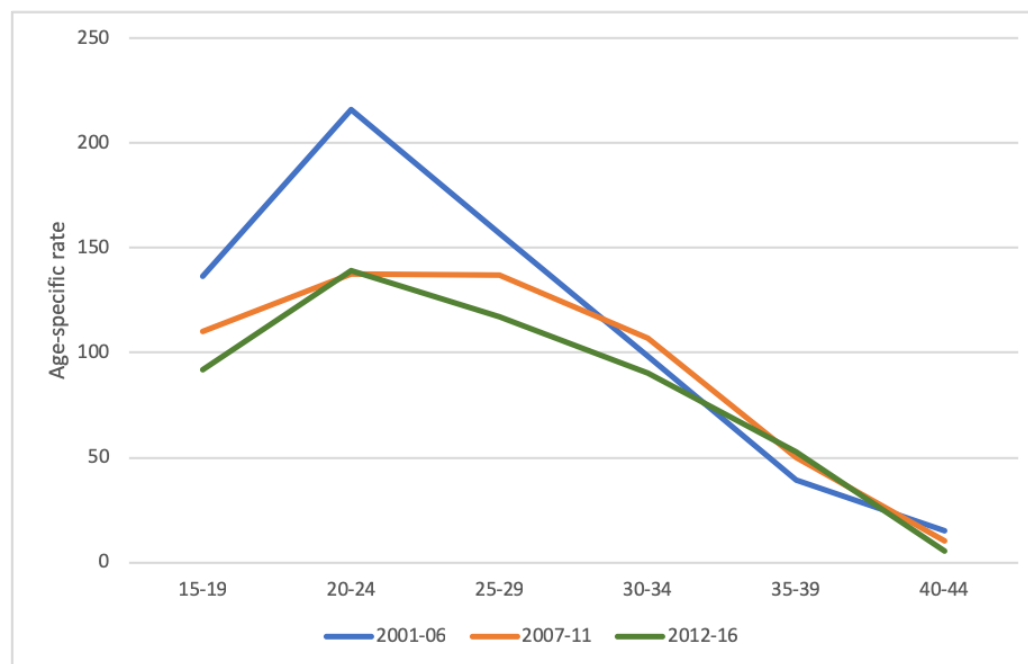
Figure 2.3 shows the trend in age-specific fertility rates for Aboriginal women in the East Kimberley between 2006 and 2016 based on the Midwife’s collection. This reveals a substantial drop in rates at all ages below 30 years and a slight rise at ages above 30 years all of which is indicative of delayed child-bearing. The net effect of this is a lowering of the Total Fertility Rate (TFR) from 3.31 children per woman in 2002-06 to 2.48 in 2012-16. Data on year of birth occurrence from the ABS’ registered births collection reveals exactly the same pattern of decline but with much lower TFRs falling from 2.41 in 2002-06 to 1.97 in 2012-16. This latter figure is well below replacement level which seems implausible given that the average TFR for Aboriginal women across

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remote Australia in 2016 was 2.35 (ABS 2019). Because of this discrepancy, preference is given in this report to data from the WA Midwife's collection.

Supporting evidence for this trend towards delayed child-bearing is provided by successive census data on children ever born. Figure 2.4 shows the proportion of Aboriginal women in 5-year age groups between 20 and 64 years who have ever had a child. The marked drop in proportions between the ages of 20 and 29 years and the slight increase between 30 and 39 years is consistent with the pattern observed in the age-specific rates derived from the Midwife's and ABS datasets. Triangulation such as this provides reasonable grounds for confirming fertility decline among Aboriginal women as a pervasive regional social trend that is consistent with equivalent empirical observations from around the country (Venn and Crawford 2018).

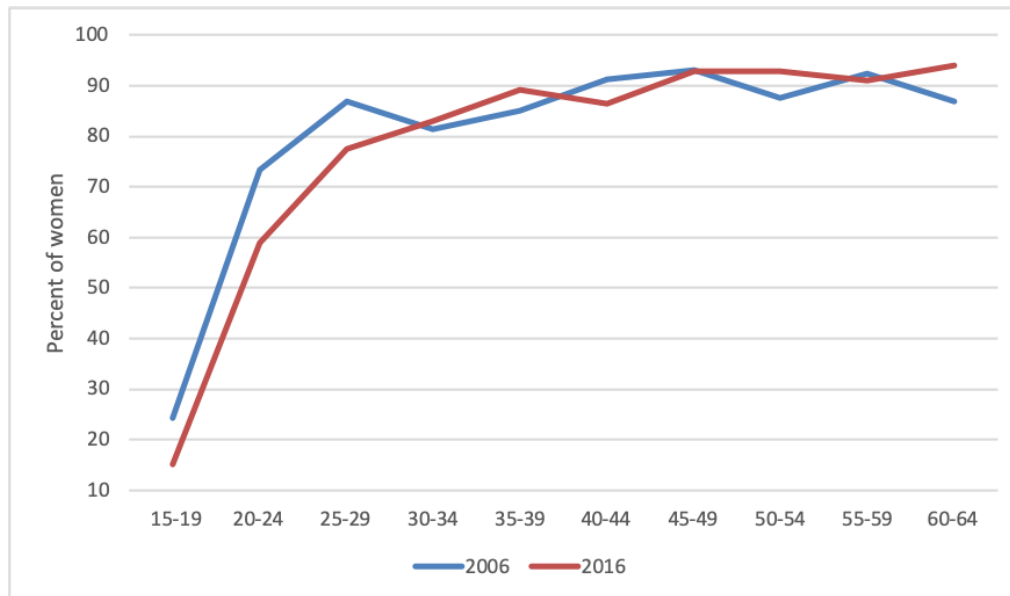
Figure 2.3 Age-specific fertility rates*: Aboriginal women in the East Kimberley region, 2001-06, 2007-11 and 2012-16



Source: WA Midwife's Notification System, Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

*Births per thousand women in each age group

Figure 2.4 Percentage of Aboriginal women aged 15-64 who have ever had a child: East Kimberley region, 2006 and 2016

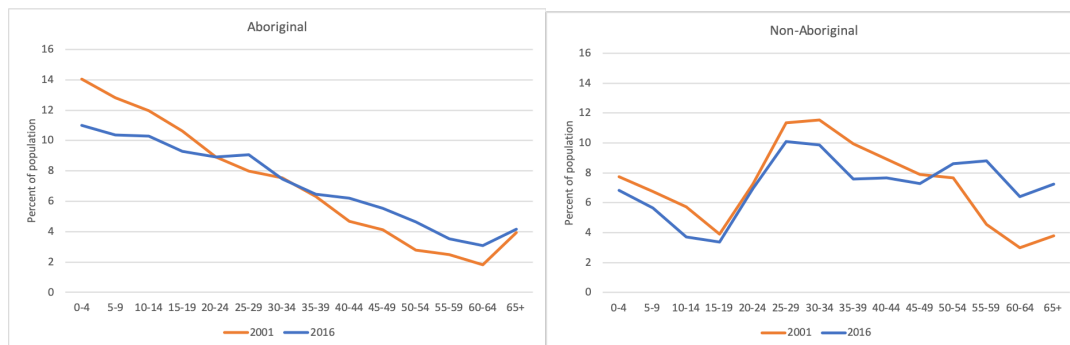


Source: ABS Census of Population and Housing

Age and sex composition

A key component of demography that has major implications for development planning is age structure. This is also a component that can radically change over time as a consequence of the age-selective net migration as well as variable mortality and fertility. Figure 2.5 reveals changes in the age distribution of Aboriginal and non-Aboriginal estimated resident populations of the East Kimberley between 2001 and 2016.

Figure 2.5 Age distribution of Aboriginal and non-Aboriginal estimated resident populations: East Kimberley region 2001 and 2016



Source: ABS 2003, 2018a

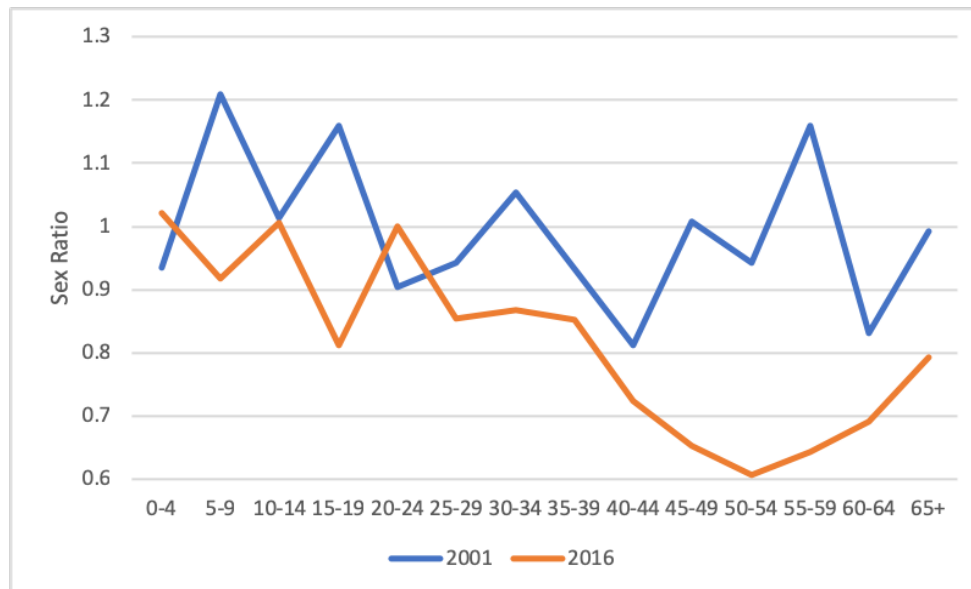
The Aboriginal population shows clear signs of ageing with a much flatter curve in 2016 due to reductions in the percentage of the population in age groups under 30 years of age and increases in virtually all age groups after that. A similar pattern of ageing is evident for the non-Aboriginal population although here this has occurred among older age groups beyond 50 years—all age groups below this are less prevalent than they were 15 years ago. Of course, the other feature of the non-Aboriginal age distribution is the manner in which it reflects workforce participation with half of the population (51%) concentrated in the age range 25-54 in 2016 compared to just 39% of the Aboriginal population. Having said that, it is also noticeable how the non-Aboriginal population at

older ages has grown since 2001 suggestive of increased retirement *in situ*. Thus, despite ageing, the Aboriginal population of the East Kimberley remains relatively youthful in profile compared to other residents with 41% under 20 years of age, although this is down from 49% in 2001. Of particular interest is change in the proportion of the population of working-age as opposed to those of young and old age. As this proportion increases there is greater potential for an economic return from demographic change, as we shall soon discuss.

Sex ratio

One demographic shift since 2001 that is quite marked, and most likely due to a persistent and widening gap in mortality rates between Aboriginal males and females in the region (see Figure 7.1), is a substantial drop in the regional sex ratio represented by the number of males divided by the number of females at each age group (Figure 2.6). A ratio of 1.0 indicates parity between males and females. Anything above 1.0 indicates a surplus of males, below 1.0, a surplus of females. In 2001, males outnumbered females at various points along the age distribution but especially at the younger ages of 5-9 years and 15-19 as well as in the older age group of 55-59. At all other ages, numbers were close to parity. By 2016, however, males only barely outnumbered females in the infant age group and thereafter they were in the minority at almost all ages but especially from 25 years onwards with a steady decline in the sex ratio through to age 50-54 where there were only 106 males to 175 females. Overall, in 2016, females outnumbered males over the age of 25 years by 32% (1,721 females to 1,307 males) whereas in 2001 the numbers were almost at parity (1,226 to 1,274).

Figure 2.6 Aboriginal sex ratios: East Kimberley region 2001 and 2016





















Source: ABS 2003, 2018a

One consequence of changes in age structure has been a shift in the Aboriginal population share of each age group that is resident in the East Kimberley. Table 2.9 shows these shifts for males and females in 2001 and 2016. Differential changes in Aboriginal and non-Aboriginal age structure mean that by 2016 Aboriginal males and females comprised slightly reduced (but still high) shares of the infant population. There were also relative increases in the Aboriginal population at high school and prime


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working ages. Interestingly, the Aboriginal share of the aged population over 55 years declined in line with the rising number of non-Aboriginal residents of older age.

Table 2.9 Aboriginal male and female percentage shares of total estimated resident population by five-year age groups: East Kimberley region 2001 and 2016

Age group	Males		Females	
	2001	2016	2001	2016
0-4	66.2	65.2	69.4	66.7
5-9	71.4	69.5	65.8	67.9 
10-14	69.2	76.5 	72.5	77.3 
15-19	74.0	73.3 	78.2	79.9 
20-24	53.7	59.6 	64.4	61.7
25-29	41.4	50.5 	48.9	53.0 
30-34	41.2	48.5 	45.2	46.9 
35-39	39.7	51.0 	45.3	50.2 
40-44	31.6	44.4 	45.1	53.4 
45-49	34.4	39.6 	41.7	54.9 
50-54	25.4	32.1 	35.1	45.6 
55-59	34.3	25.8	45.4	38.7
60-64	31.6	28.8	54.6	44.9
65+	49.8	32.6	61.0	50.7
Total	50.6	51.6	57.2	57.3

Based on ABS 2003 and 2018a

 Aboriginal share of regional population age group increased

As for age groups that typically form the target of policy intervention, changes here are shown in Table 2.10. Selection of these groupings is dictated somewhat by the availability of population estimates at five-year intervals only. Thus, the infant years leading up to compulsory schooling are identifiable as 0-4 years, but for the years of compulsory schooling we are forced to use 5-14 years, whereas compulsory schooling in Western Australia now extends to 17 years. Thereafter, we can identify the approximate transition years from school to work as ages 15-24 years, while the prime working-age group is identified here as ages 25-54. Typically, in the Australian workforce, and in International Labour Organisation convention, working-age extends to 64 years with those over 65 years representing the aged and pensionable. However, health conditions associated with ageing often affect Aboriginal people earlier than other Australians. Consequently, the Commonwealth provides access to aged care services at 50 years of age for Aboriginal people in comparison to 65 years for the broader population. Nonetheless, many Aboriginal people over the age of 50 years are actively engaged in employment in the East Kimberley and so some concession is made for this with the lower limit for the ‘aged’ population in Table 2.10 set at 55 years.

Table 2.10 Change in the East Kimberley Aboriginal estimated resident population by policy-relevant age groups: 2001-2016

Age group	2001	2016	Change (n)	Change (%)
0-4	842	665	-177	-21.0
5-14	1,486	1,247	-239	-16.1
15-24	1,172	1,100	-72	-6.1
25-54	2,006	2,379	373	18.6
55+	494	649	155	31.4
Total	6,000	6,040	40	0.7

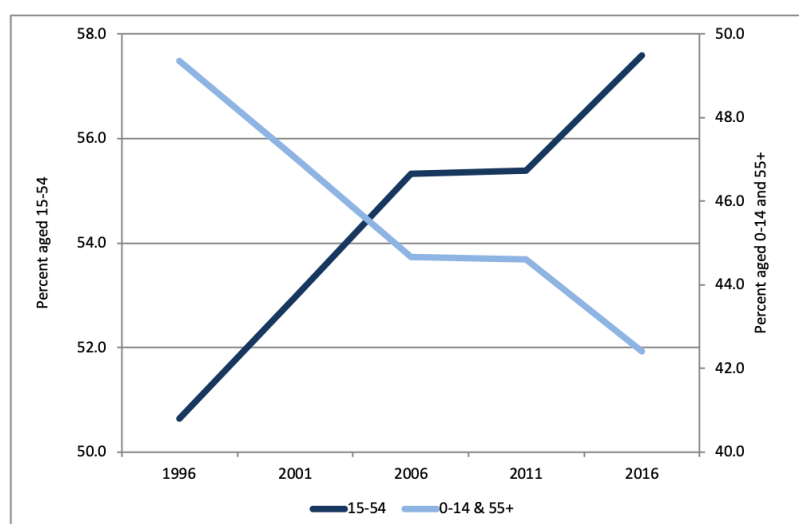
Source: ABS 2003, 2018a

The stark observation is that the size of the infant, school-age and young adult populations all decreased since 2001 while numbers at prime working age and at old age increased. As we have seen, this partly reflects the impact of migration to and from

the East Kimberley which resulted in net losses in young age groups over each census period. The other feature, of course, is the large proportional increase in the population aged over 55 years which a burgeoning working-age group can only serve to further augment over time, unless there is a rise in net out-migration among the elderly in future years.

This structural ‘ageing’ of the population has very strategic social and economic planning implications for the region since it signals the presence of potential ‘demographic dividend’. The notion of demographic dividend refers to that period in the middle of the transition of a population from being predominantly ‘young’ to being predominantly ‘old’, when the bulk of the population is to be found in the key workforce age groups between 15 and 54 years (usually 15-64 years but we use 15-54 here for reasons already explained). During this period, employment, earnings and investment levels are potentially maximised and economic dependency ratios are potentially minimised. The term ‘potentially’ is critical here since these outcomes do not occur of their own accord—they require deliberate foresight, strategic planning and investment. Australia as a whole has exited this phase of transition having commenced its progression in the 1960s with positive economic impacts due to high rates of education and labour force participation that accompanied the bulge in working-age population (Jackson and Felmingham 2004). While calculations of demographic dividend are typically applied at national levels and for whole populations, the logic can still apply at the regional level and for sub-populations. Consequently, a key measure to establish is the trend in the working-age proportion of the East Kimberley Aboriginal population. This is shown in Figure 2.7 since 1991 with the corresponding proportion in the dependent ages of 0-14 and 55+ included on a secondary axis for comparative purposes.

Figure 2.7 Demographic dividend: proportions of Aboriginal population in working-age and dependent age groups in the East Kimberley region, 1996-2016



Source: ABS 2003, 2018a

With 20 years-worth of data to hand, we can now see that the Aboriginal population of the East Kimberley has been moving into a phase of potential demographic dividend with the share of its population in the prime working-age group increasing steadily over much of this period and the corresponding share of population at dependent ages decreasing.

Whether or not policy-makers in Western Australia have been aware of this opportunity presented by Aboriginal demographic change is unclear. Certainly the issue has been tabled in the Indigenous policy literature (Jackson 2008, 2016; Biddle and Taylor 2012: 581-3) but the key government documents that examine the economic implications of demographic change (successive Federal Treasury *Intergenerational Reports*) have not even mentioned Aboriginal people, let alone related issues of demographic dividend, as they have been focused solely on impacts for the whole population and therefore more concerned with issues to do with funding retirement and aged care. That is not to say that efforts to maximise Aboriginal employment and workforce readiness have not been made. Rather, it is to point out that scrutiny of these efforts and their effectiveness becomes much more of an imperative and part of a business case for investment in human capital when framed within the notion of a demographic dividend.

Population projections

Of particular interest, then, is speculation about whether this trend in age distribution is likely to continue. Ultimately, expansion of the working-age group does have a ceiling, the pressing question is at what point in the future will that be reached? One way to inform such speculation is by using projections of the population. There are no formally accepted rules or procedures for demographic projection. Rather, there exists a large body of professional literature which is concerned with the computation of future populations and that collectively contains a set of guidelines that are generally accepted as representing good projection practice. Among these is the well-established principle that the accuracy of projections diminishes with time. It is also well established that projections for large populations are more reliable than those for small populations. Whatever the case, it should be borne in mind that projections only show how a population would change if the assumptions made regarding demographic parameters controlling its future growth were to eventuate over the projection period. Of course, this may or may not happen. To some degree, though, a search for accuracy misses the point. The real importance of projections is not so much their ability to accurately predict, it is rather that they focus the policy-mind on possible future scenarios and bring an empirical quantum to discussion of future needs.

The most rigorous and useful projections for these purposes are those that account for the effect of changes in population age structure and the manner in which these changes interact with other demographic processes. Accordingly, the cohort component method, as it is called, is the most commonly used form of population projection. It examines separately the three components of population change—mortality (survival), fertility, and net migration. Rates for these components of change are applied to each cohort of a base population, resulting in a set of projections over a specified time period. The process is iterative over the projection period. This is the method used by the ABS in preparing its current round of official projections for the Aboriginal population of the East Kimberley to 2031 using the 2016 ERP as the base (ABS 2019). It should be noted that these are the only official such projections currently available.

Three sets (series) of projections are provided each based on differing assumptions about how the demographic parameters that govern population change will unfold over the projection period (Table 2.11). As indicated, the main differences between the projection series are variations in the rate of decline in Aboriginal women's fertility and the rate of increase in Aboriginal male paternity, and different rates of increase in life expectancy at birth. Interestingly, inter-regional migration rates are held constant

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which, as we have seen, has a marked age-specific demographic influence in the East Kimberley. Some comment on the fertility rates used is required as these are based on registered births to Aboriginal mothers in non-metropolitan Western Australia as a whole in 2017 (ABS 2019). This produces a Total Fertility Rate (TFR) of 2.35 which is slightly lower than the TFR of 2.48 for Aboriginal mothers in the East Kimberley over the period 2011-16 derived from the Western Australian perinatal collection. However, both collections produce similar age-specific rates and both register a trajectory of decline in TFRs over time based on marked reductions in teenage fertility.

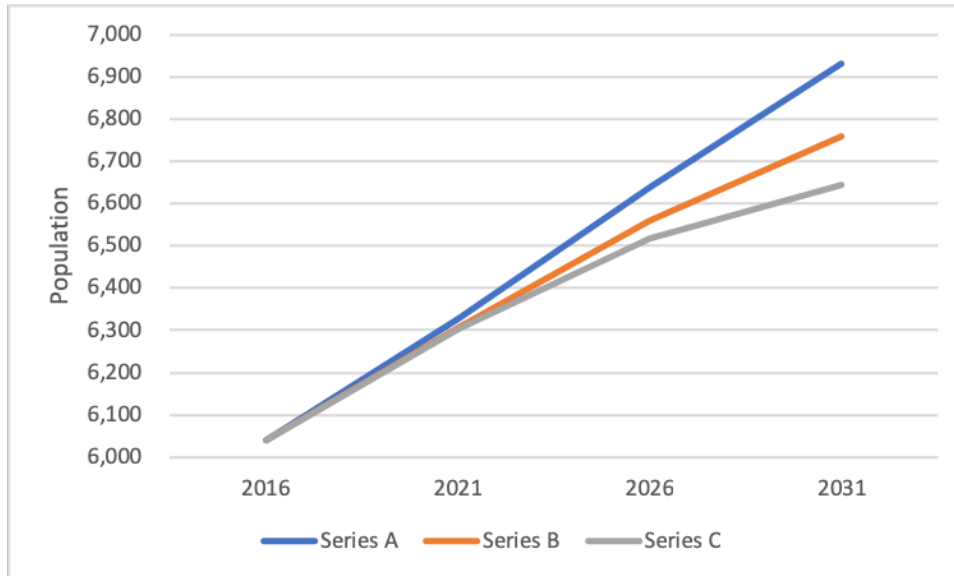
Table 2.11 Demographic assumptions used in ABS Indigenous Region population projections, 2016-2031

Projection Series	Demographic assumptions
Series A (High)	Constant fertility rates as observed in 2016, annual increase of 2% in paternity rates, Aboriginal and Torres Strait Islander life expectancy at birth increases by 0.45 years per year for males and 0.35 years per year for females, constant levels of inter-regional migration as observed in the 2016 Census, no overseas migration.
Series B (Medium)	Annual decrease of 1.0% in fertility rates, annual increase of 1% in paternity rates, Aboriginal and Torres Strait Islander life expectancy at birth increases by 0.40 years per year for males and 0.25 years per year for females, constant levels of inter-regional migration as observed in the 2016 Census, no overseas migration.
Series C (Low)	Annual decrease of 1.5% in fertility rates, annual constant paternity rates as observed in 2016, Aboriginal and Torres Strait Islander life expectancy at birth increases by 0.25 years per year for males and 0.20 years per year for females, constant levels of inter-regional migration as observed in the 2016 Census, no overseas migration.

Source: ABS 2019

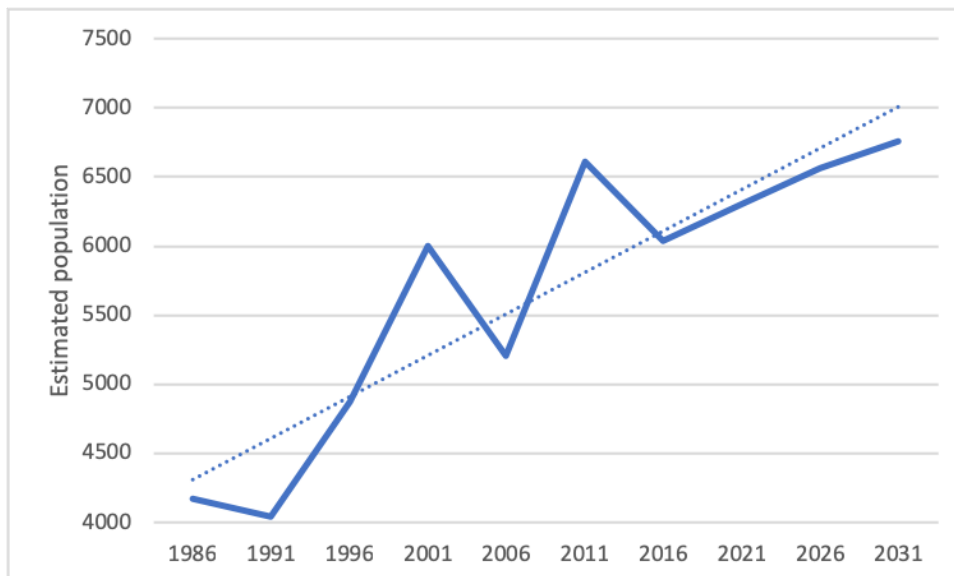
Based on these various assumptions Figure 2.8 shows the Aboriginal population totals for the East Kimberley region that arise at five-yearly intervals through to 2031. From a population base of 6,040 in 2016, the high series projection (Series A) shows this rising to 6,932 by 2031, the medium series (B) to 6,760 and the low series (C) to 6,643. These figures represent increases of 15%, 12% and 10% over the 15-year period respectively.

Figure 2.8 ABS Aboriginal population projection series: East Kimberley region, 1996-2016



Source: ABS 2019

Figure 2.9 Long-term Aboriginal population trend: East Kimberley region, 1986-2031



Source: Taylor 2003: 11; ABS 2019

Over the 45-year span of these estimates the average annual growth rate amounts to 1.08%. However, there appear to be two phases to this growth. The first is the period from 1986 to 2001 which experienced a fairly high annual growth rate of 2.45%; the second, projected period, from 2016 to 2031 where a much lower growth rate of 0.40% per annum is anticipated (using Series B projections). Tables 2.12 and 2.13 provide these same projections according to broad social policy age categories. Series A and C projections are presented in order to reveal the range of projected outcomes as a basis for contemplating the likely future size and age composition of the population according to these categories.

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Table 2.12 Series A (High) projections of Aboriginal resident population in the Kununurra Indigenous Region 2016-2031 by select policy age groups

Age group	2016	2031	Change (n)	Change (%)
0-4	665	726	61	9.1
5-14	1,247	1,131	-116	-9.3
15-24	1,100	869	-231	-21.0
25-54	2,379	3,019	640	26.9
55+	649	1,187	538	82.9
Total	6,040	6,932	892	14.8

Source ABS 2019.

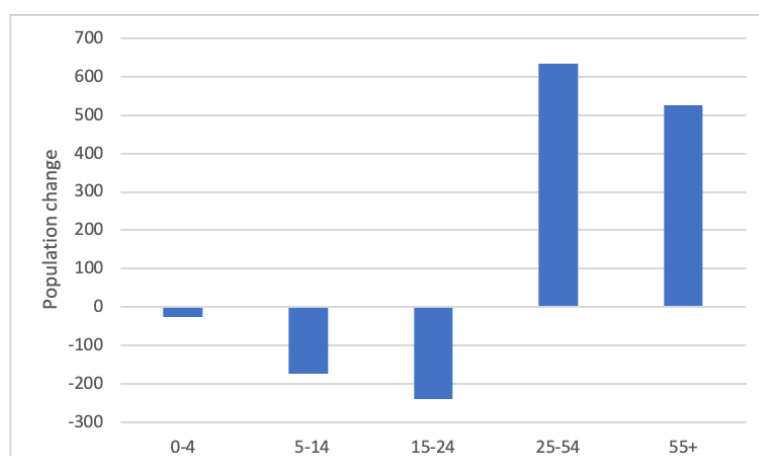
Table 2.13 Series C (Low) projections of Aboriginal resident population in the Kununurra Indigenous Region 2016-2031 by select policy age groups

Age group	2016	2031	Change (n)	Change (%)
0-4	665	592	-73	-10.9
5-14	1,247	1,034	-213	-17.0
15-24	1,100	857	-243	-22.1
25-54	2,379	2,993	614	25.8
55+	649	1,167	518	76.3
Total	6,040	6,643	603	10.0

Source ABS 2019

To help visualise these population shifts we can use the Series B (Medium) projections. Figure 2.10 shows the numeric change by age group and highlights the substantial increase in numbers in the prime working-age group from 5,200 to 8,000 while the aged population increases from 1,100 to 2,300. By contrast, infant and school-age numbers are fairly stable and the number of young adults falls from almost 2,000 to 1,600. Figure 2.11 converts these numbers to percentage change. Above all it illustrates the almost explosive growth in aged population, followed by those of working age, with growth at these ages standing in stark contrast to the limited change in younger segments of the population. Clearly, if these projections were to eventuate, we are looking at a profound shift towards a more aged Aboriginal population, regardless of which series is used. Numerically, the biggest increase will occur among those of prime working age (Figure 2.10) whereas the greatest proportional increase will occur among the aged population over 55 years (Figure 2.11).

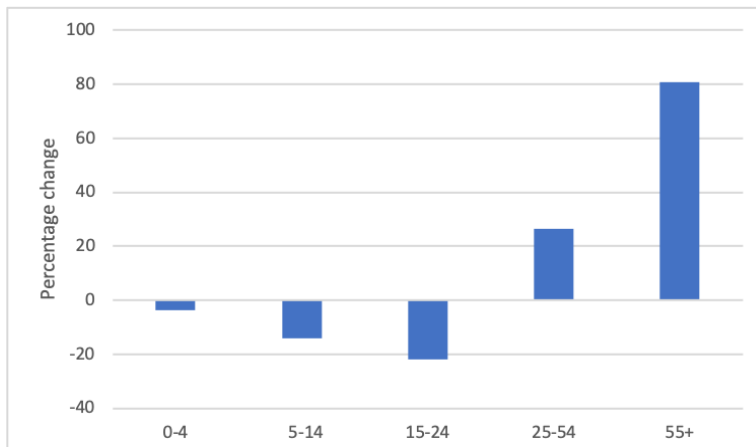
Figure 2.10 Numeric change in Series B projected Aboriginal population in the East Kimberley region 2016-2031 by select policy age groups



Source ABS 2019

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

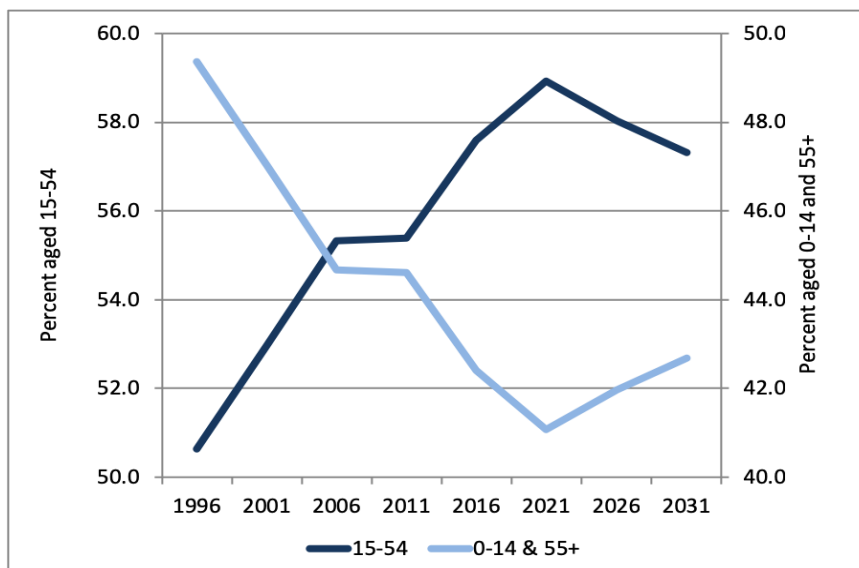
Figure 2.11 Percentage change in Series B projected Aboriginal population in the East Kimberley region 2016-2031 by select policy age groups



Source ABS 2019

We are now in a position to update the graph of age-dependency shown in Figure 2.7. This is presented as Figure 2.12. It shows emphatically that if the assumptions underlying the projection were to hold then a critical tipping point in terms of demographic dividend is imminent as dependent age groups (effectively the aged) rise again as the dominant share of population beyond 2021. All other things being equal, this would signal an end to the demographic phase of potential economic return. Having said that, it simply makes scrutiny of this ‘lost’ opportunity, and what may be retrieved from it, all the more urgent.

Figure 2.12 Demographic dividend: proportions of Aboriginal population in working-age and dependent age groups in the East Kimberley region, 1996-2031*



* Figures for 2021-2031 based on series B projections from ABS (2019)

It should be re-stated that these projections are not forecasts, as the latter imply some informed judgement about the likelihood of projected outcomes. The projections are simply the numeric outcome of applying algorithmic logic to a set of assumptions regarding the demographic variables affecting population change. A key contextual variable that is missing, therefore, is any reference to likely economic trends over the projection period. As with all remote regions, the East Kimberley is highly vulnerable to economic shocks and cycles and the imminent closure of mining operations at Argyle

is just the latest of these with expected deflationary effects on the regional economy especially in the Wyndham-East Kimberley LGA (Argyle Diamonds Ltd 2016, 2018). Obviously, the onset of the COVID-19 pandemic presents another. At the same time, no satisfactory model of Aboriginal demographic impacts is available and so it is not (yet) possible to factor an ‘Argyle or COVID-19 effect’ into the projections above. In the meantime, it is useful to point out that the assumptions used in the existing projections regarding known Aboriginal demographic trends at the time, such as long-term fertility decline and rising survival, are plausible given the trajectory of female education and workforce participation and ongoing investment in medical infrastructure and public health initiatives.

It is suggested, therefore, that serious consideration be given by regional stakeholders to the implications for social and economic futures in the East Kimberley that arise from these projections. On the one hand, reduced numbers at school age should make the task of funding quality education more achievable while longer-term pressure on demand for jobs should be eased somewhat. On the other hand, the immediate pressure on demand for jobs and housing will be substantial especially taking into account the existing low employment rate and shortage of public rental options. The real sleeper, however, is the rise in aged population and implications for health and disability care that this entails. One of the long-standing criticisms of policy in Aboriginal affairs is a sense that it is always playing catch-up—identifying issues long after they emerge then seeking to address them with inadequate resources once they become intractable. The projections provided here offer a way of circumventing this practice, but only if the response is immediate and substantial—in Aboriginal affairs, demography really is destiny!

3. Aboriginal participation in the regional labour market

A key finding from the original baseline report on Aboriginal socioeconomic outcomes in the East Kimberley was that the region had a substantial economic development challenge since around one half of its resident adult population, representing the majority of its Aboriginal population, remained overly dependent on welfare, structurally detached from the labour market, and ill-equipped to engage it (Taylor 2004). The conclusion was that ‘business as usual’ was insufficient to meet the needs of the regional population. It is fair to say that subsequent business has not been ‘as usual’—a number of major federal and state policy initiatives and financial injections have occurred, the regional economy itself has expanded and Aboriginal stakeholders have entered into various agreements tied to major projects aimed at achieving beneficial economic and social outcomes. Notable here have been the Argyle Agreement and the Ord Final Agreement. The expectation, therefore, is that Aboriginal labour force would show absolute and relative improvement, or at least clear signs that such improvements have been emerging, since the early 2000s.

Given the nature of the regional economy and its partial reliance on non-resident workers, we have to be clear about which workforce population is being referred to in any analysis. Aside from resident workers there are many who are in the region on a temporary basis. This latter group includes Fly-in/Fly-out (FIFO) workers with a residential base outside of the East Kimberley as well as others who acquire short-term contract work or who service the region intermittently from elsewhere. While such temporary workers experience high turnover, as a group they comprise an ever-present structural component of the regional labour market. Any discussion of workforce levels and composition must therefore, where appropriate, include such elements.

While this seems straightforward enough, accurate data on this mobile workforce is difficult to compile as it would ideally require the bringing together of disparate company and administrative records. As an alternative, census output since 2001 has included a ‘Place of Work’ variable which can be used to identify employed persons whose place of work on census night was different from their usual place of residence. In this sense they can be classified as temporary workers. Results from the 2016 Census show that in Halls Creek and Wyndham-East Kimberley LGAs the vast majority of Aboriginal workers (92% and 93% respectively) were also local residents of the wider East Kimberley region with very few from elsewhere, mostly the West Kimberley. By contrast, among the non-Aboriginal workforce, these proportions were noticeably lower (81% in Wyndham-East Kimberley and just 65% in Halls Creek) with many workers resident in places as far flung as Perth and interstate. However, as the purpose of the present analysis is to meet the information needs of local stakeholders, the main interest is in labour market outcomes for usual residents of the East Kimberley and this is what all subsequent labour force data refer to.

Regional labour force status: rates and levels

Tables 3.1 and 3.2 show the labour force status rates for Aboriginal residents of Halls Creek and Wyndham-East Kimberley LGAs at each census between 2001 and 2016. Rather than establish conventional rates of unemployment and labour force participation, customised measures are presented as proportions of the 15+ population for ease of interpretation. Thus, we have:

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- An employment to population ratio representing the percentage of persons aged 15 years and over who indicated in the census that they were in employment during the week prior to enumeration;
- An unemployment to population ratio indicating those who were not in employment but had actively looked for work during the four weeks prior to enumeration as a percentage of those aged 15 years and over;
- A labour force non-participation to population ratio representing persons who were neither employed or unemployed (ie. not in the labour force) as a percentage of those aged 15 years and over:

While these measures are strictly speaking percentage ratios of the adult population, from here on we shall use the term ‘rates’ as this is more colloquial and easier to grasp. Based on these rates, these tables also show estimates of the numbers of people employed, unemployed and not in the labour force in each census year since the raw census figures are invariably undercounts. To derive these estimates, the census-based rates in each year are applied to estimates of the Aboriginal adult population in each LGA (these are derived pro rata from ABS’ age-distributed ERPs for the adult population of the Kununurra Indigenous Region).

Table 3.1 Labour force status rates* and estimated levels for Aboriginal residents of Halls Creek LGA 2001-2016

	2001	2006	2011	2016
Census-based rates				
Employed	46.9 (7.6)	47.0 (12.3)	25.6 (16.8)	21.6
Unemployed	3.1	5.4	7.9	11.3
NILF	50.0	47.6	66.5	67.1
Estimated levels				
Employed	946 (153)	795 (199)	529 (347)	438
Unemployed	62	92	163	229
NILF	1,007	806	1,375	1,360

Source: Census rates from ABS Census of Population and Housing 2001, 2006, 2011 and 2016

**Excluding Labour Force Status not stated*

Employment rates and levels net of reported CDEP participation in 2001, 2006, and 2011 are shown in parentheses

Adult denominator populations based on ABS ERPs

NILF = Not in the Labour Force

Table 3.2 Labour force status rates* and estimated levels for Aboriginal residents of Wyndham-East Kimberley LGA 2001-2016

	2001	2006	2011	2016
Census-based rates				
Employed	48.1 (18.9)	51.0 (26.8)	39.2 (33.5)	32.1
Unemployed	4.9	2.5	7.8	11.3
NILF	47.0	46.5	52.9	56.9
Estimated levels				
Employed	797 (313)	833 (437)	862 (735)	675
Unemployed	81	40	171	237
NILF	779	760	1,163	1,195

Source: Census rates from ABS Census of Population and Housing 2001, 2006, 2011 and 2016

**Excluding Labour Force Status not stated*

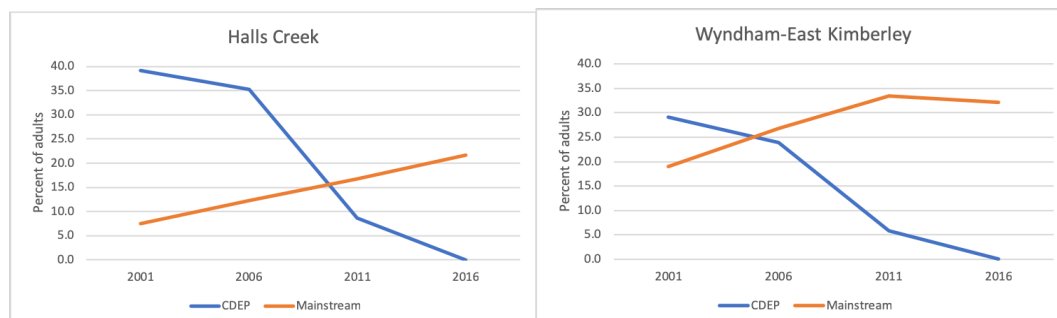
Employment rates and levels net of CDEP participation in 2001, 2006, and 2011 are shown in parentheses

Adult denominator populations based on ABS ERPs

NILF = Not in the Labour Force

The key trend in each LGA is a precipitous fall in employment rates and a corresponding increase in levels of unemployment and non-participation in the labour force, at least according to how the census defines such outcomes. This latter point is crucial because CDEP participants in the 2001, 2006 and 2011 census counts were classified by the ABS as employed. By the time of the 2016 Census, CDEP had been fully replaced by CDP and participants in this program were classified by the ABS as either unemployed or not in the labour force depending on their stated job search activities.¹ If we exclude CDEP participants from the three earlier census counts of employment we derive the rates shown in parentheses in each table. In other words, the figures in parentheses reveal a consistent time series for what has been mostly been referred to as ‘non-CDEP employment’ (Gray et al. 2013). Here we refer to this as ‘mainstream employment’ to reflect the nature of the regional labour market more generally. This produces a quite different trend whereby the rate of mainstream employment rose steadily from 8% in 2001 to 22% in Halls Creek LGA and from 19% to 32% in Wyndham-East Kimberley. The crossover over since 2001 from Aboriginal employment being predominantly in CDEP to being exclusively in mainstream work is shown for each LGA in Figure 3.1. This highlights the much steeper decline of CDEP employment in Halls Creek given the historic greater reliance there on the scheme. It also shows the lower but steady level of mainstream work replacement although this trend appears to have levelled out in Wyndham-East Kimberley.

Figure 3.1 Percent of Aboriginal adults in CDEP and mainstream employment: Halls Creek and Wyndham-East Kimberley LGAs, 2001-2016



Source: ABS Census of Population and Housing 2001 and 2016

Both males and females have shared in this adjusted employment growth with the mainstream rate for males increasing from 8% to 24% in Halls Creek and for females from 7% to 20%, while in Wyndham-East Kimberley the rate for males rose from 19% to 35% and for females from 18% to 29%. While the pace of these increases in the Aboriginal mainstream employment rate is substantial, they do, of course, start from very low bases and the overall levels remain massively behind non-Aboriginal employment rates which stand at 86% Halls Creek LGA and 84% in Wyndham-East Kimberley (Tables 3.3 and 3.4).

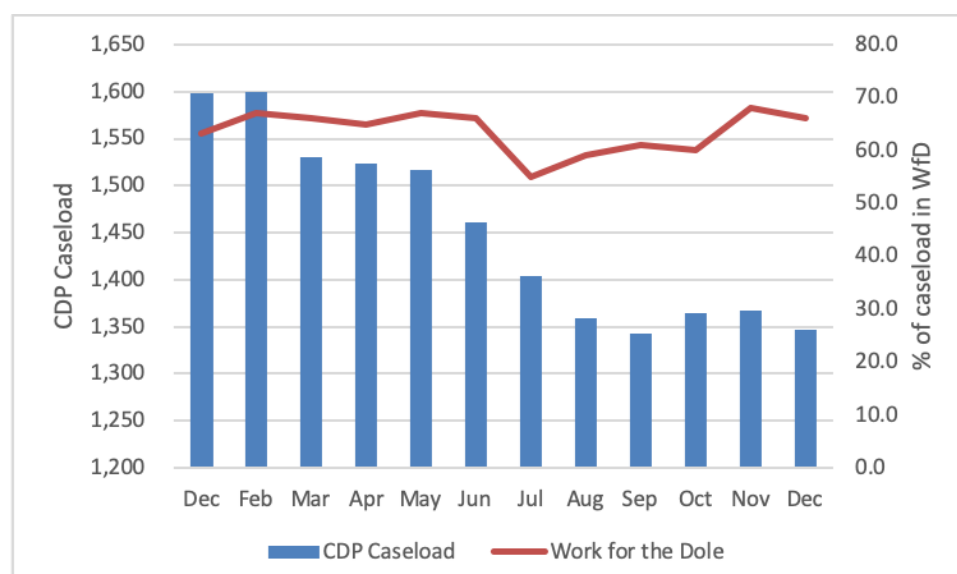
Of course, if CDEP participants are discounted as employed from earlier census counts then they must be assigned another labour force status, either unemployed or not in the

¹ At the 2016 Census, the special Interviewer Household Form that was used in many remote areas and Aboriginal communities included a response box for ‘CDP jobs’ but only so respondents could subsequently be classified as unemployed or not in the labour force unless they also reported having a ‘non-CDP job’. Because CDP participants receive income support payments they are not considered by the ABS to be in an employer/employee relationship with their provider. This includes participants in job placements.

labour force. However, there is no firm basis for choosing either of these options except for some notional link between CDEP and Newstart Allowance. Consequently, the rates and levels of unemployment and not in the labour force shown in Tables 3.1 and 3.2 are presented as reported by the census and are left unadjusted. However, the rise in both sets of rates across the board is no doubt related to the significant changes that occurred to CDEP, then the Remote Jobs and Communities Program (RJCP) and subsequently the Community Development Program (CDP) over this period—a process that shifted many Aboriginal adults either onto Newstart or to some other form of transfer payment outside of the labour force. Interestingly, the Census reported only 201 Aboriginal people as having ‘CDP jobs’ in the East Kimberley in 2016 a figure which is substantially short of the total of 1,359 Aboriginal CDP participants reported for August 2016 by the National Indigenous Australians Agency (NIAA). The main reason for this low census number is the very high non-response rate reported for this variable (75%). It should also be noted that the NIAA figure only refers to part of the East Kimberley region (albeit encompassing an estimated 82% of the Aboriginal population) because the geography of CDP administrative regions does not match ABS geography. Consequently, the most complete data we can obtain for the East Kimberley region refers to the CDP regions of East Kimberley and Halls Creek/Tjurabalan that exclude Kalumburu and localities in the north-west, as well as places to the west of Halls Creek including (surprisingly) Mardiwah Loop. The actual number of CDP participants for the East Kimberley will therefore be higher than 1,359—possibly around 1,600.

The number of Aboriginal CDP participants in the East Kimberley (as defined above) for each month of 2016 is shown in Figure 3.2. On average over that year there were as many as 1,451 participants each month. As indicated above, at the time of the census there were 1,359. Numbers fell towards the middle of the year but levelled out at around the census-date figure. In effect, CDP participation in the East Kimberley meant engaging in Work for the Dole (WfD) activities at least for around two-thirds of participants during 2016 (Figure 3.2). This is a significant level of WfD engagement because it means that the majority of CDP participants were subject to stricter requirements regarding mutual obligations under the Job Seeker Compliance Framework—in effect, they had more opportunities to fail and incur a penalty for non-compliance (Fowkes 2019:11). This issue will be explored later in relation to its possible impact on income status.

Figure 3.2 Monthly Aboriginal CDP caseload and percent of caseload in Work for the Dole activity: East Kimberley and Halls Creek/Tjurubalan CDP regions, 2016.



Source: NIAA, Canberra

A primary objective of CDP is to support participants in the acquisition and retention of mainstream employment. To this end, data are gathered by the NIAA on the number of job placements, while payments made to job providers on the completion of continuous employee placements for 13 and 26 week periods respectively provide for some measure of job retention. Data provided by the NIAA indicate that, on average, 21 individuals (1.4%) out of the average monthly CDP caseload of 1,451 in the combined East Kimberley and Halls Creek/Tjurubalan regions obtained employment during 2016 with total job placements for that year amounting to 251. Of this annual number, 121 (48%) were still in work after 13 weeks, 87 (35%) after 26 weeks, while 43 (17%) either left work before 13 weeks or were placed in work during the final quarter of 2016 leaving insufficient time to measure an outcome.

While these figures seem reasonably grounded, far less precision is available when attempting to account for the possible contribution of these placements to overall employment outcomes if we were to override ABS rules to include them among the count of those employed. For one thing, it cannot be established how many of the job placements reported above were actually in place during the week prior to the census on August 9th 2016. The CDP caseload is made up of a constant flow of individuals moving in and out of the program within the East Kimberley and their number and composition at any point in time (such as the week before the census) is ultimately unknown without detailed unit record matching. Having said that, it is tempting to point out that the census reported a figure of 201 Aboriginal people in CDP jobs in 2016 and this is close in magnitude to the number from the caseload figures above who are likely to have been in a job placement at that time (especially given that the two CDP regions reported above do not cover the entire East Kimberley region). If these figures are coincident, as seems plausible, and using the revised definition of employment to include those in CDP jobs, then this suggests that around 15% of total Aboriginal employment across the East Kimberley in 2016 could have been attributed to CDP job placements—a not insignificant proportion. Ultimately, though, what matters most is not the number of placements into work but the net effect of these taking into account those who also leave employment over a given period. As with many social indicators, this

negative side of the ledger is often not available in public statistics and that is also the case here, although the net effect is represented, of course, by the published employment numbers.

What we can say from these is that overall numbers employed based on official census rates have fallen since 2001 by as much as 54% in Halls Creek LGA and 15% in Wyndham-East Kimberley. If, however, only mainstream employment is considered, the number employed in Halls Creek is up by 186% and in Wyndham-East Kimberley by 116%, albeit from very low bases. As for numbers unemployed, it should be pointed out that there is a lack of correspondence between the 2016 estimated level of 466 for the two LGAs derived from the census rate and the number of Aboriginal East Kimberley residents registered with the Department of Social Services for Newstart and Youth Allowances which stood at 863 at the time of the 2016 census, to say nothing of the much higher figure of CDP participants mentioned above. While it is true to point out that these figures all refer to different populations derived from different administrative processes and definitions, the variations are nonetheless interesting given the growing administrative tendency to refer to almost anyone not in employment as a 'jobseeker'. One reason why the census unemployed figure is relatively low is because it refers to people who did not have a job but had actively looked for work in the previous four weeks. This is the official definition of a jobseeker. To that extent, it would seem that around two-thirds of those on CDP in August 2016 were not jobseekers in this official sense. In short, it is difficult to talk unambiguously about 'the unemployed' or 'jobseekers', especially in the Aboriginal policy context, because it depends entirely on how this category is defined and this is contextual and therefore variable.

If, for example, we use 2016 DSS data on Newstart and Youth Allowance recipients to define Aboriginal people as unemployed then an estimated 30% of those aged 15 years and over would be classified in this way instead of the 11% rates shown in Tables 3.1 and 3.2. Obviously, non-participation rates would be reduced accordingly if this adjustment were applied. Having said that, it is clear that many of those classified as 'not in the labour force' are also in CDP and most of these would also be engaged in work for the dole activities and some even in job placements therefore further blurring the lines between administrative practice and census labour force categories.

There is far less equivocation for the rest of the East Kimberley population. Standing in stark contrast to the experience of Aboriginal people, the employment rate for non-Aboriginal residents has remained more or less steady over the 15-year period in each LGA at between 82 and 86% with very few unemployed or not in the labour force (Tables 3.3 and 3.4). In fact, employment constitutes the primary reason for most non-Aboriginal people to be resident in the region in the first place. Accordingly, the non-Aboriginal unemployment rate has remained very low and so has the proportion of adults who are not in the labour force. Thus, despite evident gains in Aboriginal mainstream employment, the gap in employment rates between Aboriginal and non-Aboriginal residents remains very substantial with the Aboriginal rate at one-quarter of the non-Aboriginal level in Halls Creek and just over one-third of the level in Wyndham-East Kimberley (Tables 3.5 and 3.6). Similar large discrepancies in labour force status are also evident and persistent among those unemployed or not in the labour force.

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Table 3.3 Labour force status rates for non-Aboriginal residents of Halls Creek LGA: 2001-2016.

	2001	2006	2011	2016
Employment	82.8	85.0	87.9	85.9
Unemployment	0.6	1.6	1.4	1.9
NILF	16.6	13.4	10.7	12.2

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

NILF = Not in the Labour Force

Table 3.4 Labour force status rates for non-Aboriginal residents of Wyndham-East Kimberley LGA: 2001-2016.

	2001	2006	2011	2016
Employment	82.5	89.4	86.1	83.7
Unemployment	2.0	0.0	1.8	2.2
NILF	15.4	10.6	12.1	14.1

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

NILF = Not in the Labour Force

Table 3.5 Rate ratios of Aboriginal to non-Aboriginal labour force status rates: Halls Creek LGA, 2001-2016.

	2001	2006	2011	2016
Employment	0.57 (0.09)	0.55 (0.14)	0.29 (0.19)	0.25
Unemployment	5.2	2.5	5.6	5.9
NILF	3.0	3.5	6.2	5.5

NILF = Not in the Labour Force

Employment ratios net of CDEP in 2001 and 2006, and net of CDP in 2011 are shown in parentheses

Table 3.6 Rate ratios of Aboriginal to non-Aboriginal labour force status rates: Wyndham-East Kimberley LGA, 2001-2016.

	2001	2006	2011	2016
Employment	0.58 (0.22)	0.57 (0.31)	0.46 (0.39)	0.38
Unemployment	2.5	5.5	4.4	5.1
NILF	3.1	4.4	4.4	4.0

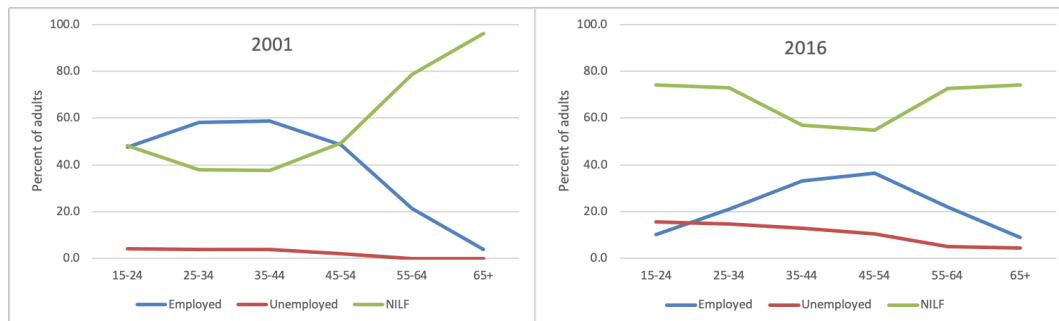
NILF = Not in the Labour Force

Employment ratios net of CDEP in 2001 and 2006, and net of CDP in 2011 are shown in parentheses

Aggregate labour force status rates based on the entire adult population can mask considerable variation by age. In Halls Creek LGA in 2001, for example, Aboriginal employment rates peaked in the age group 25-44, but beyond age 45 the tendency was for the majority of adults to be outside of the labour force (Figure 3.3). However, by 2016, a notable shift in this pattern had emerged whereby the majority of Aboriginal adults at all ages were not in the labour force and those unemployed exceeded those employed in the 15-24 age group with peak employment emerging later among those aged 45-54 years. Overall, the picture is one of reduced employment at all ages and a corresponding rise in unemployment or non-participation. Much the same pattern is evident in Wyndham-East Kimberley (Figure 3.4) although here while the employment collapse is less prominent while the rise in unemployment is more so.

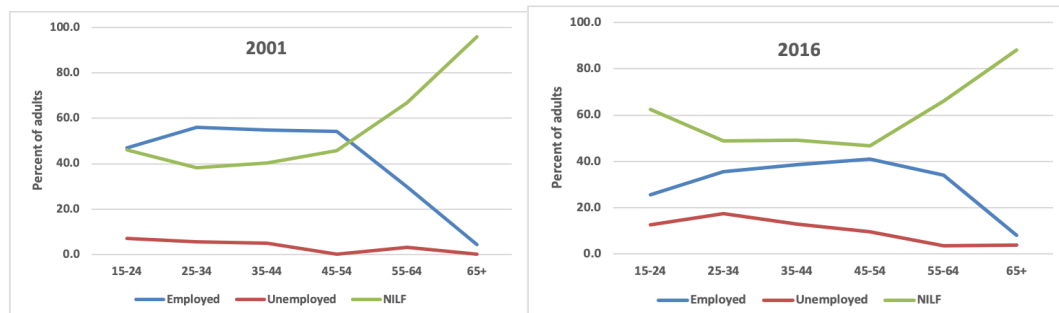
Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Figure 3.3 Aboriginal labour force status by age: Halls Creek LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016
NILF = Not in the Labour Force

Figure 3.4 Aboriginal labour force status by age: Wyndham-East Kimberley LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016
NILF = Not in the Labour Force

Of course, one reason why individuals may not be in the labour force is because they are engaged in education or training. The 2016 census output includes a new composite variable (EETP—Engagement in Employment, Education and Training) that provides a window into this. This item is created based on responses to census questions on age, full-time/part-time student status, labour force status and hours worked. It classifies individuals according to their degree of participation in work and/or study and it applies to all persons aged 15 years and over (ABS 2016a). Results for Aboriginal adults in each East Kimberley LGA are shown in Table 3.7.

Remarkably, at least according to census data, as much as 70% of Aboriginal adults in Halls Creek LGA are not engaged in any of these activities, and of the 30% who are, only 17% are fully engaged. The proportion not engaged in Wyndham-East Kimberley is lower but still high at 60% and only just over one-fifth are fully engaged. The fully engaged category includes persons who are active in either full-time work or study or who combine any hours of work with any hours of study. The partially engaged category includes persons who are either employed part-time or studying part-time. Examples would include persons who are employed part-time and not attending an educational institution, or those who are studying part-time and either unemployed or not in the labour force. In the data shown here this category includes persons who are engaged in either study or in the labour force but did not provide enough information to determine if they were fully or partially engaged. An example would be a person who was studying part-time but who did not state their labour Force status. The not engaged category includes persons who are unemployed or not in the labour force and who were not attending an educational institution.

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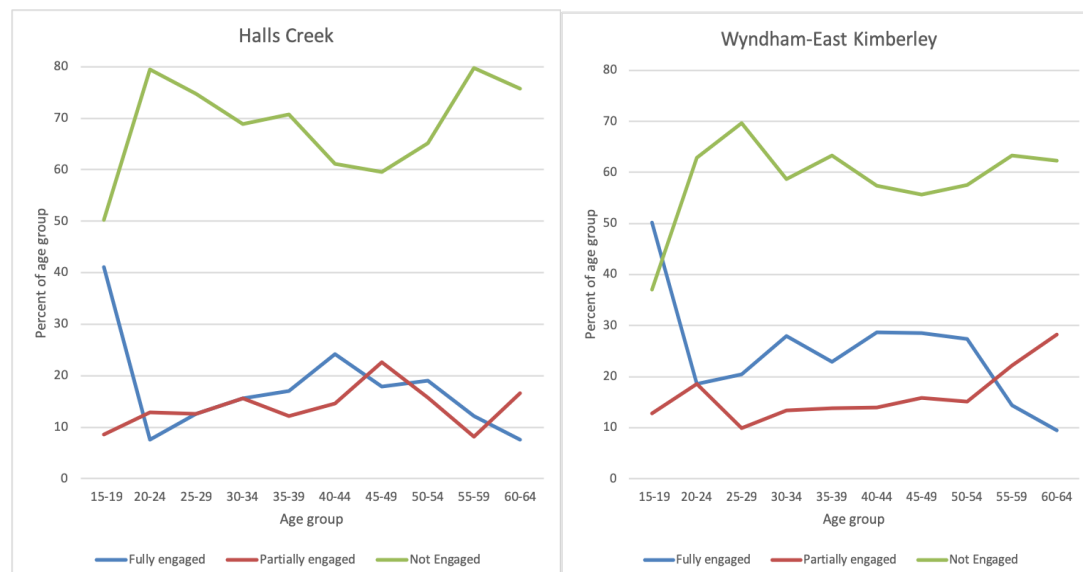
Table 3.7 Percentage of Aboriginal adults engaged in employment education and training: Halls Creek and Wyndham-East Kimberley LGAs, 2016

	Halls Creek	Wyndham-East Kimberley	Total Region
Fully engaged	17.1	25.8	21.7
Partially engaged	8.9	9.8	9.4
At least partially engaged	3.6	4.7	4.1
Not Engaged	70.3	59.8	64.7
All adults	100.0	100.0	100.0

Source: ABS Census of Population and Housing 2016

Of considerable interest, however, is an age breakdown since it is to be hoped that younger adults are more likely to be engaged in employment, education and training than older adults if improvements in labour force participation and employment are to continue into the future. Unfortunately, results by age group for Aboriginal adults in each East Kimberley LGA indicate the opposite to be true (Figure 3.5). Leaving aside those aged 15-19 years, many of whom are still in school, it is surprising to find that the highest rates of non-engagement occur among those aged less than 35-39 years with as much as 70-80% of these younger adults in Halls Creek not engaged in any activities, while in Wyndham-East Kimberley the range is from 60-70%. These are sizeable levels of non-participation in the very cohort that would be typically targeted to contribute to a demographic dividend.

Figure 3.5 Aboriginal engagement in Employment, Education and Training by age group: Halls Creek and Wyndham-East Kimberley LGAs, 2016



Source: ABS Census of Population and Housing 2016

Dependency ratios

Data on labour force status can be combined with age structure to produce a range of age and economic dependency ratios. These ratios provide a crude but effective summary of the numbers of working-age and economically-active members of a population relative to those who may largely depend on them for economic resources. These are shown in Table 3.8 for the Aboriginal resident population of the East Kimberley in 2001 and 2016. Equivalent figures are provided for non-Aboriginal residents in 2016 for the purpose of benchmarking regional conditions.

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The childhood dependency ratio is the simplest of these measures. It expresses the number of children in the population (aged 0–14 years) as a ratio of adults (15+ years). A ratio of 1.0 would indicate that the size of the two age groups is the same and that there is one child per adult. A figure greater than 1.0 indicates more than one child to each adult; less than 1.0 indicates fewer than one child to each adult. In 2001, the childhood dependency ratio was 0.64 and this fell to 0.46 by 2016 reflecting the relative decline in the number of children in the population due to demographic ageing as we have seen. By contrast, the childhood dependency ratio for non-Aboriginal East Kimberley residents at 0.19 is extremely low emphasizing the very different compositions of the regional sub-populations.

Table 3.8 Dependency ratios for the Aboriginal and non-Aboriginal resident populations of the East Kimberley region: 2001 and 2016

Ratio	Aboriginal		Non-Aboriginal
	2001	2016	2016
Childhood dependency	0.64	0.46	0.19
Childhood burden	1.34 (5.10)	1.72	0.22
Dependency ratio	2.18 (6.89)	2.81	0.38
Economic burden	2.44 (12.15)	4.43	0.40

*Source: ABS Census of Population and Housing 2001 and 2016
(ratios based on employment excluding CDEP in parenthesis)*

Of course, childhood dependency provides a very limited measure of economic dependency. More refined measures attempt to incorporate some indication of the ability of working-age adults to support others. The childhood burden, for example, is defined as the ratio of the number of children to the number of employed persons. Once again, a figure of 1.0 indicates parity. In 2001, there were 1.34 Aboriginal children to each person employed, including those employed in CDEP; by 2016 this had risen to 1.72. However, if we exclude CDEP employment from the 2001 calculation and focus solely on those in mainstream employment at that time, the childhood burden rises to a very high ratio of 5.1 in which case there has been a substantial decline over 15 years. Once again, however, this is far more children per employed person than shown by the non-Aboriginal ratio as the latter incorporates the already low non-Aboriginal childhood dependency ratio plus the fact that most non-Aboriginal resident adults are in the region for work. A further measure is provided by the dependency ratio which represents the ratio of children and economically inactive adults to adults in the labour force (those employed plus those unemployed). This produces an average of 2.8 Aboriginal dependents per economically active person in 2016 which represents a sizeable reduction in economic dependency since 2001 if we include CDEP in the base year but a slight rise if we don't.

Finally, the economic burden is a ratio of the number of children and economically inactive persons (including here those unemployed) to employed persons. This has declined since 2001 if we discount CDEP and it shows that for each employed Aboriginal person in 2016 there were 4.4 others who are not employed and who, notionally at least, may be part-dependent on each employed person for income. This remains a notably higher ratio of economic burden than that recorded for non-Aboriginal residents of the East Kimberley and it underlines the additional financial pressures on Aboriginal households in such a high cost region as the East Kimberley.

From a regional planning perspective, then, the age profile of the Aboriginal population remains a key variable when set against the relatively poor labour force status of

Aboriginal adults. Having said that, a clear reduction in economic burden is evident over the past 15 years but only if CDEP is discounted as employment. In 2001, the measure of economic burden was alleviated somewhat by substantial participation in the CDEP scheme. Without this in place at that time there would have been an average of 12 dependents to each person employed. Using this figure as the baseline, and recognising the subsequent demise of CDEP, we can say that the economic burden has been more than halved since 2001. This can be interpreted as a significant outcome in terms of demographic dividend as it can be argued that the relative expansion of working-age numbers combined with growth in mainstream employment had a positive economic effect. However, if employment numbers do not expand substantially, and if the population at older ages continues to increase in line with projections, then this burden is set to rise again.

Industry sector

Major transformation of the Aboriginal workforce in the East Kimberley has occurred since 2001 in the manner of its employment by industry sector. Simply put, there has been a structural reduction in dependence on government-sponsored employment and a concomitant rise in private sector employment. From a situation 15 years ago when employment was equally divided between government and private sectors, the private sector now accounts for over 80% of Aboriginal people in employment, an outcome that is shared with non-Aboriginal residents. This shift is shown in Tables 3.9 and 3.10. The reason for this statistical shift is a simple matter of census reclassification. In 2001, the census industry sector variable included a coding for CDEP workers. In the 2006 census, this was deleted and presumably (because it is ultimately not known) those coded as employed in CDEP in 2001 disappeared into the census classification for private sector employment in 2006 and 2011 (even though they were still funded by government) and by 2016 they were no longer classified as employed. This should be considered when interpreting Tables 3.9 and 3.10 since government sector employment in all three categories has fallen away steadily since 2001 in direct proportion to the rapid rise in private sector employment. This fall in government employment has been most evident in the State and local government sectors.

Table 3.9 Percentage distribution of Aboriginal employment by industry sector: Halls Creek LGA, 2001-2016

Industry Sector	2001	2006	2011	2016
Federal government	0.4	0.8	2.2	5.3
State government	4.3	3.3	13.5	8.6
Local government	2.3	34.0	3.8	3.0
Private sector	8.2	61.9	80.5	83.1
CDEP(b)	84.8	n.c.	n.c.	n.a.
Total employed	100.0	100.0	100.0	100.0

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

Table 3.10 Percentage distribution of Aboriginal employment by industry sector: Wyndham-East Kimberley LGA, 2001-2016

Industry Sector	2001	2006	2011	2016
Federal government	1.6	0.9	1.7	4.0
State government	10.4	7.3	15.2	13.0
Local government	0.5	21.4	2.4	1.1
Private sector	24.0	70.4	80.6	81.9
CDEP(b)	63.5	n.c.	n.c.	n.a.
Total employed	100.0	100.0	100.0	100.0

Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

n.c. = not classified as an industry sector

n.a. = not applicable

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As for the actual numbers employed in each sector, Tables 3.11 and 3.12 provides estimates based on the rates above and applied to estimated adult populations from the ABS for each census year between 2001 and 2016. These show the lack of change in State and local government employment since 2006 with the numbers shown in 2006 simply reflecting classification change out of CDEP. By contrast, there are now slightly more numbers in Federal government employment but pretty much all of the increase in employment since 2001 has been in the private sector with the estimated number increasing from 78 to 364 in Halls Creek and from 191 to 548 in Wyndham-East Kimberley.

Table 3.11 Estimated levels* of Aboriginal employment by industry sector: Halls Creek LGA, 2001-2016

Industry Sector	2001	2006	2011	2016
Federal government	4	6	12	23
State government	41	26	71	38
Local government	22	270	20	13
Private sector	78	492	426	364
CDEP(b)	802	n.c.	n.c.	n.a.
Total employed	946	795	529	437

Source: Author's own calculations based on ABS Census of Population and Housing 2001 and 2016

*Based on LGA pro rata share of ABS 15+ ERP for Kununurra Indigenous Region

n.c. = not classified as an industry sector n.a. = not applicable

Table 3.12 Estimated levels* of Aboriginal employment by industry sector: Wyndham-East Kimberley LGA, 2001-2016

Industry Sector	2001	2006	2011	2016
Federal government	13	7	15	27
State government	83	61	131	87
Local government	4	178	21	7
Private sector	191	587	695	548
CDEP(b)	506	n.c.	n.c.	n.a.
Total employed	797	833	862	669

Source: ABS Census of Population and Housing 2001 and 2016

*Based on LGA pro rata share of ABS 15+ ERP for Kununurra Indigenous Region

n.c. = not classified as an industry sector n.a. = not applicable

A further point to note from these estimated figures is that the total for CDEP employment across the region in 2001 (1,308) is very close to the actual number engaged by the various CDEP schemes at the time (1,209) according to the *CDEP Manager* database administered by ATSIC at the time. At the time of the 2006 census, CDEP was no longer included as a sector in the ABS's industry sector classification but a total of 1,179 participants were still registered on the database that was then administered by the Commonwealth Department of Employment and Workplace Relations. Clearly, in the census data for both LGAs, some of these participants had been reclassified as either private sector or Local Government employees while others are likely to have been reclassified as either unemployed or not in the labour force depending on the particular changes to CDEP policy that were emerging at the time. By the time of the 2011 census, the CDEP scheme was subject to a major overhaul with participants 'grandfathered' into the new RJCP leading to a wholesale administrative shift in their labour status from 'employed' to 'unemployed' or 'not in the labour force'. This remained the situation for the newly-designated CDP participants at the time of the 2016 Census.

Aboriginal sector

This census classification of employment by industry sector into three categories of government employment and the private sector masks a likely important component of the Aboriginal labour market in the East Kimberley (and elsewhere). This refers to jobs created by Aboriginal incorporated organisations and Aboriginal-owned businesses. While a plethora of such institutions exist, and while they no doubt employ many Aboriginal people, precise knowledge of their economic impact is not known since they are not identified in official statistical collections such as the census. Aside from masking the scale and range of associated economic activity, a further reason why this is an unfortunate omission is because such bodies provide a cultural labour market niche for many Aboriginal workers and they invariably apply affirmative action employment and training policies. They also often emerge out of mining and other agreement-making processes and so their contribution to regional economic outcomes constitutes one element in assessing the efficacy of those arrangements that is difficult to verify.

Currently, as many as 95 East Kimberley-based organisations are registered with the Commonwealth Office of the Registrar of Indigenous Corporations (ORIC) alone. Also, a total of 47 East Kimberley-based private sector companies are listed in the Aboriginal Business Directory of Western Australia ranging from large to small. It should be noted that a number of Aboriginal organisations also run businesses often as not-for-profit enterprises but also as major commercial operators as in the case of Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang Aboriginal Corporation and Gelganyem Inc.. Added to all of this, is a growing number of Aboriginal ranger programs and these are likely to expand further with renewed support for on-country land management activities from both Federal and State governments as well as private sector interests and NGOs. The full list of all of these entities is provided in Table 3.13.

Table 3.13 East Kimberley Aboriginal corporations, businesses, ranger programs and pastoral properties, 2019.

ORIC Registered

<i>Alligator Hole Aboriginal Corporation</i>	<i>Doon Doon Aboriginal Corporation</i>
<i>Balaburr Aboriginal Corporation</i>	<i>Duck Pond Aboriginal Corporation</i>
<i>Balangarra Aboriginal Corporation</i>	<i>Dulbung Nation Aboriginal Corporation</i>
<i>Balgarri Aboriginal Corporation</i>	<i>Dumbrall Aboriginal Corporation</i>
<i>Barangya Boongaray Aboriginal Corporation</i>	<i>Dunham River Aboriginal Corporation</i>
<i>Baulu-Wah Aboriginal Corporation</i>	<i>Flywell Aboriginal Corporation</i>
<i>Bell Springs Aboriginal Corporation</i>	<i>French Family Aboriginal Corporation</i>
<i>Bilbildjing Aboriginal Corporation</i>	<i>Galburring Aboriginal Corporation</i>
<i>Biljing Biljing (Red Creek) Aboriginal Corporation</i>	<i>Ganinyi Aboriginal Corporation</i>
<i>Bililuna Aboriginal Corporation</i>	<i>Gararang Aboriginal Corporation</i>
<i>Binarri-binyja yarrowoo Aboriginal Corporation</i>	<i>Gawooleng Yawoodeng Aboriginal Corporation</i>
<i>Bina-waji Nyurra-nga Aboriginal Corporation</i>	<i>Geboowama Aboriginal Corporation</i>
<i>Binjen Ningguwung Aboriginal Corporation</i>	<i>Giniyawarrni Yoowaniya Riwi Aboriginal Corporation</i>
<i>Binyanyi Aboriginal Corporation</i>	<i>Glen Hill Pastoral Aboriginal Corporation</i>
<i>Bow River Aboriginal Corporation</i>	<i>Goolgaradah Aboriginal Corporation</i>
<i>Bulgundi Aboriginal Corporation</i>	<i>Goonuny Aboriginal Corporation</i>
<i>Bulgunna Aboriginal Corporation</i>	<i>Guini-Bilarr Aboriginal Corporation</i>
<i>Darludarlul Aboriginal Corporation</i>	<i>Gulalluwa Aboriginal Corporation</i>
<i>Darwulah Group Aboriginal Corporation</i>	<i>Gulgagulganen Aboriginal Corporation</i>
<i>Dillon Springs Aboriginal Corporation</i>	<i>Halls Creek Aboriginal Corporation</i>
<i>Dilmeri Aboriginal Corporation</i>	<i>Halls Creek Healing Task Force Aboriginal Corporation</i>
<i>Dingo Springs Aboriginal Corporation</i>	<i>Illengirri Malangan Aboriginal Corporation</i>
<i>Doojum Aboriginal Corporation</i>	

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Jalagarnany Aboriginal Corporation
Janama Springs Aboriginal Corporation
Janterri Aboriginal Corporation
Janum Ningguwung Aboriginal Corporation
Jaycos Beach Aboriginal Corporation
Jdargie Aboriginal Corporation
Jiamiddie Aboriginal Corporation
Jungarni-Jutiya Aboriginal Corporation
Juwulinypany Community Aboriginal Corporation
Kalumburu Aboriginal Corporation
Kaniwal Nominees Aboriginal Corporation
Kapululangu Aboriginal Womens Association (Aboriginal Corporation)
Kartang Rija Aboriginal Corporation
Kimberley Language Resource Centre (Aboriginal Corporation)
King George River Aboriginal Corporation
Kirrangu Aboriginal Corporation
Koongie Elvira Aboriginal Corporation
Kundat Djaru Aboriginal Corporation
Kundat Djaru Community Housing Aboriginal Corporation
Kundat Djaru Community Store Aboriginal Corporation
Kununurra Region Economic Aboriginal Corporation
Kununurra Waringarri Aboriginal Corporation
Kurinyiam Aboriginal Corporation
Kururrungku Store Mindibungu Aboriginal Corporation
Lake Gregory Pastoral Aboriginal Corporation
Lakuwang Aboriginal Corporation
Ledawooloo Aboriginal Corporation
Lundja Aboriginal Corporation
Luridgii Cultural-Eco Tours Aboriginal Corporation
Manburrum Aboriginal Corporation
Mandangala Aboriginal Corporation
Maraltadj Aboriginal Corporation
Marnjal Aboriginal Corporation
Marralam Darrigaru Aboriginal Corporation
Marralgni (Granite Community) Indigenous Corporation
Milba Community Aboriginal Corporation
Mindibungu Aboriginal Corporation
Mirima Council Aboriginal Corporation
Miriuwung and Gajerrong #1 (Native Title Prescribed Body Corporate) Aboriginal Corporation
Miriuwung and Gajerrong #4 (Native Title Prescribed Body Corporate) Aboriginal Corporation
Miriuwung and Gajerrong Families Heritage and Land Council Aboriginal Corporation
Moowerrang Aboriginal Corporation
Mulan Aboriginal Corporation
Munthanmar Aboriginal Corporation
Neminwarlin (Pompeys Pillar) Aboriginal Corporation
Ngadgurun Aboriginal Corporation
Ngandjeriwin Aboriginal Corporation
Ngaringga Ngurra Aboriginal Corporation
Ngarhuyupi Aboriginal Corporation
Ngiling Anjaru Aboriginal Corporation
Ngnowar-Aerwah Aboriginal Corporation
Ngulwirriwirri Aboriginal Corporation
Ngunga Group Womens Aboriginal Corporation
Ngungali Aboriginal Corporation
Ngunjiwirri Aboriginal Corporation
Ngunulum Aboriginal Corporation
Nine Mile Aboriginal Corporation
Ngurra Kayanta Aboriginal Corporation
Ningbingi Ningguwung Aboriginal Corporation
Nulla Nulla Aboriginal Corporation
Nulleywah Aboriginal Corporation
Nyaliga Aboriginal Corporation
Nyawanyawam Dawang Aboriginal Corporation
Oombulgurri Lands Aboriginal Corporation
Ord Valley Aboriginal Health Service Aboriginal Corporation
Parna Ngururrpa Aboriginal Corporation
Puranyangu-Rangka Kerrem (Aboriginal Radio) Aboriginal Corporation
Purnululu Aboriginal Corporation
RB River Junction Aboriginal Corporation
Rapi Aboriginal Corporation RNTBC
Ribinyung Aboriginal Corporation
Ribinyung Dawang Aboriginal Corporation
Rugan Aboriginal Corporation
Skeen Family Group Linga Aboriginal Corporation
Speewah Valley Aboriginal Corporation
Thalngarr Ngarriny Aboriginal Corporation
Tharmindi Indigenous Corporation
Tjurabalan Native Title Land Aboriginal Corporation
United Indigenous and Aboriginal Corporation
Waina Family Aboriginal Corporation
Wandjal Toby Aboriginal Corporation
Wanjina-Wunggurr (Native Title) Aboriginal Corporation RNTBC
Waringarri Arts Aboriginal Corporation
Waringarri Media Aboriginal Corporation
Warlayirti Artists Aboriginal Corporation
Warmun Art Aboriginal Corporation
Warramingn Family Aboriginal Corporation
Warrayu Community Aboriginal Corporation
Warruyanta Indigenous Corporation
Wijilawarrim Aboriginal Corporation
Winganjie Blue Water Aboriginal Corporation
Wirrimanu Aboriginal Corporation
Wirrimanu Community Store Aboriginal Corporation
Wirrum Aboriginal Corporation

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Woolah Aboriginal Corporation
Woolerregerberleng Aboriginal Corporation
Worrworrung Ningguwung Aboriginal Corporation
Wuggubun Aboriginal Corporation
Wunambal Gaambera Aboriginal Corporation
Wurdagulli Goolingnae Indigenous Corporation
Wurreranginy Aboriginal Corporation
Wyndham Youth Aboriginal Corporation
Yanunijarra Aboriginal Corporation RNTBC
Yardgee Aboriginal Corporation
Yari Ranch Aboriginal Corporation

Aboriginal businesses

Australia Indigenous Consortium Pty Ltd
Birdwrangler
C & M Slingsby Pty Ltd
Bushcamp Enterprises Pty Ltd
Community Focus National Ltd
Cornerstone Resourcing
Cross Country Distributors Pty Ltd
D & H Contracting Pty Ltd
Dadaru Pty Ltd
Danny Calwyn Pty Ltd
East Kimberley Job Pathways Pty Ltd
East Kimberley Services Pty Ltd
Gija Australia Pty Ltd
Gooring Jimbila Contracting
Highways Traffic Kimberley Pty Ltd
iBase
IT Haulage
Kelly's Security Pty Ltd
Kimberley Jiyigas Birds
Kimberley Kool Refrigeration and Airconditioning Pty Ltd

Aboriginal Ranger Programs

Balangarra
Kija
Miriuwung Gajjerrong Yirrgeb Noong Aboriginal Corporation
Ngurrara
Paruku
Unguu

Aboriginal Pastoral Properties

Bililuna
Bohemia Downs
Bow River
Burks Park
Carranya
Carson River
Doon Doon
Durack River
Elvire

Yarliyil Art Centre Aboriginal Corporation
Yarrunga Aboriginal Corporation
Yawoorroong Miriuwung Gajjerrong Yirrgeb
Noong Dawang Aboriginal Corporation
Yirrabii Arts & Crafts Aboriginal Corporation
Yiyili Store Indigenous Corporation
Yumali Aboriginal Corporation
Yumannu Aboriginal Corporation
Yunggul Aboriginal Corporation
Yura Yungi Medical Service Aboriginal Corporation

Kununurra Plumbing and Gas Fitting Pty Ltd
Leslie Davey
Martin Sons Contracting
McGinty Family Trust
MDM Mining and Civil Pty Ltd
MGC Building and Maintenance Pty Ltd
Minjardahyo
North West Construction Services Pty Ltd
Robin Yeeda
S&G Contractor Services
Sampro Contracting Pty Ltd
Trevmec Enterprises
Troy's Truckwise
TST Electrical Pty Ltd
Warringarri Arts
Warmun Art
Wawuleny Enterprises Pty Ltd
Wunan Foundation Inc. Kimberley Business Support
Wunan Foundation Inc.
Zena's Civil Contracting Pty Ltd

Gibb River
Glen Hill
Home Valley
Karunje
Koonjie Park
Lake Gregory
Lambo
Louisa Downs
Mt Pierre

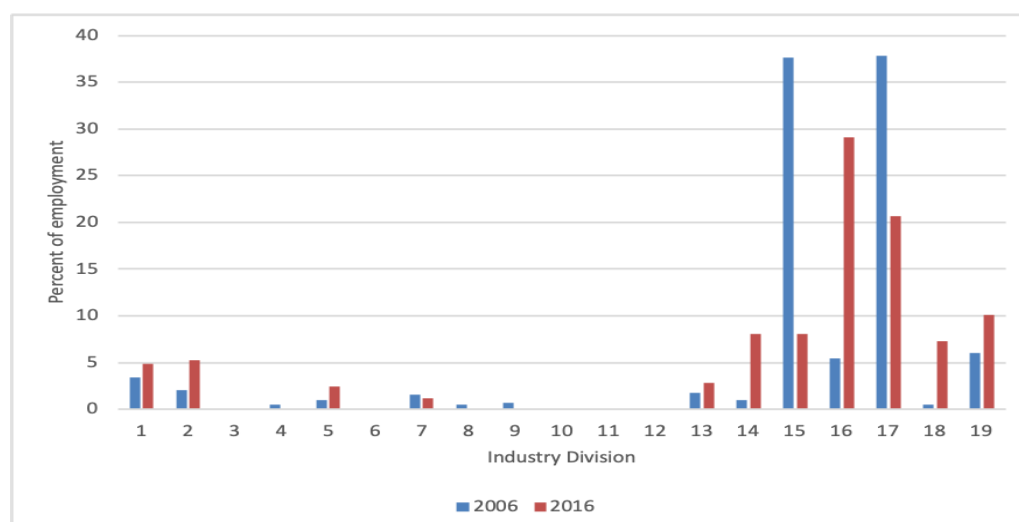
From the figures on industry sector provided in Tables 3.11 and 3.12 it is almost certain that Aboriginal employment in these organisations and enterprises would exceed that in the entire government sector as well as account for a reasonable slice of employment that is classified as private sector. The problem is, no consolidated source of data exists

with which to test this proposition nor to profile, analyse and monitor this uniquely Aboriginal contribution to the regional economy. Given the undoubted importance of this sector for strategic planning there is an urgent need to audit all Aboriginal businesses, organisations and ranger programs across the East Kimberley in order to make them more statistically visible and to establish their impact on Aboriginal employment and wellbeing. At the time of writing, this task was already underway with the development of a business survey instrument for distribution to all entities shown in Table 3.13 by the BBY Aboriginal Corporation. Aside from this sort of locally-initiated survey activity, there is a strong case to be made to the ABS for the creation of a separate ‘Aboriginal sector’ category in census statistics.

Employment by industry division

Establishing precise measures of change in employment between 2001 and 2016 across all of the divisional categories of the Australian and New Zealand Standard Industrial Classification (ANZSIC) is rendered problematic by the major revision to ANZSIC conducted in 2006 along with subsequent amendments. Nonetheless, sufficient stability is retained from 2006 onwards to allow clear conclusions to be drawn. When compared to the distributions in 2006 the change is striking, at least for those few industries where employment is concentrated (Figure 3.6). The sharp decline in employment in public administration and safety almost certainly reflects the withdrawal of CDEP. Less clear is the reason for a reduced share of employment in Halls Creek LGA in health care and social assistance. Most job growth in Halls Creek appears to have occurred in education and training as well as in administration and support services. While agriculture and mining also show increased employment shares these occur from a very low base. In Wyndham-East Kimberley (Figure 3.7), employment growth has been spread across a wider range of industries, most notably in health care and social assistance but also in education and training. As for mining, this has remained more or less constant at around 10% of employment.

Figure 3.6 Distribution of Aboriginal employment by industry division: Halls Creek LGA, 2006 and 2016



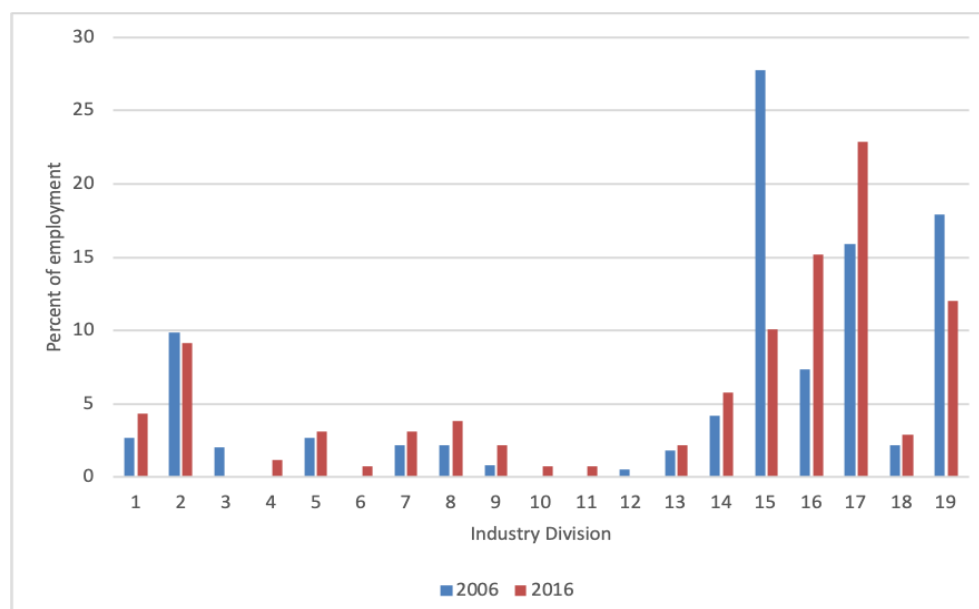
Source: ABS Census of Population and Housing 2016

Key: 1. Agriculture, Forestry and Fishing; 2. Mining; 3. Manufacturing; 4. Electricity, gas, water and waste; 5. Construction; 6. Wholesale Trade; 7. Retail Trade; 8. Accommodation and food services; 9. Transport postal and warehousing; 10. Information, media and telecommunications; 11. Financial and Insurance services; 12. Rental, Hiring and Real Estate Services; 13. Professional, Scientific and Technical Services; 14. Administrative and Support Services; 15. Public Administration and Safety; 16.

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Education and Training; 17. Health Care and Social Assistance. 18. Arts and Recreation Services; 19. Other Services

Figure 3.7 Distribution of Aboriginal employment by industry division: Wyndham-East Kimberley LGA, 2006 and 2016



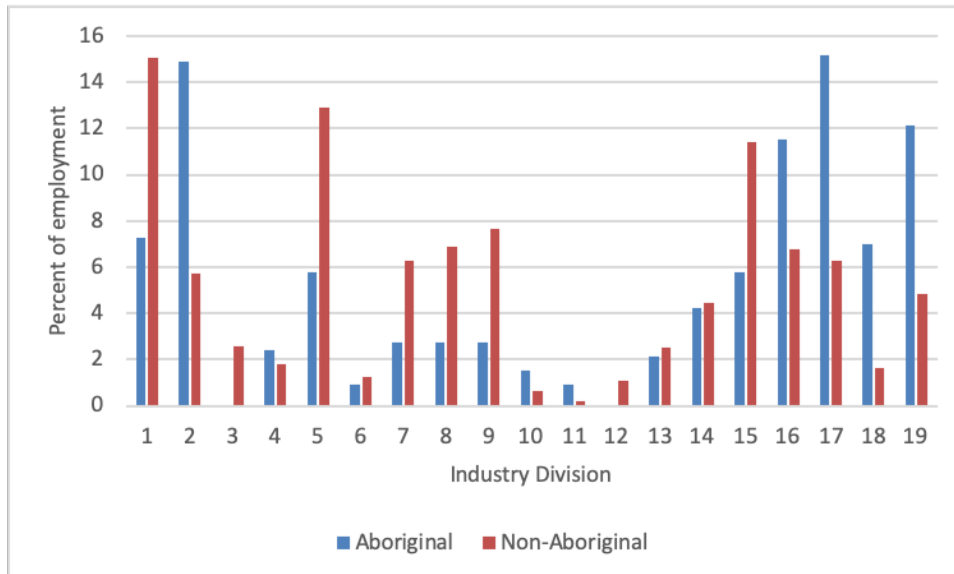
Source: ABS Census of Population and Housing 2006 and 2016

Key: 1. Agriculture, Forestry and Fishing; 2. Mining; 3. Manufacturing; 4. Electricity, gas, water and waste; 5. Construction; 6. Wholesale Trade; 7. Retail Trade; 8. Accommodation and food services; 9. Transport postal and warehousing; 10. Information, media and telecommunications; 11. Financial and Insurance services; 12. Rental, Hiring and Real Estate Services; 13. Professional, Scientific and Technical Services; 14. Administrative and Support Services; 15. Public Administration and Safety; 16. Education and Training; 17. Health Care and Social Assistance. 18. Arts and Recreation Services; 19. Other Services

The current distribution of Aboriginal employment by industry is compared to non-Aboriginal employment for males and then females for the East Kimberley region as a whole in Figures 3.8 and 3.9. Mining clearly stands out as being a prominent employer of Aboriginal males (around 15%), far more so than it does for resident non-Aboriginal males. This observation is significant in terms of the present report and its genesis since Argyle was the only operational mine in the region at the time of the 2016 census. Other prominent employers include education and training, health care and other services. The non-Aboriginal male workforce is spread more widely across the regional economy and features most prominently in agriculture, construction, retail, accommodation, transport and public administration. In effect, these are areas of the economy that Aboriginal males are relatively absent from. As for females in employment (Figure 3.8), the distributions by industry are broadly similar for Aboriginal and non-Aboriginal workers with a heavy focus on health and education followed by administration. Non-Aboriginal females, however, are more evident in retail and accommodation jobs as well in agriculture.

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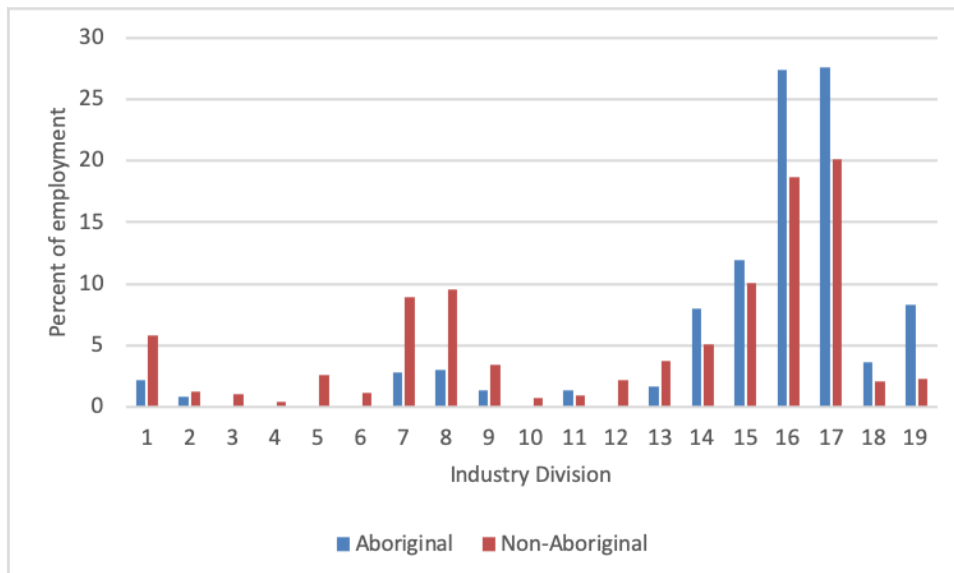
Figure 3.8 Distribution of Aboriginal and non-Aboriginal male employment by industry division: East Kimberley region, 2016



Source: ABS Census of Population and Housing 2016

Key: 1. Agriculture, Forestry and Fishing; 2. Mining; 3. Manufacturing; 4. Electricity, gas, water and waste; 5. Construction; 6. Wholesale Trade; 7. Retail Trade; 8. Accommodation and food services; 9. Transport postal and warehousing; 10. Information, media and telecommunications; 11. Financial and Insurance services; 12. Rental, Hiring and Real Estate Services; 13. Professional, Scientific and Technical Services; 14. Administrative and Support Services; 15. Public Administration and Safety; 16. Education and Training; 17. Health Care and Social Assistance. 18. Arts and Recreation Services; 19. Other Services

Figure 3.9 Distribution of Aboriginal and non-Aboriginal female employment by industry division: East Kimberley region, 2016



Source: ABS Census of Population and Housing 2016

Key: 1. Agriculture, Forestry and Fishing; 2. Mining; 3. Manufacturing; 4. Electricity, gas, water and waste; 5. Construction; 6. Wholesale Trade; 7. Retail Trade; 8. Accommodation and food services; 9. Transport postal and warehousing; 10. Information, media and telecommunications; 11. Financial and Insurance services; 12. Rental, Hiring and Real Estate Services; 13. Professional, Scientific and Technical Services; 14. Administrative and Support Services; 15. Public Administration and Safety; 16. Education and Training; 17. Health Care and Social Assistance. 18. Arts and Recreation Services; 19. Other Services

Obviously, the prospect that Aboriginal and non-Aboriginal workers would be distributed in equal proportion across each of the industry categories is minimal and some variation is to be expected. Precise difference in these employment profiles can be calculated using an index of dissimilarity.² In short, if the Aboriginal male workforce was to have participated in 2016 in the industry mix of the regional labour market in the same fashion as local non-Aboriginal male workers then, according to the index of dissimilarity, one third of them (36%) would have needed to change their industry of employment (Table 3.14). This compares to 34% in 2006 and it signals little change in what amounts to moderate labour market segregation. Other calculations of this index show a notable reduction in female labour market segregation down from 42.4 to 28.9 while the difference between Aboriginal males and females in terms of their industries of employment has widened. The key structural difference now appears to be less between Aboriginal and non-Aboriginal workers but increasingly between Aboriginal male and female workers.

Table 3.14 Indices of Dissimilarity for industry divisions: East Kimberley region, 2006 and 2016

Comparison	2006	2016
Aboriginal males/non-Aboriginal males	34.1	36.1
Aboriginal females/non-Aboriginal females	42.4	28.9
Aboriginal males/Aboriginal females	21.2	38.8

Source: ABS Census of Population and Housing 2006 and 2016

Occupation

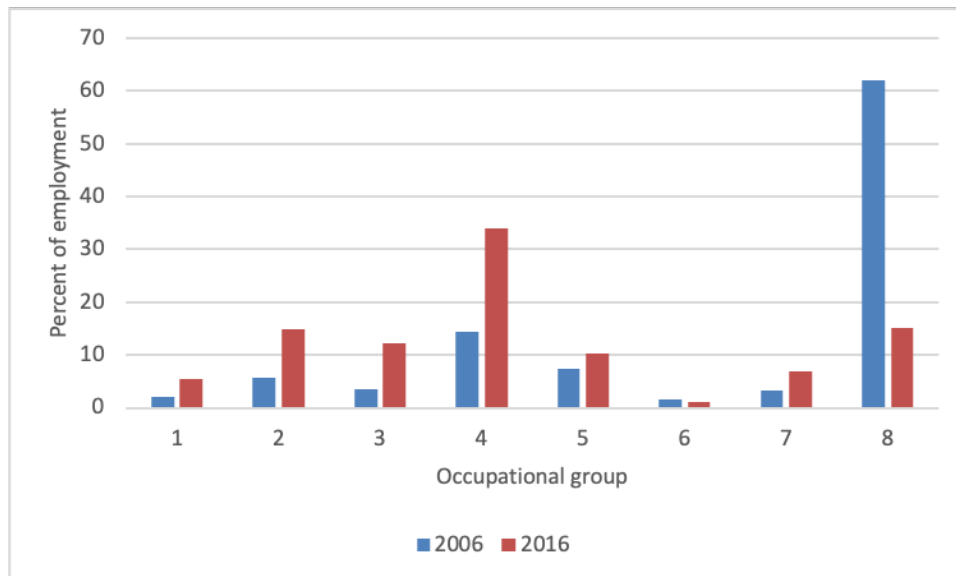
For the 2006 Census, the Australian and New Zealand Standard Classification of Occupations (ANZSCO) First Edition replaced the Australian Standard Classification of Occupations (ASCO) Second Edition (which was applied in the 2001 Census) with subsequent revisions before the 2011 and 2016 censuses. One major change was a shift from 9 occupational major groups to 8 major groups involving a reshuffling of occupations between groups as well as some re-labelling of group content. While concordances do exist, it is a complex and time-consuming process to match the 2001 Census output directly with that from 2016. Given the fairly undifferentiated nature of the East Kimberley labour market it is also probably unnecessary and so 2006 is once again used as the base year.

Figures 3.10 and 3.11 show the distribution of Aboriginal and non-Aboriginal workers respectively by major occupational group in each LGA in 2016. While there are some similarities with 2006 a good deal has also changed. The biggest change has been a large reduction in the over-representation of Aboriginal workers as labourers. In Halls Creek LGA, this category has fallen from over 60% of the workforce to less than 15%, and in Wyndham-East Kimberley it has gone from over 40% to just under 15%. A key reason for this, of course, is the demise of CDEP employment which was mostly classified under labourers, but it also reflects growth of employment in other, more skilled, occupational groups. For example, the proportion of Aboriginal people employed in professional, technical, trade and community service and personal service jobs has grown in both LGAs with increases also evident in managerial positions, albeit from a low base.

² The index ranges from zero (no difference in employment distribution) to 100 (complete difference)

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

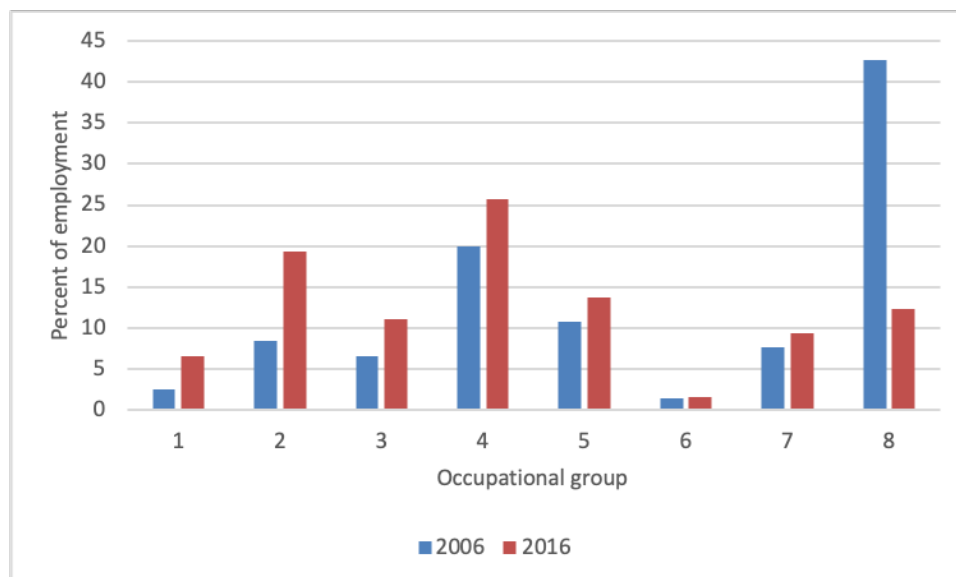
Figure 3.10 Distribution of Aboriginal employment by major occupational group: Halls Creek LGA, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016

Key: 1. Managers; 2. Professionals; 3. Technicians and Trades Workers; 4. Community and Personal Service Workers; 5. Clerical and Administrative Workers; 6. Sales Workers; 7. Machinery Operators and Drivers; 8. Labourers

Figure 3.11 Distribution of Aboriginal employment by major occupational group: Wyndham-East Kimberley LGA, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016

Key: 1. Managers; 2. Professionals; 3. Technicians and Trades Workers; 4. Community and Personal Service Workers; 5. Clerical and Administrative Workers; 6. Sales Workers; 7. Machinery Operators and Drivers; 8. Labourers

As with the industry data, these shifts in employment by occupation have led to a closing of the gap in occupational distribution between the Aboriginal and non-Aboriginal workforces. Table 3.15 shows that Aboriginal male workers are now much closer in overall occupational group distribution to their non-Aboriginal counterparts than they were in 2006. The main difference remains in the much higher proportion of non-Aboriginal males in managerial positions and a continued higher share of Aboriginal males in labouring jobs. A similar degree of convergence is evident between

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

females although non-Aboriginal females continue to concentrate more in managerial and professional positions as well as in sales jobs, whilst Aboriginal females are far more likely to be found in community and personal service work. Once again, the main structural break in terms of occupation is increasingly the one between Aboriginal males and females.

Table 3.15 Indices of Dissimilarity for occupational groups: East Kimberley region, 2006 and 2016.

Comparison	2006	2016
Aboriginal males/non-Aboriginal males	48.8	21.6
Aboriginal females/non-Aboriginal females	41.3	23.8
Aboriginal males/Aboriginal females	40.7	45.5

Source: Author's own calculations based on ABS Census of Population and Housing 2006 and 2016

The data in Figs. 3.6 through to 3.11 reveal only the broad outlines of the regional labour market. Each of these classifications can be disaggregated into more detailed descriptions of industry and occupation in a way that highlights the particular jobs that Aboriginal workers congregate in. For example, census output for the ANZSIC can be broken down into 721 individual industry classes, while the ANZSCO can be disaggregated to 478 occupational units. When examined at this level of detail the distribution of employment in the East Kimberley, for both Aboriginal and non-Aboriginal workers, emerges as even more concentrated into relatively few individual industries and occupations.

Table 3.16 shows the top 20 industry classes according to numbers employed listed in rank order for both sets of workers. As the data shown refer to census counts only they shouldn't be read as actual numbers employed. They are used here solely for purposes of revealing relative distribution in order to better understand the structure of regional employment participation. As a measure of employment concentration, these top 20 out of 721 industries in 2016 accounted for 71% of Aboriginal persons employed compared to virtually all of those employed in 2006 (98%) indicating a notable reduction in the previous concentration of employment in a few industries (largely because of CDEP).

Table 3.16 Rank order of top 20 industries of employment: Aboriginal and non-Aboriginal resident workers counted in the East Kimberley region, 2016

Aboriginal		Non-Aboriginal	
Other Interest Group Services nec	65	Hospitals (except Psychiatric Hospitals)	181
Other Social Assistance Services	48	Accommodation	148
Other Non-Metallic Mineral Mining and Quarrying	41	Secondary Education	125
Primary Education	30	Local Government Administration	103
Combined Primary and Secondary Education	25	Other Non-Metallic Mineral Mining and Quarrying	87
Adult, Community and Other Education nec	25	Beef Cattle Farming (Specialised)	83
Employment Placement and Recruitment Services	23	Combined Primary and Secondary Education	81
Central Government Administration	22	Primary Education	70
Creative Artists, Musicians, Writers and Performers	20	Supermarket and Grocery Stores	67
Beef Cattle Farming (Specialised)	18	State Government Administration	61
Social Assistance Services, nfd	18	Police Services	60
State Government Administration	14	Forestry	54

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Aboriginal		Non-Aboriginal	
General Practice Medical Services	14	Air and Space Transport	51
Other Allied Health Services	14	Site Preparation Services	41
Local Government Administration	13	Other Social Assistance Services	41
Secondary Education	13	Agriculture, nfd	40
Arts Education	13	Central Government Administration	39
Supermarket and Grocery Stores	12	Other Automotive Repair and Maintenance	39
Accommodation	12	Cafes and Restaurants	38
Hospitals (except Psychiatric Hospitals)	12	Electrical Services	35
Top 20 as % of workforce 2016	71.3	Top 20 as % of workforce 2016	48.4

Source: ABS Census of Population and Housing 2016

Shared categories in bold

Nec = not elsewhere classified, Nfd = not further defined

Categories marked in bold indicate those that are common to the Aboriginal and non-Aboriginal workforces; all others are unique to one list or the other. Thus, half of the top 20 employing industries are common to both Aboriginal and non-Aboriginal workers and, not surprisingly, many of these (such as non-metallic mining, primary education, and local government administration) are major regional employers. Thus, while Aboriginal workers tend to be concentrated in the leading regional industries, there are notable exceptions. For example, Aboriginal people are relatively absent from police services, automotive repair and cafes and restaurants. By contrast, they are more likely to be found in particular service industries such as social assistance services, employment placement and recruitment services and adult, community and other education services.

As for occupational categories (Table 3.17), once again the top 20 by number employed accounted for a large share of overall employment though with far less concentration than shown by industry classification (56% for Aboriginal workers and 36% for non-Aboriginal workers). Aboriginal workers also accessed many of the region's main occupations such as education aides, general clerks and truck drivers, but they were relatively absent from many others notably sales assistants, and more professional occupations such as registered nurses, and primary and secondary teachers.

Table 3.17 Rank order of top 20 occupations of employment: Aboriginal and non-Aboriginal resident workers counted in the East Kimberley region, 2016

Aboriginal		Non-Aboriginal	
Education Aides	69	Sales Assistants (General)	97
Welfare Support Workers	43	Registered Nurses	89
Environmental Scientists	23	Primary School Teachers	87
Child Carers	21	General Clerks	81
General Clerks	21	Retail Managers	72
Livestock Farm Workers	18	Welfare Support Workers	62
Receptionists	17	Secondary School Teachers	57
Drillers, Miners and Shot Firers	16	Crop Farmers	53
Indigenous Health Workers	15	Office Managers	50
Welfare, Recreation and Community Arts Workers	12	Police	49
Gardeners	12	Education Aides	47
Counsellors	11	Commercial Cleaners	45
Aged and Disabled Carers	10	Metal Fitters and Machinists	43
Labourers, nfd	10	Truck Drivers	43

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Aboriginal		Non-Aboriginal	
Technicians and Trades Workers, nfd	9	Motor Mechanics	42
Truck Drivers	9	Receptionists	42
Storepersons	9	Electricians	39
Building and Plumbing Labourers	9	Livestock Farm Workers	39
Kitchenhands	9	Air Transport Professionals	37
Human Resource Professionals	8	Bookkeepers	37
Top 20 as % of workforce 2016	56.1	Top 20 as % of workforce 2016	36.0

Source: ABS Census of Population and Housing 2016

Shared categories in bold

Nec = not elsewhere classified, Nfd = not further defined

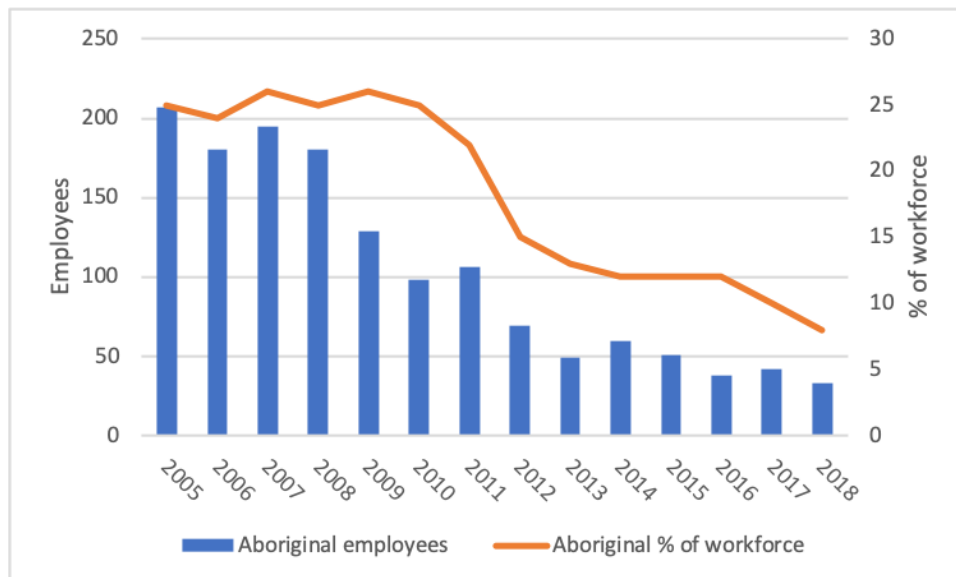
Mining employment

Clearly, census counts from the past few enumerations indicate that mining has been one of the leading industries of employment for Aboriginal workers in the East Kimberley, especially in Wyndham-East Kimberley LGA and especially for males. Given the genesis of the present report as a guide for the Argyle Traditional Owners Relationship Committee in considering the impact of the mine along with options for future economic and social development, it is of interest to assess the extent to which ADM has contributed to overall Aboriginal employment and training outcomes in the region. Of course, census data do not separately identify employment at ADM. For this purpose we need to use company data.

The number of Aboriginal workers engaged at the mine as at December of each year is recorded in Rio Tinto's annual series of Argyle Diamonds Sustainable Development Reports. Attempts by ADM to disaggregate these time series data according to gender, occupation, and proportion of Traditional Owners proved difficult owing to changes over time in company human resource databases. Nonetheless, what we have in Figure 3.12 is instructive. It shows three distinct phases of employment. First, a period of relatively high Aboriginal employment from 2005 to 2008 following the Argyle Participation Agreement. Second, a period of reduced overall employment coincident with the Global Financial Crisis (GFC) in 2008 and its flow-on effects on mine production. Finally, the period since 2012 where labour demand at the mine generally fell away again with the shift to more mechanised and higher skilled underground production. In line with these trends, the Aboriginal share of the mine workforce basically shifted from around 25% during the open pit operation to around 12% during the present underground phase.

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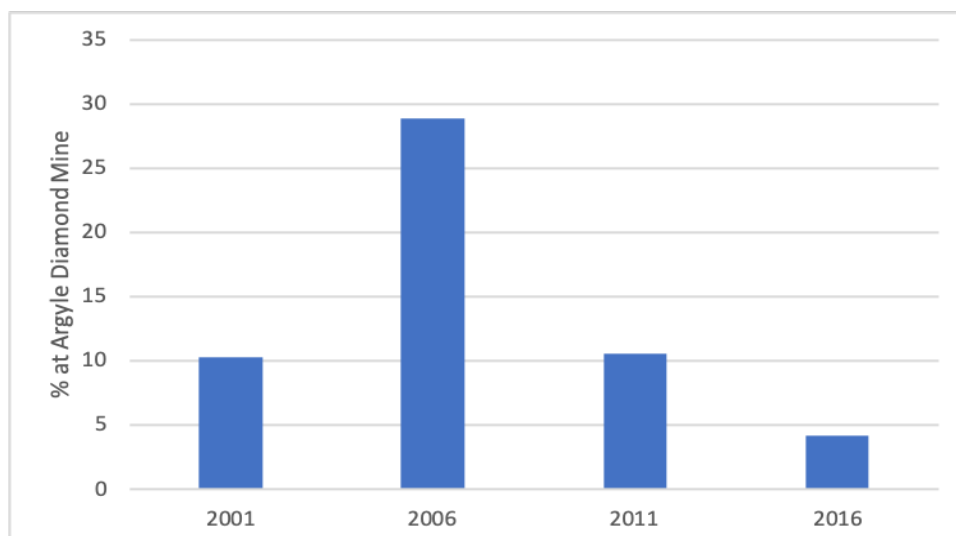
Figure 3.12 Aboriginal employment* at Argyle Diamond Mine, 2005-2018



Source: Rio Tinto Argyle Diamonds Annual Sustainable Development Reports
 *As at December of each year. Includes Apprentices and Trainees

To assess the direct impact of Argyle mine on regional Aboriginal employment outcomes, these ADM figures can be expressed as a percentage of Aboriginal mainstream employment at each census year (Figure 3.13). Here we can see that employment at the mine accounted for as much as 25% of Aboriginal mainstream employment during the years of open-cut operations following the Argyle Participation Agreement. Prior to this period it represented around 10% of the workforce (Taylor 2004: 34), and following the GFC and subsequent move to underground production it reverted back to this level. Further reduction in the Aboriginal (and overall) workforce has occurred as the mine approaches its closure phase. While Aboriginal people will continue to find employment in mine site rehabilitation for some years, the numbers involved and the impact on regional employment outcomes will remain low.

Figure 3.13 ADM direct contribution to regional Aboriginal employment*, 2001-2016



Source: Author's own calculations
 *excluding CDEP

Aside from these direct employee positions, ADM has also contributed to Aboriginal employment via preferential contracting of Aboriginal businesses or by stipulating Aboriginal labour quotas from other businesses who operate both on and off the mine site. Defining the precise cut-off between the mining industry and allied activities and who exactly is working for whom in the East Kimberley has always been very difficult and this has become even more so with the emergence of Aboriginal-owned businesses and joint ventures providing a variety of support and operational services to the mine. The point has already been made that this constitutes a sizeable but mostly unquantified Aboriginal sector of the regional economy and a separate study is required to establish its contours, content and impact.

A further means to enhancing Aboriginal employment has been through Rio Tinto's relationship over the years with Kimberley Group Training (KGT). Since 2006, Argyle mine has been used as an employer site for a total of 140 Aboriginal apprentices and trainees engaged by KGT. Of this total, 73 (52%) have been apprentices and 67 (48%) trainees. KGT records reveal that a total of 52 Traditional Owners were among those engaged and that 23 of these (44%) commenced an apprenticeship. In this way, ADM has provided fixed-term contracts for local Aboriginal people with a view to building potential employee capacity, skills and industry experience and an opportunity to transition to full-time employment. Part of the support under ADM's Work Ready program has been an onsite numeracy and literacy program, conducted in partnership with the Kimberley Training Institute. This has focussed on raising the numeracy and literacy skills of Aboriginal apprentices and trainees, as well as employees and contractors, so that they can complete the technical components of apprenticeships and other nationally accredited training programs. The program commenced in 2005 and by 2017 had graduated 137 individuals (Rio Tinto 2017).

The impact of such programs on employability more generally raises the issue of the indirect employment impact of Argyle mine. While quantifying this impact is beyond the scope of the present exercise there seems no doubt that by providing education, training, employment experience and business development opportunities, as well by the establishing financial trusts for Traditional Owners (the Gelganyem and Kilkayi Trusts) the presence of the mine is likely to have assisted Aboriginal participation in the wider regional labour market and beyond. The only study to have focussed on this particular impact (CSRM 2007) found that 80% of respondents to a survey of former Aboriginal workers at Argyle thought that the skills and experience they acquired at Argyle helped them to find other work and that 93% were gainfully employed elsewhere. As for econometric estimates of impact, these have only been developed for the total regional population as part of a social and economic impact assessment of mine closure (GDH 2016). While only 34 full-time equivalent indirect jobs are estimated to be lost, these are concentrated in Wyndham-East Kimberley and the economic impact in terms of foregone high wages is determined to be the greater loss.

Future employment needs

Over the past 15 years, then, Argyle Diamond Mine has clearly made a significant contribution to overall employment outcomes for Aboriginal people in the East Kimberley. While scaled-down opportunities for employment will continue for some time beyond the cessation of mining operations, the transition to mine closure and subsequent site rehabilitation does draw attention to the task of employment replacement. This is an issue that has exercised the East Kimberley Aboriginal

leadership for some time and an expression of their aspirations and options is most clearly articulated by some in the East Kimberley Regional Development Plan developed by the Empowered Communities East Kimberley group. One priority in relation to employment, for example, is to reduce the number of jobless households in the region via the 100+ Jobs initiative. Underpinning such schemes, and others aimed at securing the wellbeing of Aboriginal people in the region, is a stated ambition of the Plan to achieve “no less than the opportunities and choices [that] other Australians expect for their children”. Given this aspiration, the question arises as to the scale of the task if this were to be achieved for employment—what would this imply in terms of job requirements over the medium-term?

The basic dynamics involved here include existing East Kimberley Aboriginal and total Australian employment rates along with some measure of the future size of the East Kimberley Aboriginal population of working-age (ie. potential job-seekers). We have already seen how these dynamics work over time since the size of the Aboriginal workforce in the East Kimberley (including CDEP) has declined since 2001, and while the trend is more positive if we exclude CDEP, improvement in the mainstream employment rate has stalled. This is because employment growth has struggled to keep pace with growth in the working-age population. One consequence is a continuing substantial gap in regional employment rates with three times the number of Aboriginal people required in employment in 2016 to achieve the same employment rate as non-Aboriginal residents. In the meantime, the Aboriginal population of working-age is projected to continue to grow and so the numbers required to reach parity in rates will also continue to expand over time. According to ABS Series B projections there will be an additional 920 Aboriginal residents in the East Kimberley over the age of 15 years by 2031 from a base in 2016 of 4,128 (ABS 2019). As is often noted in the context of Aboriginal development, there is a sense here of constant catch-up with no end in sight.

Admittedly, much of this growth in adult numbers will occur among those at older ages. On this basis we can argue that a more realistic working-age range for contemplating and setting targets for employment outcomes is likely to be the age group 25-54 rather than the whole adult population aged 15 years and over. What, then, is the scale of the challenge ahead if the Aboriginal population in this age range is to approach parity with the rest of the population in terms of employment outcomes? To answer this question, we can use the population projections against a set of differing expectations regarding employment rates.

Overall, using ABS Series B projections from 2016, the Aboriginal population of the East Kimberley aged 25-54 years is expected to rise from 2,379 to 3,013 by 2031 which means there could be around 634 additional people of prime working-age over the next 15 years. How many extra jobs will be required for this age group in order to achieve selected employment objectives? Increasing the rate at which people are in work is a key objective of the Empowered Communities Regional Development Agenda and while no specific targets are identified we can envisage two that are likely to be of interest. First of all, because of the projected increase in working-age population, how many more people will need to be in work by 2031 in order to ensure that the East Kimberley Aboriginal employment rate for those aged 25-54 years doesn't fall from its current (2016) level of 33%? Second, how many Aboriginal people in this age group will need to be in work by 2031 in order for the East Kimberley employment rate to match the equivalent national 2016 employment rate? The first target is focussed on not losing ground; the second is more aspirational to do with 'closing the gap'. In light of

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the sizeable gap involved in this second target we can add a further one that is the half-way point towards achieving the latter. Table 3.18 provides the answers.

As a rough guide, to avoid any slipping behind in the current regional Aboriginal employment rate for this age group, the minimum task would be to retain the 790 who are presently in work and then to add an additional 210 jobs over the next 15 years, or 14 extra jobs per annum. Every additional job beyond this base represents a step towards some form of parity. If the parity sought is with all Australians then a half-way point towards that objective by 2031 would require roughly a doubling in the size of the current Aboriginal workforce whilst full parity with all Australians would require a trebling. As to where these additional individuals might come from and what they might need in order to successfully secure employment, one might only look at the 1,000 or so students currently in or just out of the high school system and what their requirements might be for joining the workforce. Of additional interest would be the situation facing the substantial number of young adults who are either unemployed or unattached to the labour force and, as we have seen, not engaged in education or training. In effect, an urgent audit of capacity to engage is required of the younger Aboriginal age groups.

Table 3.18 Estimates of future Aboriginal employment requirements in the East Kimberley region to meet select employment rate outcomes by 2031

Select employment rates in 2016	Estimate of base Aboriginal employment in 2016*	Total jobs required for parity by 2031	Extra jobs required by 2031
33.2 ^a	790	1,000	210 (14)
54.2 ^b	790	1,633	843 (56)
75.1 ^c	790	2,263	1,473 (98)

* Estimate of Aboriginal employed aged 25-54 using ABS ERP and census rates

a. 2016 employment rate for Aboriginal East Kimberley residents aged 25-54

b. Half-way to 2016 rate for all Australians aged 25-54

c. All Australian 2016 rate aged 25-54

(Annual extra jobs required in parentheses)

4. Income status

Income data collected by the census refer to the total of all income (gross income) 'usually received'. Options are provided on the census form to interpret this as amounts 'per week' or 'per year'. Gross income is the sum of income received from all sources before any deductions such as income tax, Medicare levy or salary sacrificed amounts are extracted. In theory it is meant to include wages, salaries, business income, rents received, royalties, dividends, interest, income from superannuation, child support, worker's compensation and government pensions and allowances. In practice, there is a tendency for incomes to be understated in the census although the distribution of income for the population as a whole is largely consistent with that obtained from ABS income surveys (ABS 2016b: 201-2).

Accurate data on income levels, and employment and non-employment sources of income, are notoriously difficult to obtain due to a variety of conceptual ambiguities. For one thing, reference to 'usual income' over the two available time periods of annual or weekly assumes a consistent flow of income to individuals and households whereas this is often intermittent. What might constitute 'usual weekly' income in many Aboriginal households is difficult to determine to say nothing about the difficulty of constructing such households using census data (Morphy 2016: 109). On the credit side, there is the likelihood of intermittent employment and windfall gains from sources such as cash loans and royalty payments. This sort of income combines with debits for example, due to loss of employment or cessation of welfare payments to create a highly complex picture even over a short space of time and one that census methods of data gathering are not equipped to capture. Nonetheless, the census remains the only comprehensive source of income data that allows for separate measurement of personal and household Aboriginal income using a consistent methodology.

It should be noted that the census reports income in categories, with the highest category left open-ended. Consequently, actual incomes have to be derived. In estimating total and mean incomes, the mid-point for each income category is used on the assumption that individuals are evenly distributed around this mid-point. The open-ended highest category is problematic, but it is arbitrarily assumed that the average income received by individuals in this category is one-and-a-half times the lower limit of the category (Treadgold 1988) and this is applied here.

Income distribution

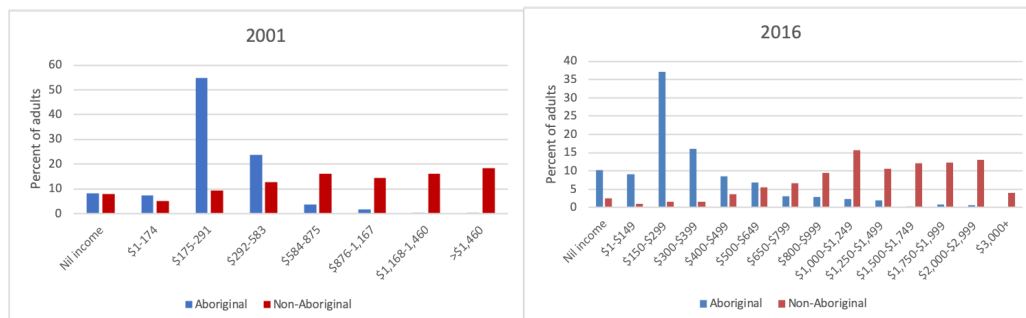
Analysis of personal and household income distributions for sub-populations provides a proxy means of measuring levels of disadvantage given that income is an essential material resource required for the acquisition of many socially-defined necessities (McLachlan et al. 2013). It is invariably a means of enhancing lifestyle choices. From this perspective, a lack of adequate income to maintain a socially-defined acceptable living standard is one means of indicating a state of relative poverty. Numerous measures exist for quantifying the extent of this condition but most of these are beyond the scope of the present report. Generally, though, they operate by benchmarking individuals and households against national minimum income standards. Here, we apply two sets of standards. First, in recognition of the fact that Aboriginal people who live in the East Kimberley are likely to compare their own circumstances with those of their co-residents and, in any case, they share the same local costs for goods and services (which are high), we compare income distributions within the region between

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Aboriginal and non-Aboriginal residents. Second, because measures of relative poverty are usually established against national income benchmarks and invariably refer to disposable equivalised income levels, we draw on relative poverty results already prepared by Markham and Biddle (2018) at the Indigenous Region-level.

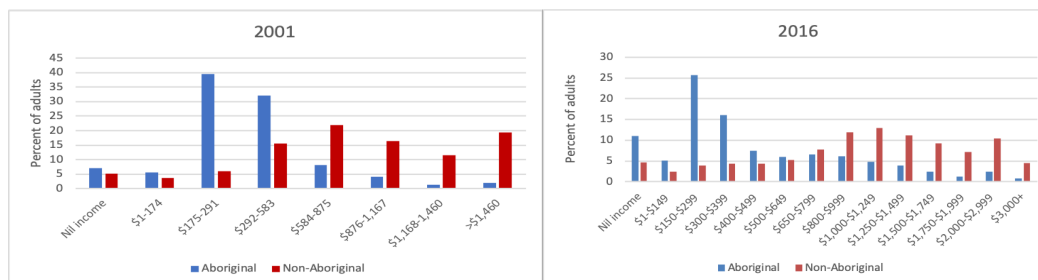
To begin, then, Figs. 4.1 and 4.2 show the distribution of personal weekly incomes in 2001 and 2016 for Aboriginal and non-Aboriginal residents of the Halls Creek and Wyndham-East Kimberley LGAs respectively. For comparison over time, the 2001 figures are adjusted for inflation and presented in 2016 dollars using the Reserve Bank of Australia (RBA) Inflation Calculator. Unfortunately, the 2016 census output includes more income categories than 2001 and so some visual reconciliation between the two sets of figures is required. In both years, and in both areas, there are two very different sets of outcomes with Aboriginal incomes clustered around the lower end of each distribution and non-Aboriginal incomes clustered around the high end. Aside from the relative stability over time in income distributions, one observation of interest is a rise in both LGAs in the proportion of Aboriginal adults with either no income or very low income.

Figure 4.1 Distribution of Aboriginal and non-Aboriginal weekly personal income (\$2016): Halls Creek LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016
 Note: 2001 figures expressed in \$2016 using the RBA inflation calculator

Figure 4.2 Distribution of Aboriginal and non-Aboriginal weekly personal income (\$2016): Wyndham-East Kimberley LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016
 Note: 2001 figures expressed in \$2016 using the RBA inflation calculator

One possible reason for this is the raising of compulsory school leaving age in Western Australia from 15 years to 17 years and 6 months that was enacted in 2008. However, more than two-thirds (68%) of those in Halls Creek LGA with no income in 2016 were neither employed nor in education or training. The equivalent figure for Wyndham-East Kimberley LGA was 58%. What is not clear is whether these individuals have dropped out of the income support system as well, which would seem to be implied. A further possibility that has been canvassed is that it reflects widespread breaching of CDP

mutual obligation compliance rules leading to substantial numbers of no pay penalties (Fowkes and Sanders 2016; Fowkes 2019). Some sense of the likely economic impacts of such breaching is provided by the range of evidence presented to a Senate committee investigating this matter shortly after the 2016 census (Commonwealth of Australia 2017).

As we have seen it has not been possible to obtain data on CDP participants for a region that precisely matches the East Kimberley. Nonetheless, in order to acquire some sense of the extent of compliance breaching in the region, and its possible impact on income status, data on CDP-related financial penalties for the East Kimberley (excluding Kalumburu and localities to the immediate west of Halls Creek) were obtained for the months leading up to the 2016 Census. These are shown in Table 4.1.

Before considering these data, it is worth reviewing the different types of participation payment suspensions and financial penalties that may be applied. Generally, financial penalties are calculated as 10% of the job seeker's payment—10% for each missed day of an activity or 10% for each working day until the job seeker attends a re-booked appointment. However, if three financial penalties are applied to a job seeker within 6 months, the individual is referred to a compulsory assessment of their circumstances known as a Comprehensive Compliance Assessment (CCA). The purpose of a CCA is to identify the underlying causes of repeated non-compliance, as well as any unidentified barriers to employment and alternative support services. If, however, it is determined that repeated failures reflect persistent noncompliance a serious failure may be imposed which triggers an eight-week period without income support. Also, if a job seeker fails to attend an appointment with their employment services provider, and this is reported, the job seeker's participation payment becomes immediately non-payable and their participation payment is suspended. Any payment due to the job seeker, but not yet paid, is withheld. Once jobseekers attend a further appointment with their provider their payment is restored from the date it was suspended, all other things being equal. The actual rules and processes surrounding these stages of decision-making are labyrinthine and highly contextualised and so precise links between raw data on reported suspensions and penalties and actual losses of income are unclear. Nonetheless, the former certainly flag the likelihood of loss of income even though no estimate of the amounts involved can be made from available data.

If we recall from Figure 3.2 that there were a total of 1,359 Aboriginal jobseekers at the time of the 2016 census, then the numbers of suspensions and financial penalties shown in Table 4.1 suggest that the majority of these were at risk of forfeiting at least some income at some time in the lead up to the census. Almost half (46%) were subject to a no show/no pay penalty and 21% were involved in a Comprehensive Compliance Assessment which can lead to a serious financial penalty involving loss of income for 8 weeks, although such instances appear to be relatively few. Non-attendance with an employment service provider and disengagement with a prescribed activity are clearly the two main reasons for suspensions again involving almost half of all jobseekers.

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Table 4.1 Aboriginal jobseeker participation payment suspensions and financial penalties: East Kimberley and Halls Creek/Tjurabalan CDP Regions, 2016a

	Events	Job Seekers
Suspensions		
Non Attendance Report (NAR)	807	615
Reconnection	<40	<40
Third Party	<40	<40
Activity	1,063	636
Total suspensions	1,892	1,002
Financial penalties		
No Show No Pay	2,461	631
Reconnection/PAR	<40	<40
Serious	<40	<40
CCA	399	280
UNPP	<40	<40
Total financial penalties	2,889	654

Source: NIAA, Canberra

a. Third quarter 2016

Median income

The overall lack of change in the shape of the income distributions shown in Figures 4.1 and 4.2, especially for Aboriginal adults, is reflected in median incomes shown in Table 4.2. For comparison over time, these are adjusted for inflation and presented in 2016 dollars using the Reserve Bank of Australia Inflation Calculator. On this basis, in 2001, Aboriginal median weekly income in Halls Creek LGA was \$248 and by 2016 it had risen only slightly to \$274, an increase in real terms of just 9% over 15 years. In Wyndham-East Kimberley there was a higher gain in real income from \$286 to \$356, an increase of 24%. While these medians therefore remain low, the striking feature is how they have fallen further behind non-Aboriginal median incomes in the region. In Halls Creek LGA, non-Aboriginal median income increased in real terms by as much as 52% between 2001 and 2016; the equivalent rise in Wyndham-East Kimberley was 36%. Thus, the already substantial income gap between residents of the East Kimberley has widened even further as indicated by the falling ratios of median incomes in Table 4.1. Aboriginal median income in Halls Creek LGA is now barely one-fifth of the non-Aboriginal median having been almost one-third in 2001; in Wyndham-East Kimberley it was just above one-third in 2001, now it is just below.

Table 4.2 Aboriginal and non-Aboriginal median weekly personal incomes in 2001 and 2106 shown in 2016 \$*: Halls Creek and Wyndham-East Kimberley LGAs

	Aboriginal		Non-Aboriginal	
	2001*	2016	2001*	2016
Halls Creek	\$248	\$274	\$854	\$1,298
Wyndham-East Kimberley	\$286	\$356	\$828	\$1,125
	Ratios of Aboriginal to Non-Aboriginal median incomes*			
	2001		2016	
Halls Creek	0.29		0.21	
Wyndham-East Kimberley	0.34		0.32	

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data converted to \$2016 using the Reserve Bank of Australia Inflation Calculator

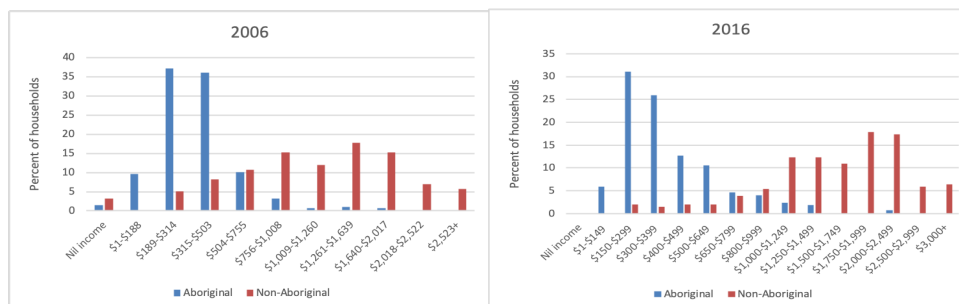
<https://www.rba.gov.au/calculator/annualDecimal.html>

Household income

Of course, individual personal incomes are invariably shared, usually with other family members, as part of a household. The collective income of household members is therefore an important a measure of access to financial resources. This is reported by the census as household income. While gross household income distributions are available from each census, in order to examine change over time, and between populations, we need to know whether any shift is due to actual changes in income levels or simply to changes in household size and composition. To do this, the ABS reports household income using an equivalence scale that places households on an equal footing independent of size and composition. Equivalised household incomes are therefore total household incomes adjusted to facilitate comparison of income levels between households of differing size and composition. They enable direct comparison over time. However, equivalised scales were not available for 2001 census output and so here we use 2006 as the base year.

Figure 4.3 shows equivalised weekly incomes for Aboriginal and non-Aboriginal households in Halls Creek LGA in 2006 and 2016 with income categories for 2006 adjusted for inflation and reported in 2016 dollars. This highlights an ongoing paucity of Aboriginal household income. In 2006, as much as 84% of Aboriginal households had an income of less than \$500 per week. While this proportion was lower in 2016 it still amounted to 76%. By contrast, in 2006, as little as 2% of Aboriginal households had an equivalised income above \$1,000 per week in 2006 and while this was slightly higher in 2016 it was still very low at only 5%. The proportion in the middle of the distribution between \$500-\$1,000 rose slightly more from 13% to 19%. Despite this modest shift, the 2016 Census still reported as much as 37% of Aboriginal households with an effective equivalised income of less than \$300 per week. This compares to just 2% of non-Aboriginal households. Significantly, then, the median equivalised Aboriginal household income barely increased between 2006 and 2016 and so the gap between Aboriginal and non-Aboriginal household incomes remained very substantial and actually widened over the decade with the ratio of medians between the two falling from 0.28 in 2006 to 0.21 in 2016 (Table 4.3).

Figure 4.3 Distribution of Aboriginal and non-Aboriginal gross weekly equivalised household income (\$) adjusted for inflation*: Halls Creek LGA, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016
 * 2006 income categories adjusted for inflation using \$2016

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Table 4.3 Median Aboriginal and non-Aboriginal equivalised gross weekly household incomes (\$): Halls Creek LGA, 2006* and 2016.

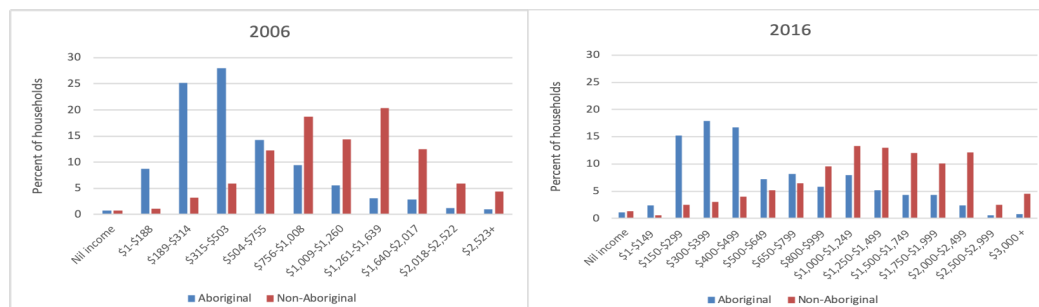
	Aboriginal		Non-Aboriginal	
	2006*	2016	2006*	2016
Median	326	350	1,175	1,693
Ratio Aboriginal/non-Aboriginal	0.28	0.21		

Source: ABS Census of Population and Housing 2006 and 2016

*2006 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

As for the Wyndham-East Kimberley LGA (Figure 4.4), in 2006 as much as 62% of Aboriginal households had an income of less than \$500 per week and while this proportion was lower in 2016 it was still just over half (53%). By contrast, in 2006, only 14% of Aboriginal households had an equivalised income above \$1,000 per week although this had risen to 25% by 2016—a noticeably higher proportion than in Halls Creek. The proportion in the middle of the distribution between \$500-\$1,000 was more or less stable at 24% in 2006 and 21% in 2016. While almost one fifth of Aboriginal households had an equivalised income of less than \$300 per week in 2016 (compared to just 2% of non-Aboriginal households), once again this was a better outcome than in Halls Creek. In effect, unlike Halls Creek, real median income for Aboriginal households in Wyndham-East Kimberley has remained more or less unchanged since 2001 and the income gap compared to other households has also remained effectively steady. Nonetheless, Aboriginal household income remains at just over one-third of the level of other households in the LGA (Table 4.4).

Figure 4.4 Distribution of Aboriginal and non-Aboriginal gross weekly equivalised household income (\$) adjusted for inflation*: Wyndham-East Kimberley LGA, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016

* 2006 income categories adjusted for inflation using \$2016

Table 4.4 Median Aboriginal and non-Aboriginal gross weekly equivalised household incomes (\$): Wyndham-East Kimberley LGA, 2006* and 2016.

	Aboriginal		Non-Aboriginal	
	2006*	2016	2006*	2016
Median	421	480	1,148	1,332
Ratio Aboriginal/non-Aboriginal	0.37	0.36		

Source: ABS Census of Population and Housing 2006 and 2016

*2006 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

One important measure of economic status that is often based on median household income is the proportion of people on incomes below a poverty line. As noted, relative poverty measures are generally based on a percentage of the median income of the population as a whole and a commonly used measure is to identify people living in households with a disposable income below 50% of the median disposable income for all Australian households. This is the method applied by Markham and Biddle (2018)

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in their analysis of Indigenous income and poverty in Australia and it means that their rate is a measure of the economic situation of Indigenous Australians relative to the entire population of the country. The Markham and Biddle analysis reveals that the Aboriginal poverty rate in the East Kimberley region was high at 53.2% in 2016 (6th highest among Indigenous people out of 36 regions across Australia), but more to the point it had increased from 50.1% in 2011 (Markham and Biddle 2018: 18-19; Francis Markham pers. com.). This increase, in what was already a very high rate of poverty, represents a remarkably negative outcome given the scale of both public and private investment in the East Kimberley that has been made in recent years.

As for the numbers resident in low income households, we can use census data to establish the national median equivalised household income and then use 50% of that as a benchmark. Table 4.5 shows the results for 2006 and 2016. This reveals that Halls Creek LGA has a consistently higher proportion of Aboriginal population in low income households. Furthermore, there are now noticeably more people in such households and they account for as much as two-thirds of the local population. In Wyndham-East Kimberley, while the number of people in low income households increased slightly, the proportion also fell slightly, but it still stands at just under half of the population.

Table 4.5 Aboriginal population resident in low income households in Halls Creek and Wyndham-East Kimberley LGAs, 2006 and 2016.

	Halls Creek LGA		Wyndham-East Kimberley LGA	
	n*	% of population	n*	% of population
2006	1,751	60.7	1,320	47.5
2016	1,985	66.9	1,435	46.6

Source: ABS Census of Population and Housing 2006 and 2016

* Estimate of population resident in low income households based on ERP

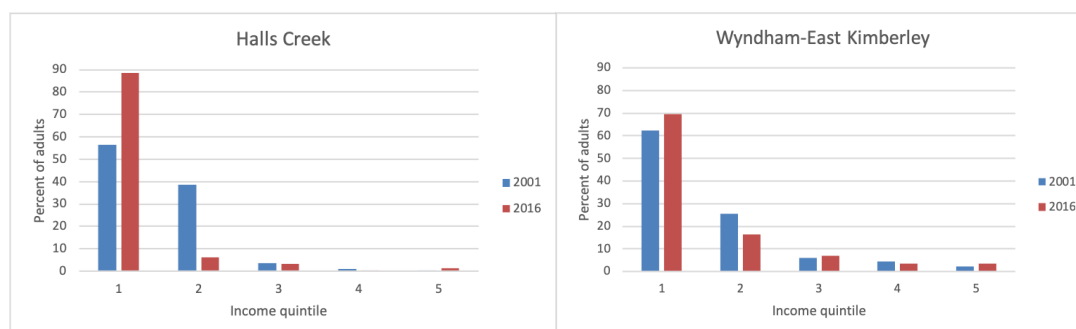
Relative change in Aboriginal income distributions

The distribution of individuals or households by income quintiles over time can be also used as a summary measure of relative change. Here the incomes of non-Aboriginal individuals and households in each of the East Kimberley Local Government Areas are ranked in ascending order (from lowest to highest income) and then divided into five equal groups (five quintiles) each comprising 20 per cent of the relevant population. The proportions of incomes among Aboriginal individuals and households in each of these same quintiles are then calculated. If income distributions were the same across the Aboriginal and non-Aboriginal populations, then 20 per cent of Aboriginal adults and households would be in each quintile.

With regard to personal income, we can see from Figure 4.5 that parity across income quintiles is far from the case both in 2001 and in 2016 and in each LGA. In Halls Creek LGA, instead of recording 20% percent of Aboriginal adults in the first (lowest income) quintile, almost 60% of Aboriginal incomes fell into this category in 2001 while in 2016 this had risen to almost 90%. Conversely, the share of Aboriginal incomes in the highest 4th and 5th quintiles hardly registered. Virtually the same levels and trend is observed in Wyndham-East Kimberley, although here there were slightly higher proportions in the middle and upper quintiles in 2001 but again, these hardly registered in 2016.

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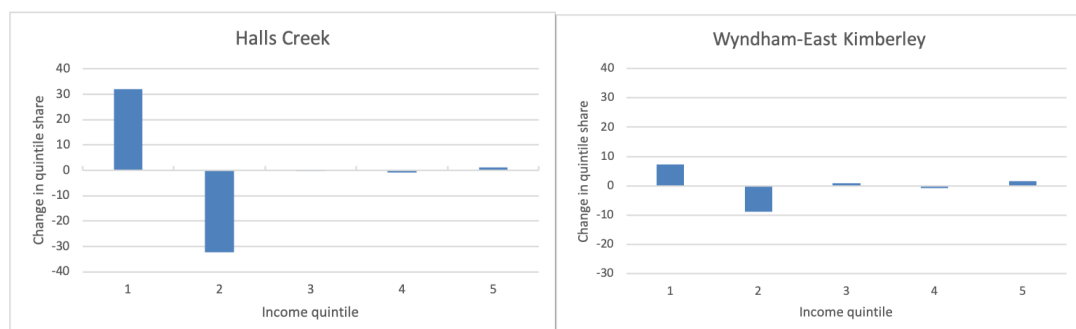
Figure 4.5 Quintile distribution of Aboriginal personal incomes: Halls Creek and Wyndham-East Kimberley LGAs, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

These shifts in relative Aboriginal income distribution are also clearly illustrated in Figure 4.6 which shows the net change in quintile shares. The most obvious feature in both LGAs is a large drop in the proportion of individuals with incomes in the second lowest quintile but only because by 2016 these had fallen into the lowest income quintile. While this partly reflects an increase in persons with nil income, it is also indicative of the fact real income for persons on social security payments including CDP (who predominate in the lower income quintiles) have been more or less static over the period in question as these payments are indexed to inflation rather than to wages. It also reflects the lower wages available under CDP as opposed to CDEP with its income top-up system which predominated in 2001. As for the much lower proportions of Aboriginal people in higher income quintiles, and presumably on wages, these shares have remained effectively unchanged in Halls Creek but have increased in Wyndham-East Kimberley in quintiles 3 and 5 indicating improved economic status for at least some residents in that area. This no doubt reflects the greater availability of higher paying professional and skilled jobs available in Wyndham-East Kimberley that some Aboriginal people have shared in.

Figure 4.6 Net change in quintile distribution of Aboriginal personal incomes: Halls Creek and Wyndham-East Kimberley LGAs, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

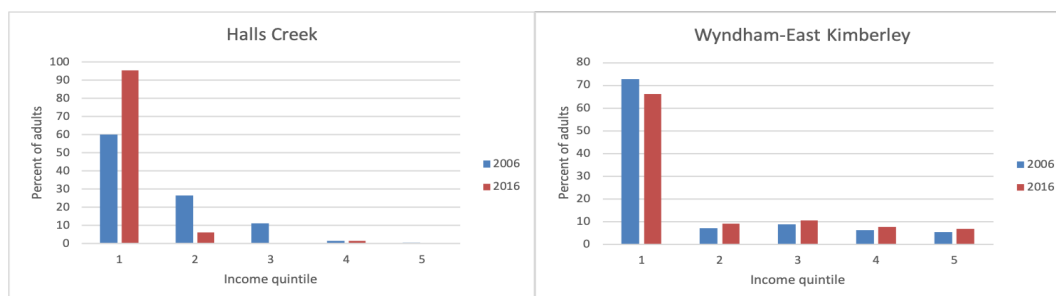
Examination of reasons behind this marked deterioration in the economic status of Aboriginal adults in both of the East Kimberley LGAs would require a separate report. However, two fairly obvious factors stand out. First of all, it reflects the fact that the relative labour force status of Aboriginal adults in both LGAs has lagged far behind that of other residents with the result that most Aboriginal adults remain overly-dependent for income on government pensions and allowances rather than on wages. Second, research has shown that the ability to work extra hours and earn ‘top-up’ wages among those employed by the CDEP scheme (which as we have seen involved most adults in 2001) accounted for incomes that were more than one-third higher than those

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received by individuals on unemployment benefit (Altman and Gray 2000). It is likely, therefore, that the impact of losing this widespread additional income earning capacity due to abandonment of the CDEP scheme is now showing up as reduced economic status in census statistics.

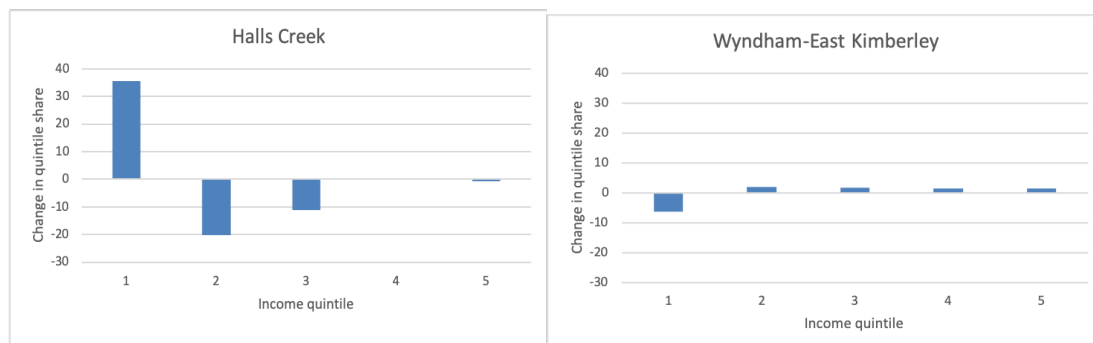
A somewhat different story emerges from the analysis of change in equivalised household incomes (Figures 4.7 and 4.8), at least in Wyndham-East Kimberley. In this LGA, there has been a general improvement in Aboriginal income with a shift away from the lowest quintile towards the middle of the income distribution. There has also been some gain in the highest income quintiles. In Halls Creek, however, the story is very much as it was for personal income with households now very much concentrated in the lowest income quintile.

Figure 4.7 Quintile distribution of Aboriginal equivalised gross household income: Halls Creek and Wyndham-East Kimberley LGAs, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016

Figure 4.8 Net change in quintile distribution of Aboriginal equivalised gross household incomes: Halls Creek and Wyndham-East Kimberley LGAs, 2006 and 2016



Source: ABS Census of Population and Housing 2006 and 2016

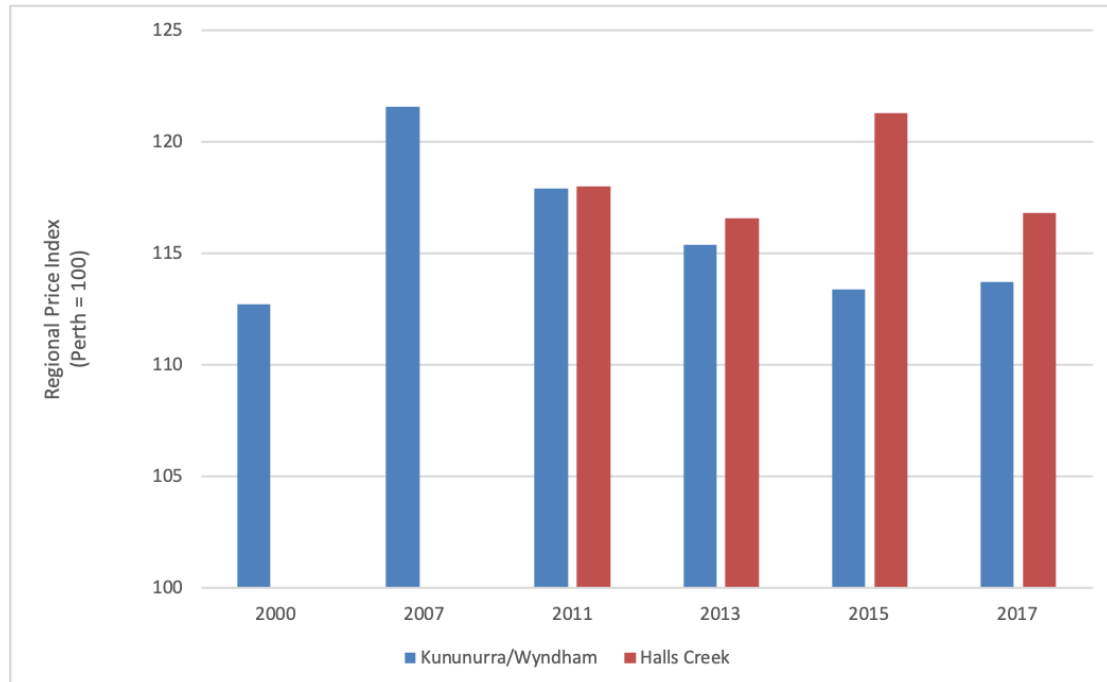
Taken together, these relative changes in income point to growing income inequality within the Aboriginal population of the East Kimberley as people without jobs and dependent solely on income support are left behind financially compared to those in employment with sometimes high paying jobs. At the same time, there appears to have been some amelioration of this in the context of household incomes no doubt due to a mix of improved family support payments and wages growth. According to Markham and Biddle (2018: 27) income inequalities within the Aboriginal population are highest in Western Australian regions, and highest of all in the East Kimberley. Clearly, a version of this national story is occurring within the region as well.

The significance of this growing income disparity is best considered in the context of cost of living in the East Kimberley. Figure 4.9 shows the Regional Price Index for a basket of goods in the East Kimberley from 2000 to 2017. The Regional Price Index is

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a survey-based measure developed by the Western Australia Department of Primary Industries and Regional Development to compare the price of a unique basket of 500 goods and services in regional locations with its equivalent in Perth. Items in the basket are derived from the ABS' Consumer Price Index and include food, alcohol and tobacco, clothing, housing, household equipment and operation, health, transport and recreation and education. Perth prices in the index equal 100.

Figure 4.9 Regional Price Index: towns of Kununurra/Wyndham* and Halls Creek, 2000-2017



* Kununurra only in 2000 and 2007

Source: Western Australia Department of Primary Industries and Regional Development, Regional Prices Index 2000, 2007, 2011 2013, 2015 and 2017

Since the year 2000, the East Kimberley region has persistently recorded amongst the highest prices for goods and services in Western Australia. Figure 4.7 shows the summary of relative prices in Kununurra/Wyndham and in Halls Creek compared to Perth. Inevitably, prices in communities away from these main towns will be higher but to what extent is not systematically known. Also, unknown are the additional costs incurred by travel to main centres for the purchase of goods and services. Leaving these data gaps aside, a basket of goods in Kununurra/Wyndham was on average 16% higher than in Perth over the 17-year period shown in Figure 4.7. The equivalent figure for Halls Creek over a shorter 6-year period was 18%. Relative prices in Kununurra/Wyndham seemed to have peaked in 2007 at the height of mining activity at Argyle, and while they subsequently fell they now seemed to have stabilised at around 13% higher than Perth. In contrast, Halls Creek prices have been persistently high and the peak index in 2015 was the highest in the whole of Western Australia. This fact assumes added significance when viewed against the background of poor and worsening personal and household income status in Halls Creek and it provides an added dimension to the calculation of regional poverty.

Employment and non-employment income

The primary reason for rising Aboriginal poverty in the East Kimberley is sluggish growth in Aboriginal mainstream employment. However, also relevant is the occupational status of jobs acquired. Despite the fact that average annual growth in real wages in Australia was itself in decline at the time of the 2016 Census (ABS 2016b), it remains the case that income from wages yields a consistently higher real return than income from social security payments that are linked to CPI only (Markham and Biddle 2018: 33). To explore the impact of these variables in the East Kimberley, Tables 4.6 and 4.7 show Aboriginal average annual gross incomes in the each LGA by labour force status in 2001 and 2016, with 2001 figures adjusted for inflation. As we can see, in Halls Creek LGA, average real income from employment increased by 9% from \$35,565 to \$38,835 over the 15-year period whereas non-employment incomes stagnated—in effect, they simply kept pace with inflation as they are designed to do. In Wyndham-East Kimberley, on the other hand, average real employment income increased by 24% from \$45,462 to \$56,217. In both areas, then, but especially in Wyndham-East Kimberley, there has been a widening gap in incomes between Aboriginal people in employment and those who are not.

Table 4.6 Average annual Aboriginal gross personal income (\$) by labour force status: Halls Creek LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	38,835	12,721	13,789	19,489
2001*	15,028	35,565	11,669	13,045	15,489

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data adjusted for inflation to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

Table 4.7 Average annual Aboriginal gross personal income (\$) by labour force status: Wyndham-East Kimberley LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	56,271	14,490	17,484	29,358
2001*	16,391	45,462	14,423	15,492	20,806

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data adjusted for inflation to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

Average non-Aboriginal income from employment has been consistently higher than Aboriginal income and it also increased in real terms at a higher rate (Tables 4.8 and 4.9). In Halls Creek LGA, non-Aboriginal employment income rose by 37% and in Wyndham-East Kimberley by 27%. No doubt this difference reflects change in both the industry and occupational mix of regional employment with non-Aboriginal workers occupying the more professional and technical positions that have become more prevalent in the region since 2001. The effect over time of these changes in labour force status and composition on the relative income status of Aboriginal people is shown as a series of income ratios in Tables 4.10 and 4.11.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Table 4.8 Average annual non-Aboriginal gross personal income (\$) by labour force status: Halls Creek LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	81,639	n.d.	23,880	72,140
2001*	49,026	59,593	9,499	11,170	50,488

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

Table 4.9 Average annual non-Aboriginal gross personal income (\$) by labour force status: Wyndham-East Kimberley LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	75,192	27,465	22,434	66,842
2001*	77,963	59,369	13,479	20,066	52,747

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

In Halls Creek LGA, average employment income for Aboriginal people was 60% of the level recorded for non-Aboriginal people in employment in 2001. By 2016, this had fallen to less than half the level at 47%. By contrast, in Wyndham-East Kimberley, Aboriginal employment income was closer to that of the non-Aboriginal workforce in 2001 at 77% of the level, and it has remained mostly unchanged at 75%.

Table 4.10 Ratio of Aboriginal to non-Aboriginal annual gross personal income (\$) by labour force status: Halls Creek LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	0.47	n.d.	0.58	0.27
2001*	0.31	0.60	1.23	1.17	0.31

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

Table 4.11 Ratio of Aboriginal to non-Aboriginal annual gross personal income (\$) by labour force status: Wyndham-East Kimberley LGA, 2001* and 2016

	Employed CDEP	Employed mainstream	Unemployed	NILF	Total
2016	N/A	0.75	0.53	0.78	0.44
2001*	0.21	0.77	1.07	0.77	0.39

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

As for total amounts of income generated by employment, Tables 4.12 and 4.13 show this for Aboriginal and non-Aboriginal workers in 2001 and 2016. Once again, 2001 figures are adjusted for inflation. It should be noted that it is not possible to weight these figures using ABS population estimates as their distribution by income is unknown. As such, the data presented here are inevitably minimum amounts based on census counts of labour force status. According to these data, in 2001, Aboriginal workers in Halls Creek earned an estimated gross income of \$26m. By 2016, in real terms, this amount was actually less at \$23m with the main reason for this reduction most likely being the loss of \$10m in earnings from CDEP. Also, because of the latter, the share of Aboriginal income derived from employment rose from just 17% in 2001 to almost half (45%) in 2016. In real terms, Aboriginal income from mainstream employment in 2016 has now simply replaced what used to be obtained from CDEP (\$10m each). For persons not in the labour force, real incomes are no different in 2016 that they were in 2001.

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Table 4.12 Estimated Aboriginal and non-Aboriginal annual gross personal income (\$million adjusted for inflation) by labour force status: Halls Creek LGA, 2001* and 2016

	Aboriginal		Non-Aboriginal	
	2001*	2016	2001*	2016
Employed CDEP	10.19m	N/A	2.55m	N/A
Employed mainstream	4.55m	10.41m	18.47m	31.67m
Unemployed	618,541	1.89m	56,990	338,000
NILF	11.01m	10.81m	748,481	1.09m
Total	26.42m	23.11m	22.12m	33.11m
% of income from mainstream employment	17.2	45.0	83.5	95.7

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

In Wyndham-East Kimberley, there have been more substantial real gains to Aboriginal employment income with this rising from \$16m in 2001 (including CDEP) to \$25m in 2016. As a consequence, income from mainstream employment now accounts for almost two-thirds of all income (61%) although this is still way behind the equivalent figure of 95% for non-Aboriginal residents. Some increase in income for those who are unemployed or not in the labour force is also noted but in gross amounts these remain relatively low.

Table 4.13 Estimated Aboriginal and non-Aboriginal annual gross personal income (\$million adjusted for inflation) by labour force status: Wyndham-East Kimberley LGA, 2001* and 2016

	Aboriginal		Non-Aboriginal	
	2001*	2016	2001*	2016
Employed CDEP	6.10m	N/A	1.17m	N/A
Employed mainstream	10.46m	24.65m	135.19m	200.69m
Unemployed	807,751	2.09m	674,013	1.51m
NILF	9.02m	13.34m	8.15m	9.42m
Total	26.59m	40.07m	145.27m	211.62m
% of income from mainstream employment	39.3	61.5	93.1	94.8

Source: ABS Census of Population and Housing 2001 and 2016

*2001 census data converted to \$2016 using the ABS' CPI Inflation Calculator (ABS Cat. no. 6401.0)

Of interest to the present report, especially in regard to Wyndham-East Kimberley, is the extent to which this growth in Aboriginal employment income has relied on relatively high wages available from employment at Argyle mine. Ultimately, this is a difficult calculation to make, but according to 2016 Census data for Wyndham-East Kimberley, as much as one-third (31%) of Aboriginal persons who were in higher paying jobs of over \$78,000 per annum were in jobs in the mining industry which at the time effectively meant at ADM. While this is of interest in itself, the more strategic issue that arises in the context of mine closure is how this obviously significant component of regional earnings might be replaced, indeed can it be?

Income support

So far, the headline income indicators have focused on persons in employment. As such, they reflect the incomes, and to some extent the circumstances, of individuals at the upper ends of the regional income distribution. However, as noted, this refers to a minority of the adult Aboriginal population. The vast majority of Aboriginal adults in the East Kimberley are not in the position of earning even close to the regional median income let alone anything above it—they never have been, and this remains the case. For

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those who are either unemployed or not in the labour force, average incomes in Halls Creek are stuck at around 34% of the level of their employed Aboriginal counterparts and around 28% in Wyndham-East Kimberley reflecting their reliance on social security payments.

Table 4.14. shows the distribution of these payments for Aboriginal residents of the East Kimberley in 2006, 2011 and 2016 at around the time of the census in each of those years. Two features that stand out immediately are the substantial increases in recipients of Newstart Allowance and Disability Support Pension payments. Based on these figures, the proportion of the estimated Aboriginal population aged 22-64 years reliant on Newstart Allowance (22-64 is the eligibility age range for Newstart Allowance) amounted to as much as 24% in 2016. This was up from 13% in 2006. Equivalent proportions for those on Disability Support payments (age range 16-64 years) were 12% in 2006 rising to 19% in 2016. As noted earlier, the numbers on Newstart shown here are far greater than the number recorded as unemployed by the census (466), even though this latter figure is adjusted for undercount. Obviously, one reason for the rise in Newstart recipients over this period is the administrative transfer of individuals who would have been on CDEP in 2006 but were shifted to Job Search activities by 2016. Other observations include the fact that Aboriginal disability payments rose substantially between 2006 and 2011 and then fell, while ABSTUDY payments remained throughout low despite a local perception that many Aboriginal children attend schools out of region.

Table 4.14 Aboriginal social security payment recipients by payment type: East Kimberley residents 2006, 2011 and 2016*

	2006	2011	2016
ABSTUDY (Living Allowance)+	23	40	29
Newstart Allowance	315	601	739
Parenting Payment Partnered	220	181	184
Parenting Payment Single	411	372	345
Youth Allowance (other)	168	162	124
Age Pension	N/A	228	225
Carer Allowance	N/A	143	143
Carer Payment	N/A	100	117
Disability Support Pension	355	779	637
Rent Assistance#	30	34	58

Source: Commonwealth Department of Social Services, Canberra

*As at fortnight ending 30 September

#Figures reflect the number of income units receiving Rent Assistance. An income unit comprises a single person (with or without dependent children) or a couple (with or without dependent children). Single social security recipients living together in the same household are regarded as separate income units.

+ABSTUDY data may not be directly comparable over time due to differing data sources/extraction rules.

Nd. No data

These data refer to recipients who are determined to be current (ie. entitled to be paid) on the Centrelink payment system. Aboriginal recipients include only those who have voluntarily identified as Aboriginal. These data may therefore represent an undercount of Aboriginal recipients and an overcount of non-Aboriginal recipients. Some of these payments are not mutually exclusive, i.e. Rent Assistance and Carer Allowance can be received in conjunction with other payment types.

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To the extent that income support payments are designed to address some measure of financial need or hardship within the community it is instructive to use these data to assess whether such hardship across the Aboriginal resident population of the East Kimberley has been reduced since 2006. From the data available, parenting payments provide the best guide for this as eligibility is contingent on low income (either single or combined). From Table 4.14 we can see that the number of parenting payment recipients fell over the period from 2006 to 2016 by 16% for both partnered and single payments. This is interesting as it seems to run counter to the worsening relative income status of both individuals and households revealed earlier. Having said that, there are challenges in comparing welfare payments over time given the frequent shifts in eligibility criteria, related payments and associated individual and family circumstances. It remains a fact, though, that in 2016 around 530 Aboriginal parents were eligible for such payments. This represents a large number given that the 2016 Census counted a total of 774 Aboriginal family households across the East Kimberley.

5. Education and training

From the viewpoint of engagement with the regional labour market, outcomes from education are typically measured in terms of participation rates, competency in numeracy and literacy skills, years of completed schooling and (for the Vocational Education and Training (VET) sector) course completion rates. As mentioned in the previous chapter, workplaces in general, including those engaged in Aboriginal customary land management, are constantly upgrading and changing their occupational skill requirements and the achievement of adequate and appropriate accreditation (WACE and/or tertiary qualification) is fast becoming a prerequisite for entry into ongoing employment across the board. Another feature of education that has changed considerably since 2001 is a growing expectation that children will have access to and participate in some form of early learning (birth to 3 years in playgroups and child and parent centres) prior to optional entry into kindergarten at age 4 and compulsory entry into pre-primary at age 5. Inevitably, interest has begun to surround the question of preparedness for formal schooling and key measures that have been developed include participation rates for kindergarten and pre-primary as well as indices of childhood development.

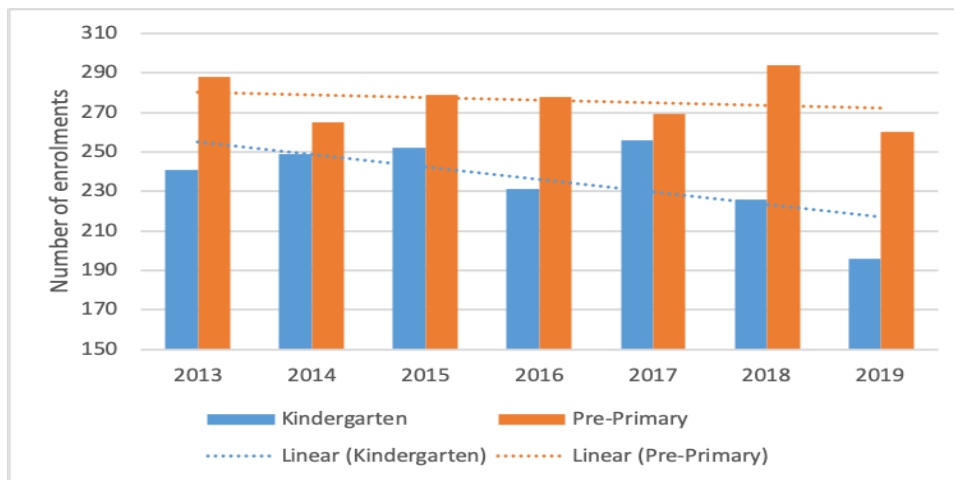
Early education and childhood development

Data were obtained from the WA Department of Education on kindergarten and pre-primary enrolments in East Kimberley government schools between 2013 and 2019. These account for virtually all school-based kindergarten enrolments in the region since programs are available only at government schools aside from at Luurnpa Catholic school at Balgo.

An obvious metric to assess early education exposure is the rate of enrolment in kindergarten among those who are 4 years old by 30 June in any school year. This could only be done here for 2016 since that is the only year for which we have both enrolment data and population age data. However, that is the least limitation in trying to establish meaningful statistics. First of all, confidence in single-year age data for Aboriginal children in the East Kimberley is low as it derives from an interpolation of ABS estimates by five-year age group. Also unclear is just how accurate the numerator data might be given that the age cut-off for eligibility is mid-year and it is not certain that enrolment numbers refer strictly to this eligible cohort. As it turns out, there are almost twice as many enrolments in 2016 than the estimated number of 3-4 year-olds and this excludes an unknown number of children from independent school catchments who are unlikely to be enrolled in kindergarten. In short, there are too many inconsistencies in both sets of data to generate a meaningful kindergarten participation rate. Since pre-primary is a compulsory first year of formal schooling one would expect all those in the eligible cohort (turned 5 by 30 June of the school year) to be enrolled. Once again, though, because of the same numerator and denominator problems identified above, it is not possible to determine this. As with kindergarten, if the denominator relates to those strictly within the eligible age cohort then all one can say is that the number of enrolments far exceeds the population estimate for that group. If children from other (older) age cohorts are also included in annual pre-primary enrolment figures then there is no prospect of deriving participation rates using anything other than unit record data and these are simply not available.

What we are left with, then, are the raw annual enrolment numbers. These are shown in Figure 5.1 for 2013-2019 for kindergarten and pre-primary children in government schools. Not surprisingly, given that kindergarten is optional, enrolments prior to the first compulsory year of schooling are fewer though not insubstantial. Of more interest is the fact that pre-primary enrolments have been fairly stable since 2013 while kindergarten enrolments appear to be in long-term decline. It is not unreasonable to assume that successive cohorts of 3-4 year-olds and 4-5 year-olds would be roughly of equivalent size. That being the case, a reverse ratio of pre-primary enrolments and previous-year kindergarten enrolments provides some measure of the degree to which pre-primary children had attended kindergarten in the previous year.

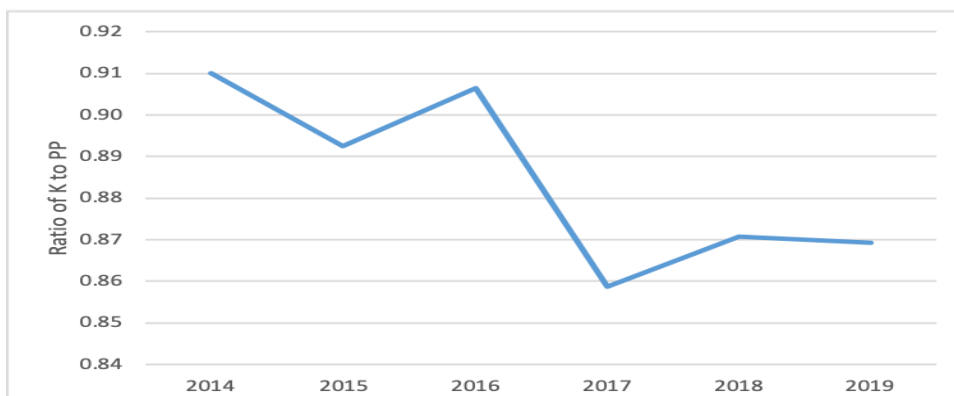
Figure 5.1 Aboriginal enrolments* in government school Kindergarten and Pre-Primary years: East Kimberley region, 2013-2019



Source: Government of Western Australia Department of Education;
*Semester 1

These ratios are shown in Figure 5.2. In 2014, for example, 91% of pre-primary enrollees that year were enrolled in kindergarten in 2013. By 2019, this proportion had fallen to 87%. In other words, assuming that pre-primary enrolments are universal among 5 year-olds, it would seem that enrolment rates in kindergarten have been consistently high although with some indication that they are falling. The other proviso, of course, is that these figures exclude children from communities where education services are provided by non-government schools and so the rates shown here could be much lower.

Figure 5.2 Ratios of Aboriginal kindergarten (K) to pre-primary (PP) enrolments: East Kimberley government schools, 2013-2019*



Source: Government of Western Australia Department of Education;
*Semester 1

Early development census

In 2009, Australia became the first country in the world to collect national data on the developmental health and wellbeing of all children starting school. Since that time the Australian Early Development Census (AEDC) has gathered the same set of indicator data every three years. Teachers of children in their first of year of full-time schooling complete a research tool—the Australian version of the Canadian Early Development Instrument (AvEDI)—based on their knowledge and observations of the children in their class. The AvEDI measures five important areas (domains) that are indicative of early childhood development. These include physical health and wellbeing, social competence, emotional maturity, school-based language and cognitive skills, communication skills and general knowledge. For each of these domains, children receive a score of between zero and ten with zero representing those who are most developmentally vulnerable. To report on outcomes, a series of cut-off scores are assigned to each of the five domains: children falling below the 10th percentile are categorised as ‘developmentally vulnerable’ and those falling between the 10th and 25th percentile are categorised as ‘developmentally at risk’. All other children are categorised as ‘developmentally on track’.

Across the East Kimberley a total of around 210 students with a median age of 5 and a half years have been the subject of this survey at each round since 2009. In Halls Creek LGA Aboriginal children have comprised an average of 92% of individuals in the census since 2009, while in Wyndham-East Kimberley the average Aboriginal share has been 55%. This means that, on average, across the East Kimberley, a total of 145 Aboriginal children have participated in each census. This number is suggestive of universal coverage given that interpolation of the Aboriginal 5-9 year age group from ABS estimates produces a figure of 125 for those aged 5 in 2016.

Results from each survey are shown in Tables 5.1 and 5.2 for Halls Creek and Wyndham-East Kimberley separately according to the distribution of students in each outcome category across the five domains. The findings are quite mixed. The most striking observation is that the majority of children in Halls Creek LGA are either ‘at risk’ or ‘vulnerable’ in each of domains and in each year, whereas the opposite is true in Wyndham-East Kimberley. A second point is that all the changes designated as ‘significant’ in the 2009 results, compared to 2018, are ‘negative’ in Halls Creek and ‘positive’ in Wyndham-East Kimberley. For example, the proportion on track in physical health and wellbeing in Halls Creek shows a significant decrease from 2009 to 2018 (47.4% to 34.4%) whereas in Wyndham-East Kimberley a significant increase is reported (52.9% to 65.9%). This contrast in results is repeated throughout. Not surprisingly, the depth of vulnerability for children in Halls Creek was significantly higher in 2018 compared to 2009 and significantly lower in Wyndham-East Kimberley. In short, the overall picture for Aboriginal children in their first year of schooling in Halls Creek LGA is one of deterioration since 2009 across all of the domains with high levels of vulnerability across much of the age group. However, the extent to which Aboriginal children in Wyndham-East Kimberley shared in this picture, or in the more general positive outcomes reported for their own LGA, cannot be ascertained with certainty as they comprise only half of the data.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Table 5.1 Australian Early Development Census domain results: Halls Creek LGA, 2009-2018

Domain		2009	2012	2015	2018	Change 2009 vs 2018
Physical health and wellbeing	On track	47.4	35.1	36.6	34.4	Significant decrease
	At risk	19.2	21.1	16.9	34.4	Significant increase
	Vulnerable	33.3	43.9	46.5	31.3	No significant change
Social competence	On track	47.4	31.6	43.1	31.3	Significant decrease
	At risk	19.2	33.3	23.6	29.7	Significant increase
	Vulnerable	33.3	35.1	33.3	39.1	Significant increase
Emotional maturity	On track	39.0	36.8	40.3	45.3	No significant change
	At risk	29.9	28.1	30.6	21.9	No significant change
	Vulnerable	31.2	35.1	29.2	32.8	No significant change
Language and cognitive skills (school-based)	On track	33.3	37.3	37.5	18.8	Significant decrease
	At risk	19.2	20.3	23.6	26.6	No significant change
	Vulnerable	47.4	42.4	38.9	54.7	Significant increase
Communication skills and general knowledge	On track	53.8	40.7	41.7	25.0	Significant decrease
	At risk	20.5	23.7	13.9	50.0	Significant increase
	Vulnerable	25.6	35.6	44.4	25.0	No significant change

Source: Commonwealth of Australia 2019

Table 5.2 Australian Early Development Census domain results: Wyndham-East Kimberley LGA, 2009-2018

Domain		2009	2012	2015	2018	Change 2009 vs 2018
Physical health and wellbeing	On track	52.9	66.7	65.9	65.9	Significant increase
	At risk	14.7	11.1	8.1	9.8	No significant change
	Vulnerable	32.4	22.2	26.0	24.4	Significant decrease
Social competence	On track	58.1	67.7	58.5	71.5	Significant increase
	At risk	27.9	14.5	23.6	11.4	Significant decrease
	Vulnerable	14.0	17.7	17.9	17.1	No significant change
Emotional maturity	On track	55.9	69.4	62.6	72.4	Significant increase
	At risk	22.8	21.0	20.3	13.0	Significant decrease
	Vulnerable	21.3	9.7	17.1	14.6	Significant decrease

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Domain		2009	2012	2015	2018	Change 2009 vs 2018
Language and cognitive skills (school-based)	On track	44.8	61.6	54.1	56.9	Significant increase
	At risk	24.6	17.6	21.3	17.9	Significant decrease
	Vulnerable	30.6	20.8	24.6	25.2	Significant decrease
Communication skills and general knowledge	On track	56.6	70.6	60.2	65.9	Significant increase
	At risk	25.0	14.3	20.3	14.6	Significant decrease
	Vulnerable	18.4	15.1	19.5	19.5	No significant change

Source: Commonwealth of Australia 2019

Similar difference between the two LGAs is evident according to levels of vulnerability (Table 5.3). In Halls Creek, the level of vulnerability against one or more domains has risen steadily since 2009 and now accounts for more than 70% of students assessed. Vulnerability on two or more domains also increased between 2009 and 2012 but has since remained steady at half of all students. In Wyndham-East Kimberley, on the other hand, vulnerability rates are lower accounting for around 40% of students against one domain and 25% against two or more. Rates here have also been more variable but with a long-term tendency to decline. In Western Australia as a whole, around 56% of all 5 year-olds were found to be ‘on track’ across all of the five AEDC domains and the Western Australian government aims to achieve a 10% increase in the number of students achieving across-the-board by 2027 thereby raising the overall percentage to just over 60% (Government of Western Australia 2019). With the high levels of vulnerability in the East Kimberley shown in Table 5.3 there are likely to be relatively few students on track across all five domains and therefore achieving the WA government target may only require a very small increase in numbers.

Table 5.3 Australian Early Development Census levels of vulnerability: Halls Creek and Wyndham-East Kimberley LGAs, 2009-2018

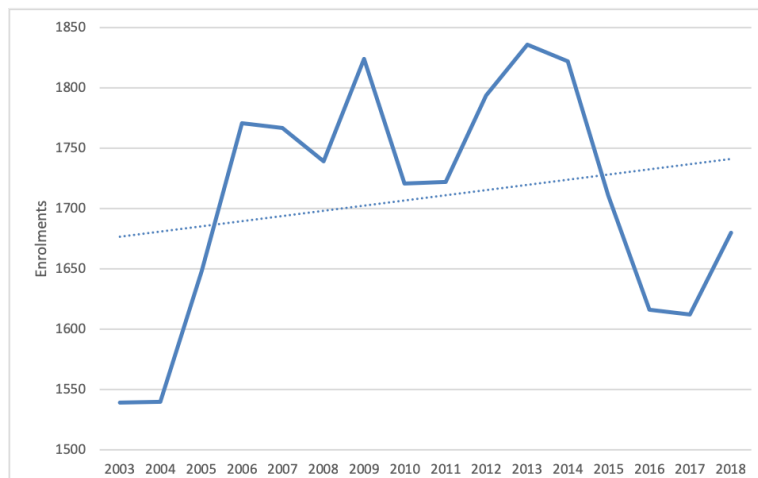
	Halls Creek			
	2009	2012	2015	2018
Vulnerable on one or more domains	61.5	68.4	69.4	70.3
Vulnerable on two or more domains	39.0	50.9	50.0	50.0
	Wyndham-East Kimberley			
	2009	2012	2015	2018
Vulnerable on one or more domains	47.1	36.8	44.7	39.8
Vulnerable on two or more domains	31.6	24.0	27.0	24.4

Source: Commonwealth of Australia 2019

Participation in schooling

There are 17 schools in the East Kimberley—6 government schools and 11 non-government schools (9 Catholic and 2 Independent). Half of these schools are primary schools and the remainder are combined schools offering education at both primary and secondary levels although only the three District High Schools at Halls Creek, Kununurra and Wyndham provide secondary through to Year 12. Figure 5.3 shows the number of Aboriginal enrolments in all of these schools combined between 2003 and 2018.

Figure 5.3 Aboriginal enrolments in primary and secondary schools: East Kimberley region, 2003-2018



Source: <https://www.myschool.edu.au/home/>; Government of Western Australia Department of Education;

Note: Included in the figures for the period 2003-10 are estimates of non-government school enrolments based on annual average non-government school enrolments for the period 2011 to 2018

While the underlying trend points to a rise in enrolments, three distinct periods are observable. The first involves a sharp rise in enrolments between 2003 and 2006 which was probably due to the raising of school-leaving age to 16 years in 2005. The second is the period of generally high enrolment between 2008 and 2014 which, once again, was probably initiated by the raising of school-leaving age in 2008 to 17 years³. Finally, there is the current period, since 2014, during which time enrolments have fallen back towards 2003 levels although with a slight recovery apparent in 2018. Reasons for this recent period of decline in enrolments are unclear although it does correlate with the observation of declining fertility and reduced numbers of school-age children, especially at primary level. Another possibility is that the number of school-age

³ Since 2008 in Western Australia, school attendance or approved home schooling has been compulsory from the beginning of the year in which a child will turn 5 years and 6 months, until the end of the year in which the child reaches 17 years and 6 months, or until the student reaches the age of 18, whichever happens first. There are two main options available for students who wish to leave school earlier. The first is an exemption which is available for students from Year 10 or who will reach the age of 15 years and 6 months or more in the year for which an exemption is sought. This provides for an alternative to full-time schooling, usually a combination of education, training or employment such as an apprenticeship. A number of schools in the East Kimberley offer this option through trades training centres. The other is a ‘notice of arrangement’ which more or less amounts to the same thing but applies to Years 11 and 12.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

children from the East Kimberley attending school elsewhere such as Perth has risen over time due to programs such as the Kimberley Education Excellence Scholarship Program run by Wunan.

Table 5.4 shows the distribution of these enrolments in 2001 and 2016 for each of these East Kimberley schools. The first point to note is the high degree to which schools in the region are comprised of Aboriginal enrolments. Most schools are comprised of at least 90% Aboriginal enrolments with the lowest rate found at Kununurra District High, but even here half of the student population is Aboriginal. Overall, almost three-quarters of school students in the East Kimberley are Aboriginal. Also striking is the large proportion of enrolments in non-government, mostly Catholic, schools (50% in 2001 but falling to 35% in 2016). Since 2001, there appears to have been a relative decline in enrolments in Catholic and Independent schools (down from 50% of the region's enrolments in 2001 to 35% in 2016) although it is true that single year comparisons can be problematic due to annual fluctuations and student mobility. Nonetheless, the substantially higher numbers enrolled at Kununurra and Halls Creek District High schools do seem unequivocal as does the decline at Wyndham District High. The extent to which this increased focus on schooling in the two main towns of the region is associated with the overall shift in residence away from smaller localities is a moot point.

Table 5.4 Aboriginal enrolments and attendance: East Kimberley schools, 2001 and 2016

School	Aboriginal enrolments 2001 ^a	Aboriginal enrolments 2016 ^b	Aboriginal % of total enrolments 2016	Number Attending >90%* 2016
Birlirr Ngawiyiwu Catholic (Ringer Soak)	39	34	100.0	3
Dawul (Doon Doon) RCS	18	12	100.0	10
Halls Creek District High	227	335	96.0	40
John Pujajangka Piyirn (Mulan)	43	24	100.0	5
Jungdranung (Mandangalah) RCS	22	15	100.0	11
Kalumburu RCS	111	125	95.0	25
Kununurra District High	228	520	51.0	83
Kururrungku Catholic Education Centre	39	56	100.0	11
Luurnpa Catholic School (Balgo)	122	88	99.0	10
Ngalangangpum school (Warmun)	106	74	91.0	4
Purnululu Aboriginal Community School	30	21	100.0	11
St. Joseph's Primary Kununurra	151	91	67.0	21
Warlawurru Catholic (Lundja)	70	82	96.0	12
Wyndham District High	105	83	72.0	20
Wanalirri Catholic (Ngallagunda)	n.d.	4	100.0	1
St Joseph's Primary Wyndham	69	33	85.0	12
Yiyili Aboriginal Community school	55	57	97.0	26
Total East Kimberley	1,435	1,606	71.2	305 (19.0)

a. From Taylor 2003:49 and Western Australian Catholic Education Office

b. From: <https://www.myschool.edu.au/>

* Student attendance for more than 90% of available school days as at Term 3, 2016

n/a = school results are unavailable or there are fewer than, or equal to, five students

RCS = Remote Community School

A further observation is that Aboriginal enrolments increased by 11% since 2001. While this appears contrary to the decline in estimated school-age population that we have seen over the same period it does make sense if the 2001 figure was short of full population enrolment. In fact, the 2001 enrolment of 1,435 was noticeably below the ABS estimate of 1,613 for the school-age (5-15) population at the time whereas the

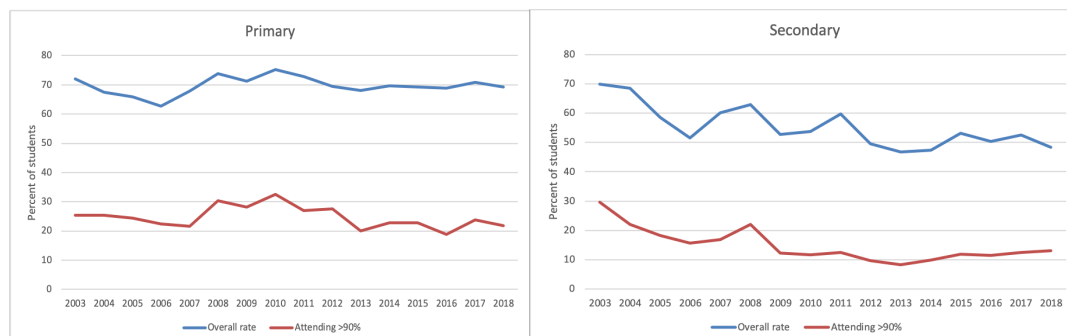
2016 enrolment of 1,602 is very close to the ABS estimate of 1,560 for the Aboriginal school-age population (5-17 years) in that year. This suggests that enrolment in 2016 was universal. Thus, unlike in some parts of remote Australia, the issue in the East Kimberley is not so much ensuring that Aboriginal children are enrolled in school, rather it is the more common challenge of ensuring that they attend school on a regular basis once enrolled.

School attendance

Two attendance measures are routinely gathered for each school—the student attendance rate (defined as the number of actual full-time equivalent student-days attended by full-time students expressed as a percentage of the total number of possible student-days attended over the period), and the student attendance level (defined as the proportion of full-time students whose attendance rate is equal to or greater than 90%). Both of these measures refer to attendance during semester 1 of each school year and reliable time series data are available from the WA Department of Education for the period 2008-2017.

Of those Aboriginal children enrolled each year since 2003 in East Kimberley government primary schools, the attendance rate has generally been around 70% (Figure 5.4). More crucially, though, the attendance level at more than 90% of available school days has been consistently much lower ranging between 20% and 30%. Currently, it is hovering around 20%. By way of comparison, the attendance rate among non-Aboriginal students in the same schools has averaged 92% over the same period and the attendance level has averaged 72%. The situation among Aboriginal students at government secondary level is even worse than at primary level—overall attendance rates appear to have fallen over time from around 70% to 50% and attendance levels have followed a similar downward trend from around 30% to just over 10%. Once again, these rates are much lower than for non-Aboriginal students in the region. Similar data for all non-government schools are not available back to 2003 but the situation for all students (primary and secondary) in non-government schools is not dissimilar to that reported above as shown in Figure 5.5 for the period 2015-2018.

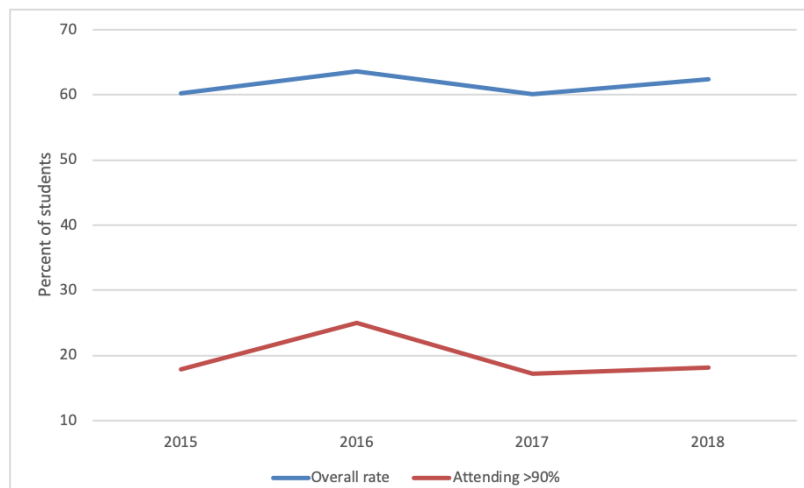
Figure 5.4 Aboriginal attendance rates in government primary and secondary schools: East Kimberley 2003-2018



Source: WA Department of Education

- Notes: 1. Figures may not include all schools as the School Information System was phased in over time to all schools
- 2. Attendance for 2008-12 includes only those students enrolled at the end of Semester 1 and does not include former students of participation NOA
- 3. From 2013, students enrolled for any length of time during Semester 1 are included in the totals and all figures exclude participation NOA. This change was made as part of a national agreement with ACARA for consistent reporting across jurisdictions
- 4. In 2013 PPR became compulsory in Western Australia, therefore Primary = PPR-Y07, previously it was Y01-Y07
- 5. In 2015 Y07 was transitioned to Secondary in Western Australia, therefore from 2015 Primary = PPR-Y06 and Secondary = Y07-Y12. Prior to 2015, Secondary = Y08-Y12

Figure 5.5 Aboriginal attendance rates in non-government primary and secondary schools: East Kimberley 2015-2018



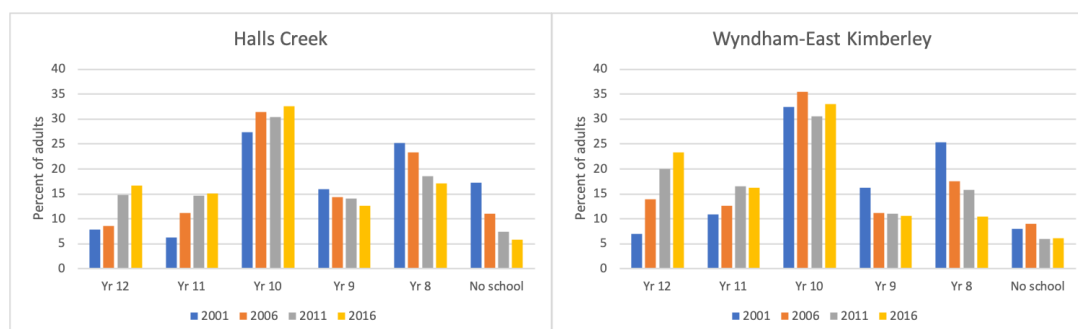
Source: <https://www.myschool.edu.au/>

This means that as much as 80% of Aboriginal students who are currently enrolled in East Kimberley schools are not in attendance for the minimum time stipulated by COAG via the Australian Curriculum Assessment and Reporting Authority (ACARA) as required to maximize the benefits from schooling (Hancock et al. 2013: 251). In semester 1 of 2016, the WA Department of Education indicated that only a total of 118 Aboriginal children in government primary schools and 64 in secondary schools were in attendance for more than 90% of the time out of a total enrolment of 1,080. The equivalent figures for all non-government schools combined were 115 students out of an enrolment of 526. Collectively, then, across the whole of the East Kimberley school system there were only around 300 students attending school for more than 90% of the time in 2016 out of a total enrolment of 1,606. That represented just 19% of enrolments—in effect, 19% of the school-age population. In line with the findings of Hancock et al. (2013), this group of some 300 individuals would therefore appear to present the best prospect for successful progression through the school system and on to further education and/or permanent employment. From Table 5.4, we can see that their numbers are distributed across the school system, but particular concentrations appear at the three District High schools as well as at Yiyili, Kalumburu and St Joseph’s primary in Kununurra. This leaves a sizeable group of some 1,300 individuals currently in the school system who are likely to require variable measures of support in order to maximise the benefits from education.

As far as a population measure of outcomes from schooling is concerned the main one available is from the census and it refers to the highest level of schooling completed for all adults in the population (Figure 5.6). This statistic summarises a wide range of schooling experiences, in rare cases dating back to the 1930s, and it essentially reflects the mix of current and historic schooling achievements, requirements and practices prevalent among the population at each census. From the 2001 census onwards we see the continuation of a steady decline over time in those reporting no schooling and a recent rise in school completions through to Year 12. However, in both LGAs, the peak year for having left school among all current adults in the region remains Year 10 while a large proportion of (older) adults still have less than Year 10 education, especially in Halls Creek.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

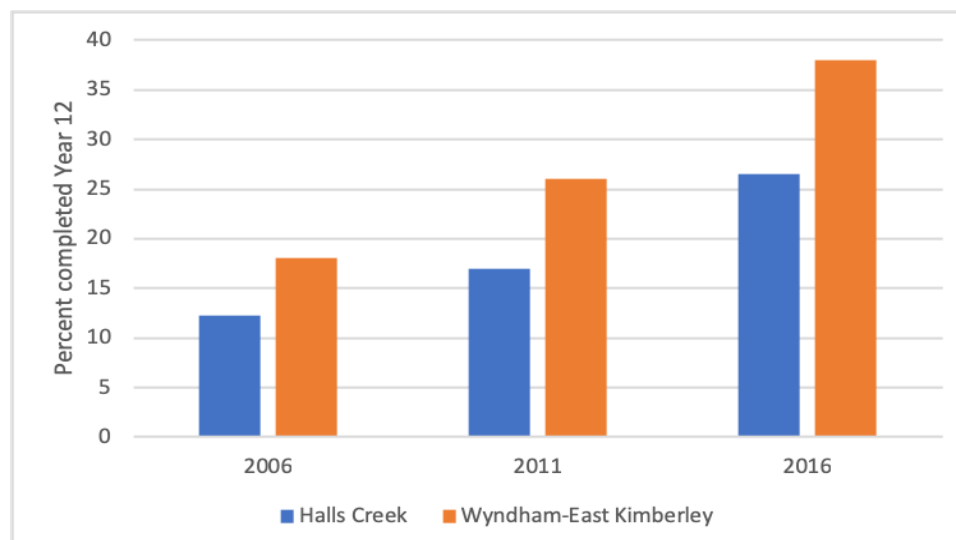
Figure 5.6 Highest level of schooling completed: Aboriginal adults in Halls Creek and Wyndham-East Kimberley LGAs, 2001-2016



Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

Not surprisingly, there are strong age-related distributions within these data. For example, most of those with no schooling, or just Year 8 completion, are aged over 55 years reflecting educational conditions that prevailed up to the 1960s. For an assessment of the more recent impact of education performance we need to focus attention on the age group that is immediately out of compulsory schooling (20-24 years). To illustrate this, Figure 5.7 shows the proportion of successive 20-24 year-old cohorts with Year 12 completion at the past three censuses. In Halls Creek LGA this proportion has risen steadily since 2006, though from a very low base of just 12%, and so by 2016 those with Year 12 still accounted for only one quarter of adults in their early 20s. In Wyndham-East Kimberley the same trend is evident but the proportions are higher in each census year reaching almost 40% of young adults by 2016. Despite rising in recent years, these Aboriginal rates of Year 12 completion remain substantially behind the equivalent 2016 figure of 66% for non-Aboriginal young adults in the East Kimberley.

Figure 5.7 Percent of Aboriginal 20-24 year-olds with Year 12 completion: Halls Creek and Wyndham-East Kimberley LGAs, 2006-2016

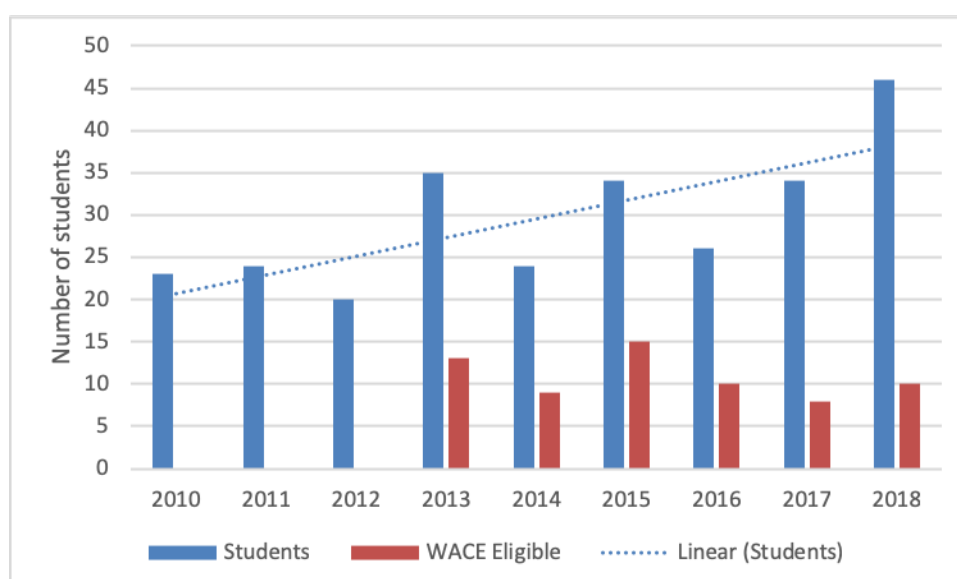


Source: ABS Census of Population and Housing 2006, 2011 and 2016

Actual Year 12 Aboriginal enrolments in government schools in the East Kimberley are shown in Figure 5.8 for the period 2010-2018 using data supplied by the WA Department of Education (senior secondary students proceeding to Year 12 from catholic schools either attend one of the government District High schools in the East Kimberley or travel elsewhere, usually to the south west of WA). Also included is the number of students each year deemed eligible to sit for the Western Australian

Certificate of Education (WACE) having met the School Curriculum and Standards Authority requirements for eligibility. As shown, while Year 12 enrolments have fluctuated somewhat, there has been a trend towards increased numbers over time with an annual average of 30. Unfortunately, single year estimates of Aboriginal population do not exist but using the ABS five-year age group estimates as a guide, there could be around 112 Aboriginal youth aged 17 years. This would suggest that only around 27% of the eligible age group are enrolled in Year 12 although, as we have seen, it is not known precisely how many students from the East Kimberley undertake Year 12 studies elsewhere and there is a need for improved tracking and reporting of students throughout the entire education system.⁴ As for those eligible for WACE these are much fewer in number and have averaged only 11 per annum and only since 2013.

Figure 5.8 Aboriginal Year 12 and WACE eligible students: East Kimberley public schools 2010-2018



Source: Government of Western Australia Department of Education

Outcomes

Aside from receipt of the Year 12 Western Australian Certificate of Education alongside its associated Vocational Education and Training (VET) and Australian Tertiary Admission Rank (ATAR) qualifications, educational outcomes from the school system are measured by the National Assessment Program—Literacy and Numeracy (NAPLAN) administered by the Australian Curriculum Assessment and Reporting Authority (ACARA).

Prior to the first NAPLAN tests in 2008, each state and territory managed its own literacy and numeracy testing. In Western Australia this was the Western Australia Literacy and Numeracy Assessment (WALNA) program. In Taylor (2004), results from this program in 2002 for numeracy, reading, writing and spelling were provided for Aboriginal students at school-years 3, 5 and 7. However, these referred only to schools

⁴ There is no perfect match between Year 12 enrolment and single year age with those in Year 12 probably spanning ages from 17 through to 19. It is likely, therefore, that this figure of 27% is at the high end even discounting students who might be enrolled outside of the region. It should also be noted Department of Education data show no Aboriginal students in Years 11 and 12 over this period acquiring a Notice of Arrangement to leave school and engage in a full-time course at TAFE or with a private RTO, in a traineeship or apprenticeship, in full-time or part-time employment and/or in part-time training.

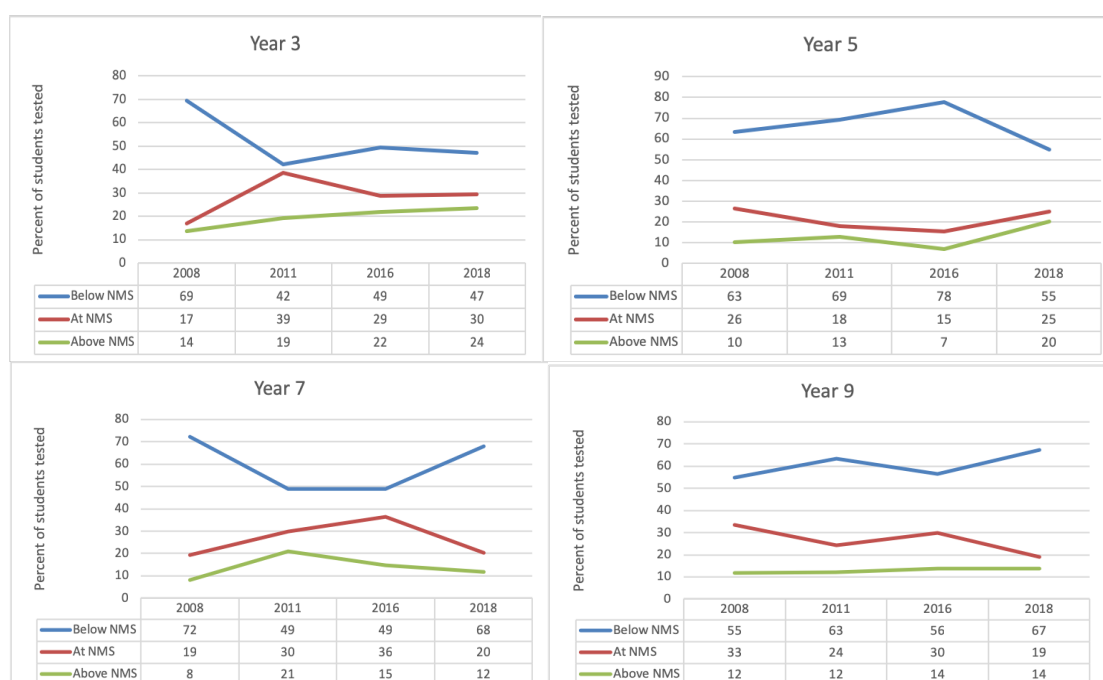
Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

in Wyndham-East Kimberley and the northern half of Halls Creek LGA and they were based on the WALNA, rather than NAPLAN, methodology. Since 2008, we now have detailed results based on a consistent methodology for the whole East Kimberley region for the period 2008-2018, including for Year 9. Using these data, Figures 5.9 to 5.12 show the achievements of Aboriginal students in East Kimberley schools against National Minimum Standards (NMS) achieved by all other students across Australia according to whether the NAPLAN scores achieved by East Kimberley students are above, at, or below NMS levels. These results are exclusive of students who were either exempt from, absent for, or withdrawn from the assessment.

Looking at the curves for reading in government schools (Figure 5.9), there are some signs of improvement since 2008 at Years 3 and 5 in government schools although the proportions below NMS have remained high. Year 7 results began to shift in the right direction but appear to have fallen back again, while the Year 9 trend is less encouraging since the rate of achievement above NMS has remained very low and the proportion below NMS is high and rising.

Results for Catholic schools are more definitive (Figure 5.10). Years 3 and 5 results show signs of improvement but Year 7 results have deteriorated sharply and Year 9 results have been almost universally below national minimum standards.

Figure 5.9 Proportion of Aboriginal students* below, at, and above NAPLAN National Minimum Standards (NMS) for reading by school year: East Kimberley government schools, 2008-2018

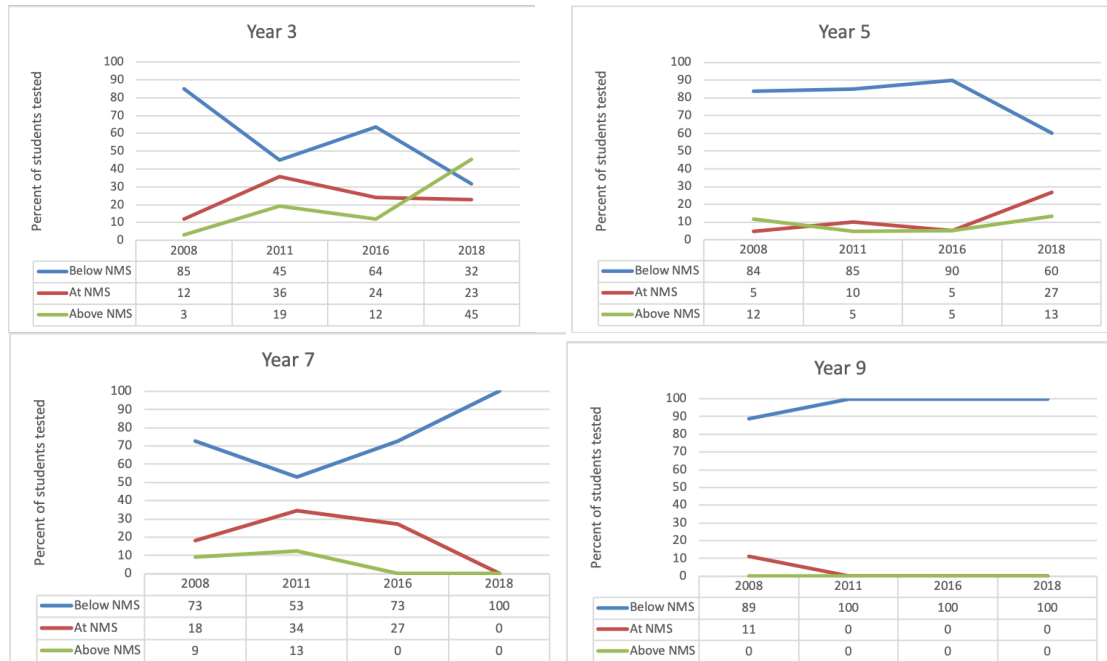


Source: WA Department of Education

* excludes students who were either exempt from, absent for, or withdrawn from the assessment.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Figure 5.10 Proportion of Aboriginal students* below, at, and above NAPLAN National Minimum Standards (NMS) for reading by school year: East Kimberley Catholic schools 2008-2018

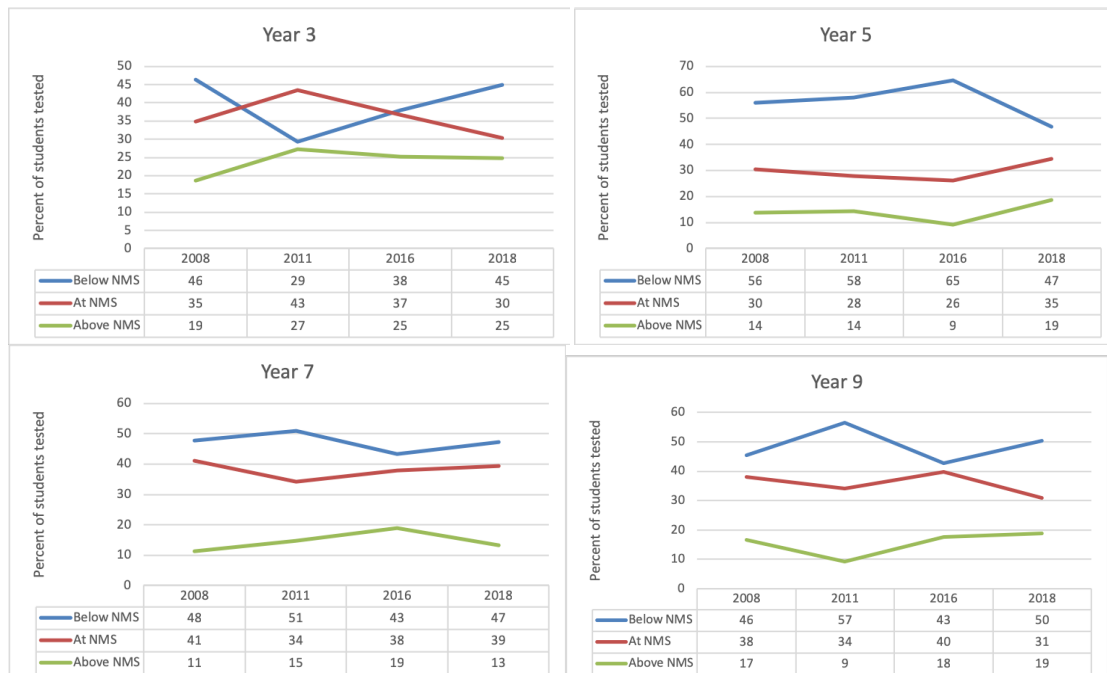


Source: Catholic Education Western Australia

* excludes students who were either exempt from, absent for, or withdrawn from the assessment.

As for numeracy (Figures 5.11 and 5.12), Year 3 results in government schools appear to have gone backwards, Year 5 results have been more promising, whereas Year 7 and Year 9 results seem to have plateaued at between 10-20% above NMS, 30-40% at NMS and 40-50% below NMS. In Catholic schools, trends for Years 3, 5 and 7 all appear positive but Year 9 results appear incomplete.

Figure 5.11 Proportion of Aboriginal students* below, at, and above NAPLAN National Minimum Standards (NMS) for numeracy by school year: East Kimberley government schools, 2008-2018

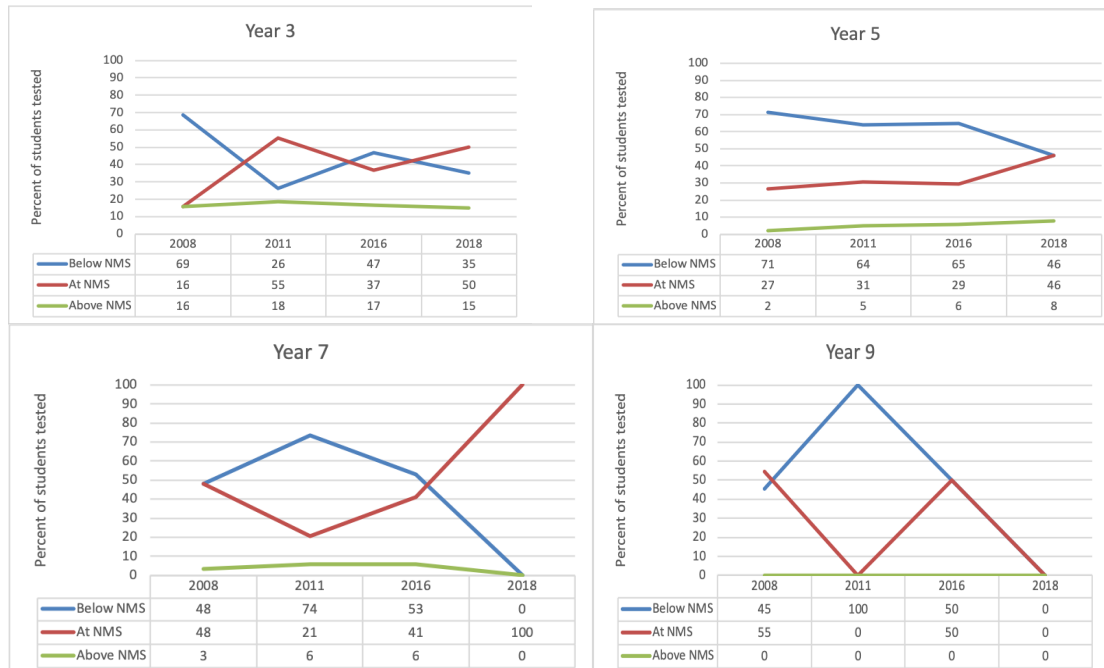


Source: WA Department of Education

* excludes students who were either exempt from, absent for, or withdrawn from the assessment.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Figure 5.12 Proportion of Aboriginal students* below, at, and above NAPLAN National Minimum Standards (NMS) for numeracy by school year: East Kimberley Catholic schools 2008-2018



* excluding students who were either exempt from, absent for, or withdrawn from the assessment.
 Source: Catholic Education Western Australia

Of course, all of these results refer only to students in four out of 12 school grades as well as to those who actually participated in testing. In terms of overall enrolments in government schools in 2016, those in Years 3, 5, 7 and 9 accounted for only 36% of the total. In Catholic schools it was 33%. At the same time, it can be argued that results among these NAPLAN cohorts drawn from one-third of the Aboriginal student population and spread, as they are, across the school-age distribution, provide a reasonably good representative sample of the likely performance of the entire student population in relation to similar testing were it available to each school year. On this basis, we can use these NAPLAN results to establish crude estimates of the overall number of Aboriginal students in both systems who are likely to be capable of achieving at or above National Minimum Standards.

This is done by calculating a set of average outcome rates for 2016 for those across the NAPLAN testing years and then applying these to the whole regional school population (Table 5.5). This reveals that an estimated 130 Aboriginal students enrolled across the school system in 2016 might have been capable of achieving above NMS in numeracy and 104 in reading. A further 332 are likely to have been performing at NMS level in numeracy and 217 in reading. Together, those achieving at or above NMS level in numeracy probably accounted for 29% of all enrolments while the equivalent figure for reading was 20%. Of course, this means that the vast majority of students (71% for numeracy and 80% for reading) are likely to achieve either below NMS levels or to not participate in NAPLAN testing at all. While no direct association can be established, at least not from available data, it is interesting to note that the estimates of students achieving at or above NMS levels are broadly equivalent to the figure of 304 students attending school more than 90% of the time, two-thirds of whom were in government schools (Table 5.4).

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

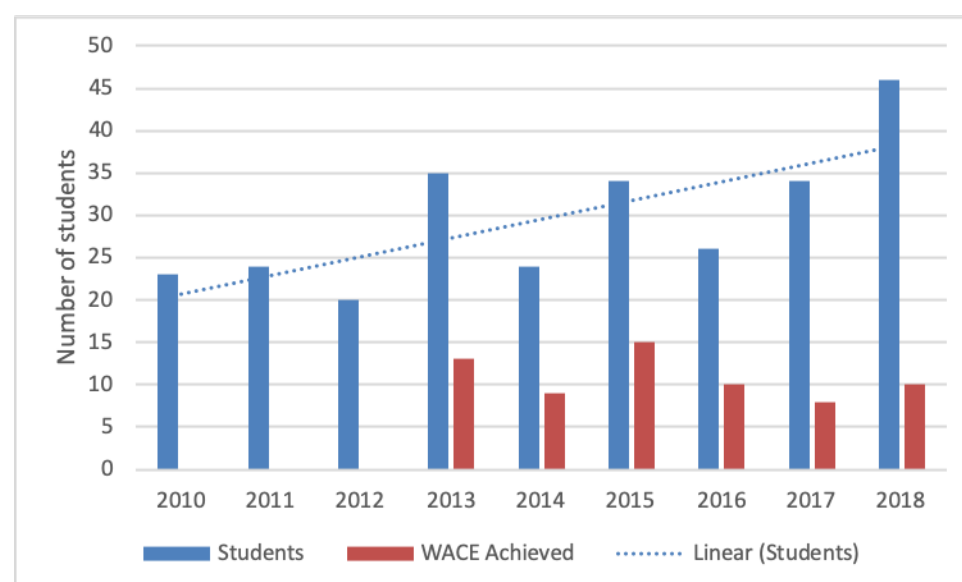
Table 5.5 Crude estimates of the number of Aboriginal students achieving below, at and above National Minimum Standards (NMS) in NAPLAN numeracy and reading tests: East Kimberley schools, 2016

	Numeracy	% of total enrolment	Reading	% of total enrolment
Above NMS	130	8.0	104	6.4
At NMS	332	20.6	217	13.4
Below NMS	446	27.6	605	37.4
Total participating in NAPLAN	909	56.3	926	57.3
Total not participating	706	43.7	689	42.7
Total enrolments	1,615		1,615	

Source: Author calculations based on data from the WA Department of Education and Catholic Education WA

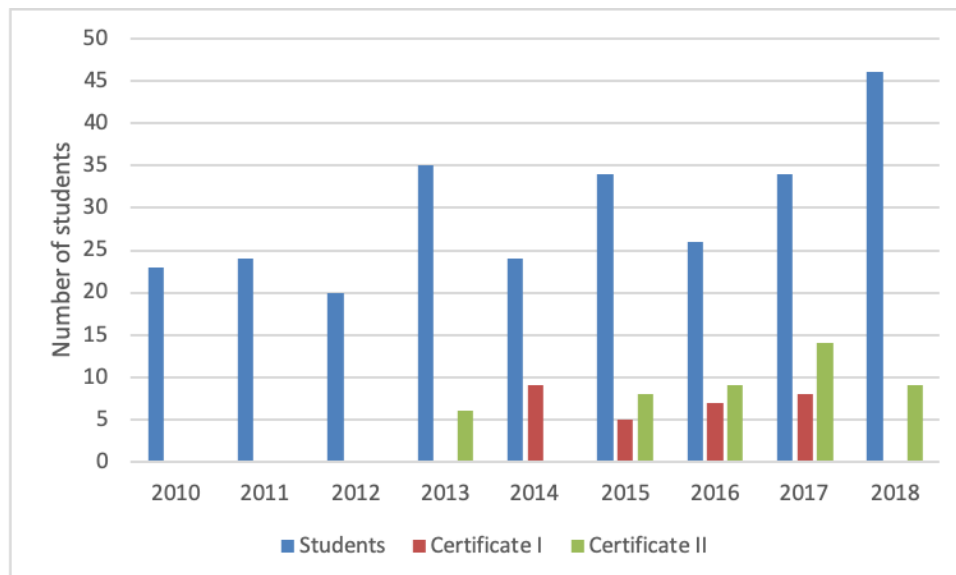
As for Year 12 outcomes, the Western Australian Certificate of Education (WACE) is awarded to senior secondary school students who satisfy its requirements. It is a senior secondary certificate recognised nationally in the Australian Qualifications Framework (AQF). Generally, students will complete two years of senior secondary study to achieve the WACE although the School Curriculum and Standards Authority allows students to meet the WACE requirements over a lifetime. The WACE is recognised by universities, industry and other training providers. Achievement of a WACE signifies that a student successfully met the breadth and depth standard, the achievement standard and the literacy and numeracy standard in their senior secondary schooling. Figure 5.13 shows the number of Aboriginal students in East Kimberley government schools enrolled in Year 12 and achieving WACE for each year between 2010 and 2018.

Figure 5.13 Aboriginal Year 12 enrolments and WACE outcomes: East Kimberley government schools 2010-2018



Source: WA Department of Education

Figure 5.14 Aboriginal Year 12 enrolments and Certificate I and II attainment: East Kimberley government schools 2010-2018



Source: WA Department of Education

As we can see, those eligible for WACE are only a fraction of overall enrolments, and those who go on to actually acquire WACE certification are fewer still with only 26 such instances recorded in the Department of Education data since 2013. In most years since 2010 there have been none. However, some Year 12 students also undertake vocational studies as part of their WACE requirements at Certificate I and II levels and these are shown in Figure 5.14. Once again, the numbers acquiring school-based certificate-level qualifications represent a small fraction of overall enrolments with only 29 individuals achieving Certificate I since 2010 and 46 achieving Certificate II. Others can opt to leave school before Year 12 via a Notice of Arrangement to leave school and engage either in a full-time course at TAFE or with a private RTO, in a traineeship or apprenticeship, in full-time employment or in part-time employment and/or part-time training all of which can lead to alternate qualifications. However, the data show only 6 Aboriginal students taking this option over the entire period 2010-18.

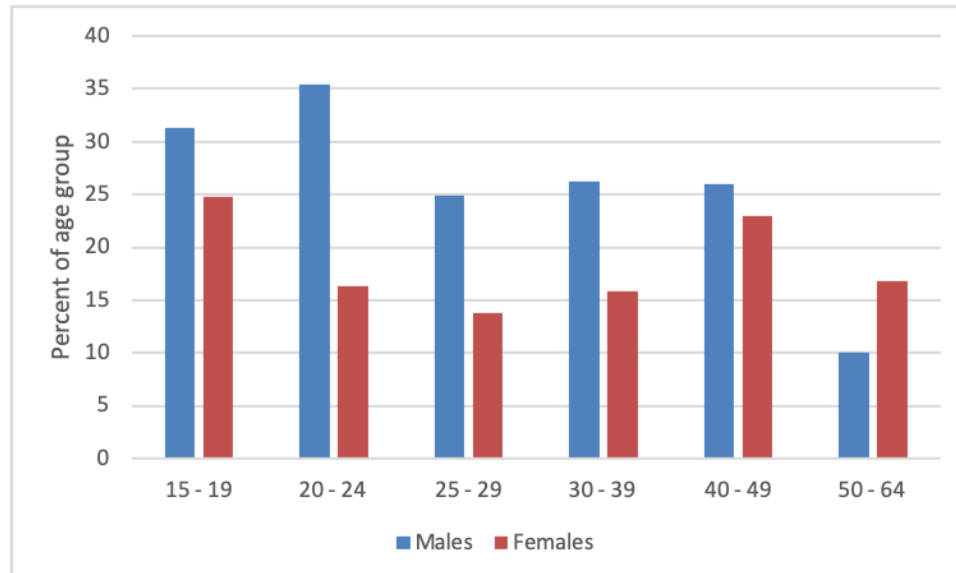
Participation in vocational education and training (VET)

Post-secondary education and training leading to the acquisition of formal workplace qualifications is available in the East Kimberley from a variety of public and private providers including TAFE campuses at Halls Creek, Kununurra and Wyndham as well as VET in schools. In 2016 Kimberley Group Training alone had apprentices and trainees from Kalumburu, Wyndham, Home Valley Station, Kununurra, Argyle Diamond Mine, Warmun, Halls Creek, Billiluna and Mulan. Given these various training delivery sites, plus the possibility of East Kimberley residents enrolling in VET courses outside of the East Kimberley and the fact that students can enrol in more than one course in more than one location, it is difficult to establish a fully reliable time series of participation. Having said that, we do know that the number of individual Aboriginal VET students with a usual residence address in the East Kimberley was 780 in 2016. This was somewhat less than the figure of 878 in 2011 but essentially the same as the number of 791 in 2006. As a proportion of the regional Aboriginal population aged 15-64 years, VET clients accounted for 20% in 2016. The number of Aboriginal adults aged 15-64 enrolled in a VET course more than doubled over the 15-year period

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

from 578 in 2001 (Taylor 2004: 56) to 1,307 in 2016. This represented an increase in the rate of participation in VET among those aged 15-64 years from 16% to 23%.

Figure 5.15 Aboriginal male and female VET students as a percent of age group: East Kimberley residents, 2016.

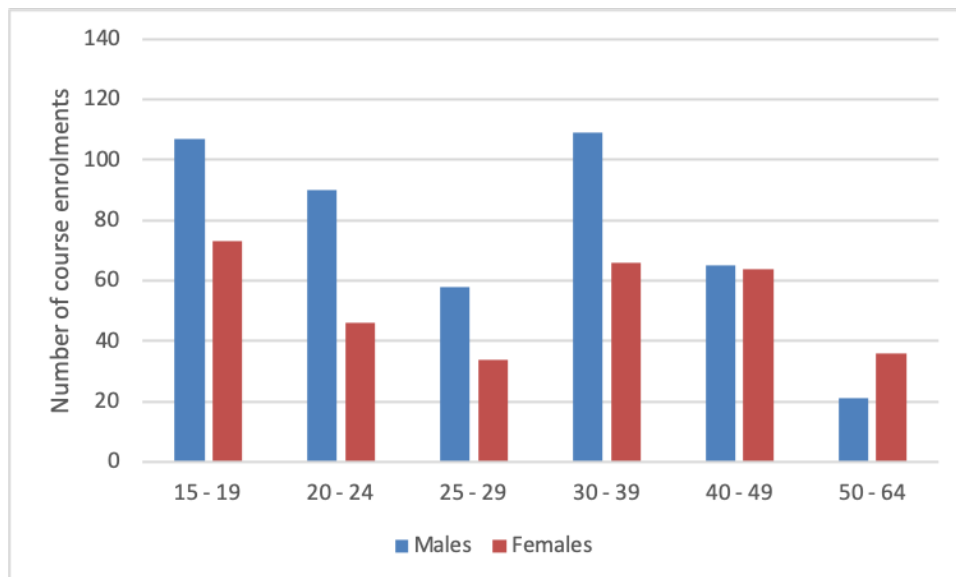


Source: WA Department of Training and Workforce Development

As for participation rates in VET, Figure 5.15 shows the number of individual male and female Aboriginal students as a proportion of various age groups in 2016. Once again, this shows that males are more likely to be VET students than females at all ages. Right through to age 49, at least 25% of Aboriginal males are recorded as a VET student whereas participation for females tapers off rapidly to below 15% by age 29 but picks up again in later years to finally exceed the male rate among those aged 50-64.

Since individuals can (and do) enrol in more than one course, enrolments are invariably higher than student numbers—approximately 50% higher. From Figure 5.16 we can see that the number of Aboriginal enrolments varies by age and sex. They have been consistently highest among males and they peak among those in the 15-19 and 30-39 age groups and taper off from each of these points at subsequent ages. It should be noted that course enrolment data for 2016 include enrolments in the Course in Applied Vocational Study Skills (CAVSS) and the Course in Applied Vocational Study Skills (USIQ). In 2016, there were around 200 such enrolments in the East Kimberley. These are dual-enrolment courses designed to be delivered in an integrated manner in a dual enrolment with a ‘parent’ vocational training course or training package qualification. CAVSS is a framework for teaching adult literacy and numeracy skills in direct application to VET training activities. USIQ aims to address the different categories of students who may require additional time and specialised teaching to successfully complete an industry specific vocational qualification. To some extent CAVSS and USIQ act to inflate enrolment numbers.

Figure 5.16 Aboriginal VET course enrolments: East Kimberley residents, 2016.



Source: WA Department of Training and Workforce Development

Notes:

Enrolments are based on a combination of course identifier, student identifier, training type and training delivery location. They include TAFE – all VET, ACE and higher education enrolments, publicly funded and fee for service; VET enrolments of the Western Australian Academy of Performing Arts; VET enrolments of the Broome campus of Notre Dame University; Department funded VET contracted to private (and other) providers; VET prison training reported by the WA Department of Corrective Services; VET in school enrolments reported by the Schools Curriculum Standards Authority.

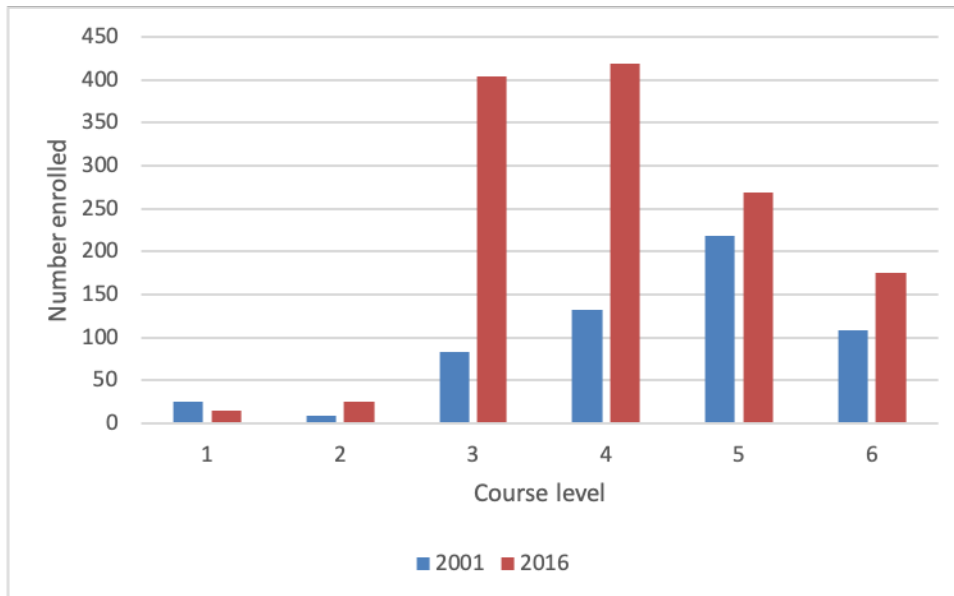
All data are based on ‘End of Study’ reporting. This method is used for standard reporting and applies the rule that subject enrolments are counted only when they have been completed. They are attributed to the year in which a final outcome is reached.

Regarding the type of courses enrolled in, there are eight levels of qualification in the VET system all linked to the Australian Qualifications Framework (AQF). In general terms, Certificates I and II offer skills and knowledge to get individuals started in an entry-level job; Certificates III and IV and Diploma levels are for more specialised jobs such as those in trades or technology areas; and Advanced Diploma to Graduate Diploma levels offer a more complex and higher level of skills and knowledge. There were virtually no Advanced or Graduate Diploma level enrolments in the East Kimberley and so this category is left out of the analysis.

Figure 5.17 shows the distribution of Aboriginal enrolments by these course levels in 2001 and 2016. Apart from diploma level, there has been an increase in enrolments at all course levels but especially in Certificate II and III courses. Figure 5.18 shows the same data for non-Aboriginal adults. Here we see a shift away from Certificate I and II courses mainly towards Certificate III courses, but also Certificate IV and diploma courses. In effect, Aboriginal people have been raising the skill level of their VET enrolments but in an environment where skill levels generally have been rising. One observation regarding these course enrolment data, including their distribution by age group, is their broad of correspondence with census data on engagement in employment, education and training shown in Table 3.8 and Figure 3.4.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Figure 5.17 Aboriginal VET course enrolments by course level, East Kimberley residents 2001 and 2016

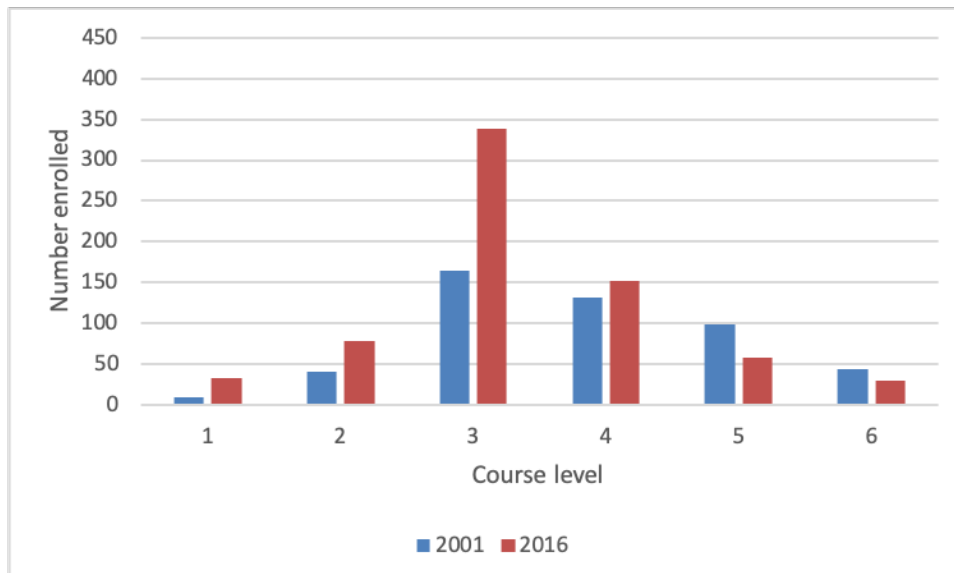


Source: Taylor (2004: 56); WA Department of Training and Workforce Development

1. Advanced diploma/diploma; 2. Certificate IV; 3. Certificate III; 4. Certificate II; 5. Certificate I; 6. Statement of attainment not identifiable

Note: The 2016 data include enrolments in the Course in Applied Vocational Study Skills (CAVSS) and Course in Applied Vocational Study Skills (USIQ). In 2016, there were around 200 such enrolments in the East Kimberley. They do not result in a separate qualification and are reported under ‘Statement of Attainment Not Identifiable by Level’.

Figure 5.18 Non-Aboriginal VET course enrolments by course level, East Kimberley residents 2001 and 2016



Source: Taylor (2004: 56); WA Department of Training and Workforce Development

1. Advanced diploma/diploma; 2. Certificate IV; 3. Certificate III; 4. Certificate II; 5. Certificate I; 6. Statement of attainment not identifiable

Note: The 2016 data include enrolments in the Course in Applied Vocational Study Skills (CAVSS) and Course in Applied Vocational Study Skills (USIQ). In 2016, there were around 200 such enrolments in the East Kimberley. They do not result in a separate qualification and are reported under ‘Statement of Attainment Not Identifiable by Level’.

VET Outcomes

To measure performance in the VET sector, the WA Department of Training and Workforce Development has identified a number of key performance measures related to efficiency, effectiveness and quality. In relation to the effectiveness of the training system, the key indicator is the rate of successful completion of modules—the components from which courses are constructed. Table 5.6 shows the distribution of module outcomes for Aboriginal males and females in 2001 and 2016. Successful outcomes include competency achieved/pass, recognition of prior learning, and non-assessable enrolments satisfactorily completed. In 2001, males successfully completed 54% of modules and females completed 71%. By 2016, male and female completion rates were the same with male rates rising to 64% and female rates falling to 64%. Among non-successful outcomes there has been a substantial increase in students withdrawing from modules as opposed to failing.

Table 5.6 Aboriginal male and female VET module outcomes: East Kimberley residents 2001 and 2016

Outcome	Males		Females	
	2001	2016	2001	2016
Successfully completed*	54.1	64.1	71.4	63.6
Failed	21.1	1.8	12.0	2.5
Withdrawn	24.8	34.1	16.6	33.9
Total	100.0	100.0	100.0	100.0

Sources: Taylor (2004: 57); WA Department of Training and Workforce Development

* includes Competency Achieved/Pass; 2. Recognition of Prior Learning; 3. Non-Assessable Enrolment - Satisfactorily Completed;

Excludes those enrolled in modules who are continuing studies into the next collection period and Indigenous status not stated.

The module load completion rate (MLCR) provides another measure of performance. This represents the sum of student curriculum hours for successfully completed modules expressed as a proportion of the total student curriculum hours across all module enrolments. In 2001, this rate was only 52% for Aboriginal module enrolments—around two-thirds of the level reported for non-Aboriginal students in the East Kimberley at the time (Table 5.7). By 2016, the rate for Aboriginal students had increased to 61% but this was still almost one-third lower than for other students; it is also considerably lower than the rate for Aboriginal students generally in Western Australia which was 77% in 2015 (Government of Western Australia 2017: Map 12).

Table 5.7 Aboriginal and non-Aboriginal Module Load Completion Rates: East Kimberley residents 2001 and 2016.

	2001	2016
Aboriginal	52.4	60.8
Non-Aboriginal	77.3	87.3

Source: Taylor (2004: 57); WA Department of Training and Workforce Development

Apprenticeships and traineeships

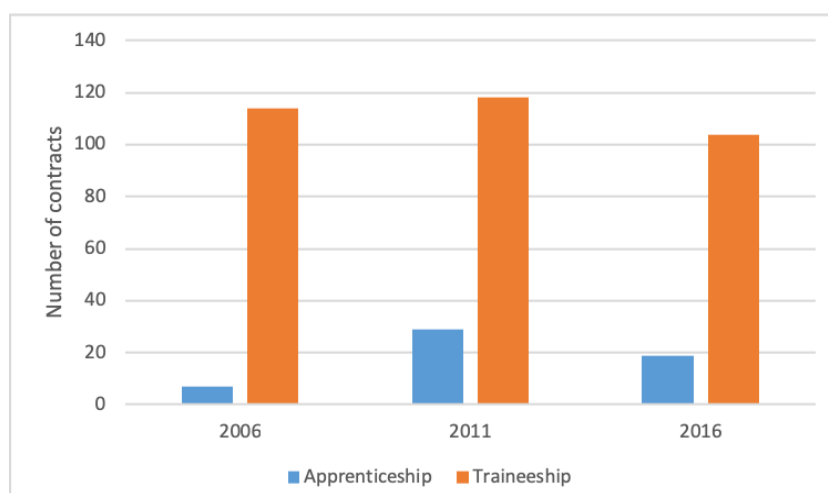
One means by which individuals can secure a nationally-recognised qualification is by entering into a contract with a 'host' employer for an apprenticeship or traineeship—in effect, to undertake on-the-job training. In the East Kimberley, Kimberley Group Training (KGT) has been the main Group Training Organisation connecting Aboriginal people across the region with host worksites and arranging for individuals to enter into employment contracts. They also provide personal support to overcome obstacles as

required including through the use of pre-employment programs in numeracy, literacy and employability skills. In 2016 KGT had apprentices and trainees based across the region including in Kalumburu, Wyndham, Home Valley Station, Kununurra, Argyle Diamond Mine, Warmun, Halls Creek, Billiluna and Mulan but their main business over recent years has been with ADM. As we have seen, ADM has been a significant employer site for apprentices and trainees since the early 2000s but placements can occur across the full range of local industries.

In order to monitor the end product of all of these sorts of employment services, details of all contracts entered into for an apprenticeship or traineeship at an employer site within the State are entered into the Western Australian Apprenticeship Management System (WAAMS) administered by the Department of Training and Workforce Development. These include the number of commencements and cancellations/withdrawals as well as the demographic characteristics of individuals involved and the trade category of their host employer. The number of employer sites in the East Kimberley that provide for the data reported here has varied over time from 41 in 2006, to 64 in 2011 and 48 in 2016. These include schools providing VET training.

The number of Aboriginal people commencing an apprenticeship or traineeship at one of these employer sites in the East Kimberley is shown in Figure 5.19 for the 12-month period preceding March 31st in 2006, 2011 and 2016. Clearly, there are far more traineeships commencing each year than there are apprenticeships with 104 of the former and 19 of the latter in 2016. The number of people commencing an apprenticeship appears to have fluctuated over time but has generally risen since 2006, albeit with numbers still relatively small. Commencements in traineeships, however, have been more consistent over time averaging around 112 for the selected years.

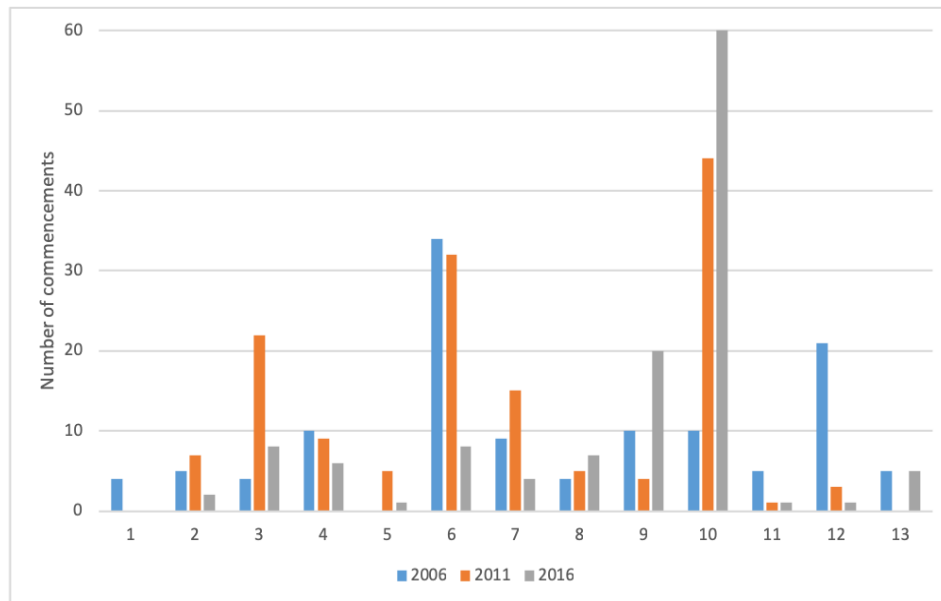
Figure 5.19 Aboriginal Apprenticeship and Traineeship commencements: East Kimberley employer sites 2006, 2011 and 2016.



Source: WA Department of Training and Workforce Development

Figure 5.20 shows these commencements by trade category and reveals a good deal of variation over time no doubt influenced by shifts in regional labour demand. Thus, in 2006, most commencements were in finance and property services as well as utilities, electrotechnology and printing; in 2011, there was a focus on building and construction, finance and property services, and primary industry; and in 2016 there was a concentration of commencements in primary industry followed by the mining industry.

Figure 5.20 Aboriginal Apprenticeship and Traineeship commencements by trade category: East Kimberley employer sites 2006, 2011 and 2016.



Source: WA Department of Training and Workforce Development

1. Arts, Sport & Recreation; 2. Automotive; 3. Building & Construction; 4. Community Services, Health & Education; 5. Electrical; 6. Finance, Property & Business Services; 7. Hospitality & Tourism; 8. Metals, Manufacturing & Services; 9. Mining Industry; 10. Primary Industry; 11. Transport & Storage; 12. Utilities, Electrotechnology & Printing; 13. Wholesale, Retail & Personal Services

However, commencements data form only part of a stock and flow matrix since for each commencement there are two possible outcomes—individuals either progress through to completion or they do not. This latter outcome is either because they withdraw from their contract or the contract is terminated by their employer before completion. Since these events unfold over varying periods of time, completions and cancellations cannot be read as subsets of commencements in each year—they are simply events that occur in, or are reported for, the same year. Indeed, their particular commencement is more than likely to have been in a previous year.

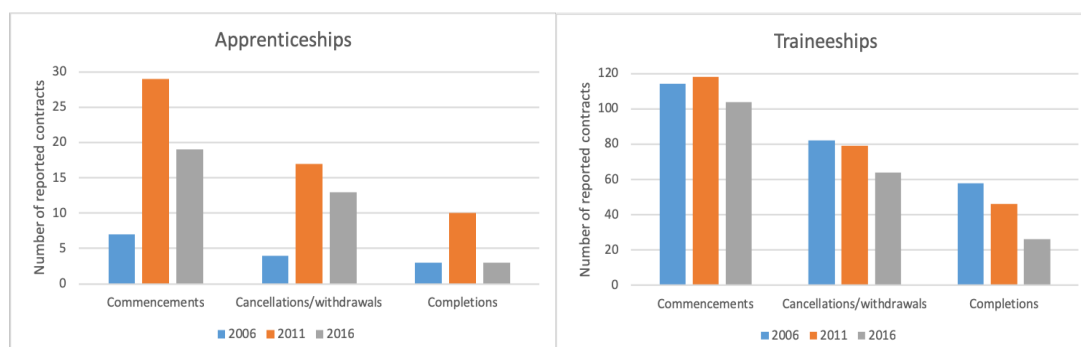
An essential statistic, then, is the number of individuals actually in training at any given time. This effectively provides the stock of apprentices and trainees as a cross-section through the matrix. As at March 31st 2006, there were a total of 34 Aboriginal apprentices in training in the East Kimberley and 70 trainees; on the same date in 2011 the equivalent figures were 47 and 67; in 2016 they were 33 and 92. Given these overall numbers for the region, it is clear from the data on apprenticeships and traineeships at ADM reported in chapter 3 that the mine has provided a substantial share of regional training positions over time, especially apprenticeships. They accounted for as much as 40% of all Aboriginal people in an apprenticeship as at March 31st 2011, and 36% in 2016. By contrast, the number of traineeships at ADM on these same dates was far fewer accounting for just 9% of the regional total in 2011 and just 3% in 2016.

The proportion of the Aboriginal population aged 15-64 years that is in training at any one time is actually quite small. Overall in the East Kimberley this has been a fairly stable proportion at between 2.8% and 3.4% over the ten-year period from 2006. As might be expected, the proportions among younger age cohorts have been somewhat higher but they still constitute only a fraction of the population with the highest rates ranging from 7.4% to 6.1% recorded among 20-24 year olds.

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As far as flow data are concerned, it is clear from Figure 5.21 that not all apprentice and trainee commencements progress through to completion. More often than not they are terminated or people withdraw. For example, over the 12-month period up to 31st March 2016, a total of 19 Aboriginal apprenticeships commenced, 13 were cancelled and just 3 were completed. Equivalent figures for traineeships were 104, 64 and 26. While cancellations and withdrawals appear to have fallen over time, so too have completions. Overall the relationships between these outcomes are best expressed as a ratio as shown in Table 5.8. This reveals that the level of cancellations relative to commencements each year has been fairly stable over time for both apprenticeships and traineeships ranging between 0.57 and 0.72. Completions, on the other hand, appear to have fallen considerably as a ratio, especially among apprentices. In 2006, the ratio of completions to commencements was 0.43 for apprenticeships; for traineeships it was 0.51. In other words, only about half of all apprentices continued through to completion. By 2016, however, these ratios had fallen considerably to just 0.16 for apprentices and 0.25 for traineeships.

Figure 5.21 Aboriginal Apprenticeship and Traineeship commencements, cancellations/withdrawals and completions: East Kimberley employer sites 2006, 2011 and 2016.



Source: WA Department of Training and Workforce Development

Table 5.8 Ratios of Aboriginal Apprenticeship and Traineeship cancellations and completions to commencements: East Kimberley employer sites 2006, 2011 and 2016

	Apprenticeships		
	2006	2011	2016
Ratio of cancellations to commencements	0.57	0.59	0.68
Ratio of completions to commencements	0.43	0.34	0.16
	Traineeships		
	2006	2011	2016
Ratio of cancellations to commencements	0.72	0.67	0.62
Ratio of completions to commencements	0.51	0.39	0.25

Source: WA Department of Training and Workforce Development

Qualifications

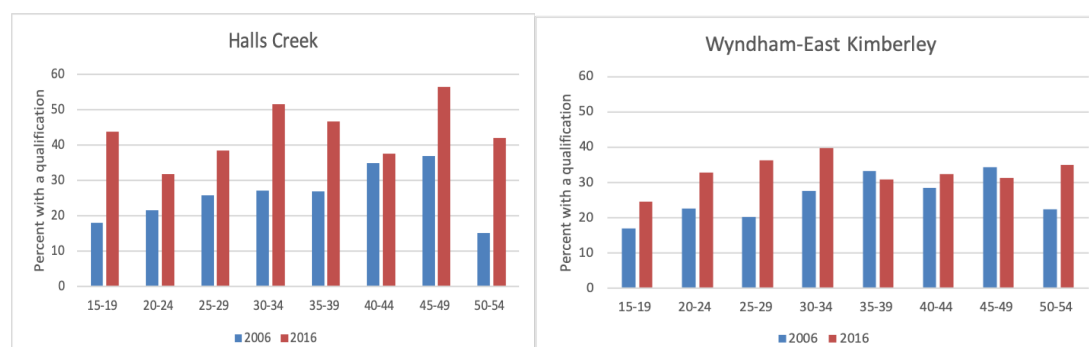
A key human capital requirement in the regional labour market, and one that has assumed greater significance for Aboriginal workers following the demise of the CDEP scheme, is the acquisition of formal vocational and higher education level qualifications. While program data can reveal course enrolments and completions each year, it remains the case that the five-yearly census provides the only comprehensive set of data that reveals the levels of such qualification across the population as a whole.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Over recent decades there has been an increased demand for vocational and higher education qualifications across many industries as the complexity of work tasks has increased. This has resulted in a steady increase in the proportion of the working-age population with non-school qualifications and Aboriginal people have shared in this growth. On the ABS census form, Q.28 asks: ‘Has the person completed any educational qualification (including a trade certificate)?’—in Halls Creek LGA almost half (44%) of Aboriginal people aged 15-19 years answered yes to this question in 2016 compared to just 25% in Wyndham-East Kimberley. In fact, higher rates were reported in Halls Creek than Wyndham-East Kimberley for nearly all age groups between 15 and 64 (Figure 5.22). However, as much as 70% of those claiming a non-school qualification in Halls Creek did not indicate the level of their qualification compared to 47% in Wyndham-East Kimberley. While both of these non-response rates are high, the rate in Halls Creek LGA is very high and they both leave considerable doubt over the utility of census data as a measure of the true level and nature of post-school qualification in the population. At the very least these data should be treated with a good deal of caution.

Nonetheless, the essential message from Figure 5.22 is that the proportion of all age groups that have a non-school qualification has risen since 2006 with substantial increases in some age groups such as among 15-19 year-olds in Halls Creek and 25-29 year-olds in Wyndham-East Kimberley. Having said that, the overall gap in the acquisition of qualifications between Aboriginal adults in the East Kimberley and others in the 15-64 year age group remains substantial (39% of Aboriginal adults compared to 67% among other residents), and this in a regional labour market where 64% of people in employment in 2016 had some form of non-school qualification. If this rate is applied to the 2016 estimate of the Aboriginal population aged 15-64 it suggests a total of 1,512 individuals with a post-school qualification, of these only 605 were employed.

Figure 5.22 Percent of Aboriginal adults with a non-school qualification by age group: Halls Creek and Wyndham-East Kimberley LGAs, 2006 and 2016



Source: ABS Census of Population and Housing 2016

Regarding the level of qualifications acquired, confidence in the data is once again undermined by consistently high and rising non-response rates. However, on the assumption that this non-response is distributed in equal proportion across the different qualification levels we can conclude from Figure 5.23 that the growth in Aboriginal adults with qualifications since 2001 has occurred mostly at the Certificate level. Of particular note is the fact that the number of Aboriginal adults in the East Kimberley who indicated in the census that they had a Certificate III or IV increased substantially between 2001 and 2016 from 93 to 258. As a consequence, 51% of Aboriginal adults who indicated that they had a qualification in 2016 had a Certificate III or IV, a figure

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that was up from 16% in 2001. Similar improvement in qualification levels has occurred among non-Aboriginal residents with their combined proportion with diplomas and degrees now around 56%. This latter percentage is much higher than the figure of 18% among Aboriginal residents and it underlines the degree of competition faced by Aboriginal residents in the East Kimberley labour market. In short, while qualification levels have improved since 2001 among Aboriginal East Kimberley residents, they remain notably behind the rest of the population.

Figure 5.23 Distribution of Aboriginal adults by level of highest non-school qualifications: Halls Creek and Wyndham-East Kimberley LGAs, 2001-2016



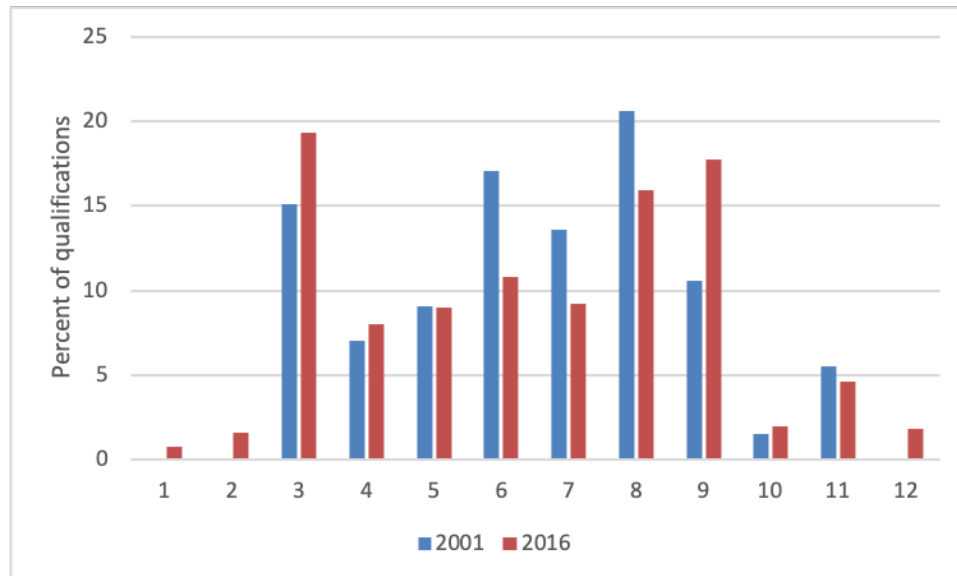
Source: ABS Census of Population and Housing 2001, 2006, 2011 and 2016

Note: Degree includes Postgraduate, Graduate Diploma/Graduate Certificate and Bachelor Degree; Diploma includes Advanced Diploma/Diploma; Certificate includes Certificate levels I, II, III and IV.

As for the field of study for Aboriginal adults with qualifications, this has shifted since 2001 as shown in Figure 5.24. Most qualifications in 2001 were in management and commerce followed by health and then engineering and related technologies. By 2016, engineering had taken over as the largest single grouping of qualifications followed by society and culture and management and commerce. Of greater interest, though, is a decline in the proportion of adults with qualifications in health, education and food, hospitality and personal services as their related industries are substantial regional employers. What hasn't changed is the heavily gendered nature of non-school qualification. Virtually all of those in 2016 with qualifications in 'engineering and related technology', as well as in 'architecture and building' and 'agriculture', were male, while three-quarters of those with qualifications in 'management and commerce', 'society and culture', 'health' and 'education' were female. These patterns of post-school training and outcomes serve to reinforce the structural break between Aboriginal men and women in their engagement with the regional labour market as demonstrated earlier.

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Figure 5.24 Distribution of highest non-school qualification by field of study: Aboriginal adults in the East Kimberley, 2001 and 2016



Source: ABS Census of Population and Housing 2016

1. Natural and Physical Sciences; 2. Information Technology; 3. Engineering and Related Technologies; 4. Architecture and Building; 5. Agriculture, Environmental and Related Studies; 6. Health; 7. Education; 8. Management and Commerce; 9. Society and Culture; 10. Creative Arts; 11. Food, Hospitality and Personal Services; 12. Mixed Field Programs

Excludes non-school qualification not stated and field of study inadequately described

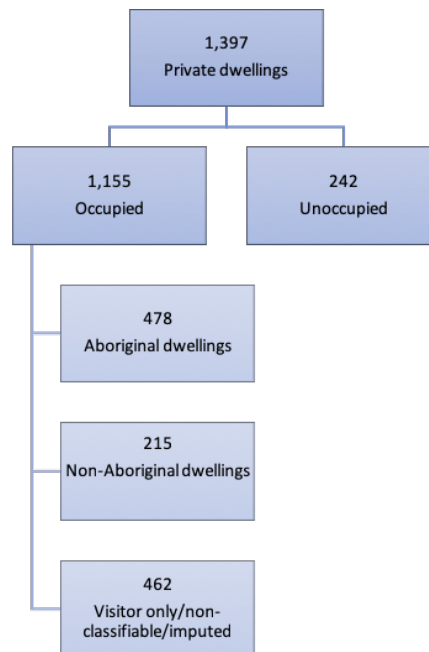
6. Housing and infrastructure

Housing stock

At the 2016 Census of Population and Housing, a total of 5,485 private dwelling structures were recorded in the East Kimberley (Figures 6.1 and 6.2). Of these, 4,675 were determined to be occupied. This represents an almost doubling of the number of occupied private dwellings in the East Kimberley since 2001. It should be noted that this figure does not include FIFO camps and other similar facilities as these are classified in the census as non-private dwellings under ‘staff quarters’. A total of 65 of these were recorded across the region. It is likely that this includes the 24-bed facility at the Burrealuba Yura Ngurra Workers Hostel in Halls Creek as well as Wunan House in Kununurra.

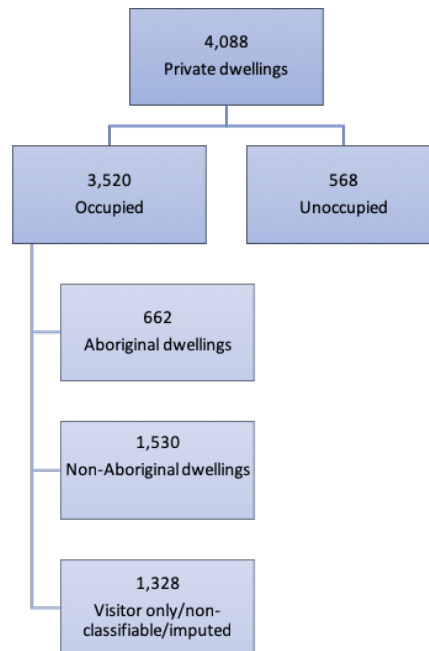
Figure 6.1 shows the number of private dwellings occupied by Aboriginal and non-Aboriginal households in Halls Creek LGA in 2016. Figure 6.2 shows the same for Wyndham-East Kimberley. An Aboriginal household is defined by the census as any household where at least one usual resident was identified as being of Aboriginal and/or Torres Strait Islander origin. Using this definition 41% of dwellings in Halls Creek LGA were Aboriginal dwellings compared to just 19% in Wyndham-East Kimberley.

Figure 6.1 Private dwellings by occupancy and Aboriginal household indicator: Halls Creek LGA, 2016



Source: ABS Census of Population and Housing 2016

Figure 6.2 Private dwellings by occupancy and Aboriginal household indicator: Wyndham-East Kimberley LGA, 2016



Source: ABS Census of Population and Housing 2016

At each census there has always been a relatively large number of private dwellings recorded as unoccupied in the East Kimberley. In 2016, in Halls Creek LGA, the proportion was 17%, in Wyndham-East Kimberley it was 14%. Across the region as a whole this amounted to 810 dwellings. In Table 6.1 we can see that the number of unoccupied dwellings more than doubled in Wyndham-East Kimberley between 2006 and 2016 while the number in Halls Creek has generally been less and more stable. As a consequence, at the 2016 census, Wyndham-East Kimberley had more than twice the number of unoccupied dwellings than Halls Creek. Unfortunately, the census cannot assign Aboriginal or any other status to these unoccupied dwellings, nor does it indicate the reason why they are unoccupied—whether this is because of the temporary absence of occupants, whether they are abandoned with no occupants at all, or whether they are awaiting a purchaser or rental tenant.

Table 6.1 Unoccupied dwellings: Halls Creek and Wyndham-East Kimberley LGAs, 2006, 2011 and 2016

	Halls Creek	Wyndham-East Kimberley	East Kimberley region
2006	189	230	419
2011	256	430	686
2016	242	568	810

Source: ABS Census of Population and Housing 2006, 2011 and 2016

Also, of note, is the large number (1,790) of visitor only/non-classifiable/imputed dwellings. This means that we have no data on the characteristics of persons living in more than one-third (38%) of occupied dwellings across the East Kimberley. Together with the dwellings deemed unoccupied this represents a substantial level of missing data from what, after all, is a census of population *and* housing. Given the scale of this issue, and the fact that these sorts of error seem to be growing over time, a separate investigation of underlying reasons should be conducted but this lies beyond the scope of the present exercise. It certainly begs the question of whether census data are adequate for the task of profiling the housing circumstances of Aboriginal people in the East Kimberley.

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From the data that are available, Tables 6.2 and 6.3 show the number of Aboriginal dwellings identified by the census within each LGA according to the structure of dwelling and collective number of residents with the latter adjusted for undercount using the ABS ERP. In Halls Creek LGA, the number of identified Aboriginal dwellings barely increased since 2001 (an additional 12 dwellings or a 2% increase). In Wyndham-East Kimberley, however, an additional 180 Aboriginal dwellings were recorded representing a 37% increase in the census-identified stock. In Halls Creek, the apparent lack of additional dwellings appears to have occurred largely because of a substantial reduction in the number of improvised dwellings. Having said that, the number of new separate dwellings in Wyndham-East Kimberley is still well above that in Halls Creek and this is reflected in the greater reduction in the apparent occupancy rate in the former area.

Table 6.2 Structure of occupied dwellings with Aboriginal households: Halls Creek LGA 2001 and 2016

Structure of dwelling	2001			2016		
	No. of dwellings	Persons ^a	Occupancy rate	No. of dwellings	Persons ^a	Occupancy rate
Separate house	386	2,793	7.2	404	2,740	6.8
Townhouse/apartment	10	22	2.2	53	212	4.0
Improvised dwelling	74	425	5.7	19	15	0.8
Not stated	3	51	17.0	9	0	0.0
Total	473	3,292	7.0	485	2,967	6.1

Source: ABS Census of Population and Housing 2001 and 2016

a. Based on ABS ERP

Table 6.3 Structure of occupied dwellings with Aboriginal households: Wyndham-East Kimberley LGA, 2001 and 2016

Structure of dwelling	2001			2016		
	No. of dwellings	Persons ^a	Occupancy rate	No. of dwellings	Persons ^a	Occupancy rate
Separate house	397	2,530	6.4	538	2,710	5.0
Townhouse/apartment	46	106	2.3	88	320	3.6
Improvised dwelling	36	72	2.0	20	17	0.8
Not stated	3	0	0.0	16	31	1.9
Total	482	2,708	5.6	662	3,079	4.6

Source: ABS Census of Population and Housing 2001 and 2016

a. Based on ABS ERP

The uncertainty surrounding census-based housing data in the East Kimberley is exposed when trying to match census results with administrative data. The issue is clearly demonstrated in Tables 6.4 and 6.5 that compare the number of public rental dwellings derived from the census with equivalent data from the Department of Communities (DOC) for those remote communities in Halls Creek and Wyndham-East Kimberley LGAs where the Department manages the housing stock. Three observations emerge. First of all, data from the DOC reveal almost three times as many dwellings in these locations compared to the census. Second, because Indigenous Locations form the lowest geographic level for census output there are no data available from the census for the majority of these locations. Finally, even where geographies do match, there are invariably substantial shortfalls in census data with Wirrimanu and Mindibungu providing the stand-out examples. Added uncertainty arises because the DOC only provides housing at 17 out of 56 remote locations in Halls Creek LGA and at 22 out of 52 remote locations in Wyndham-East Kimberley LGA. The census,

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however, covers housing in all locations, but it doesn't record rental status for all of them, nor does it provide data output for all individual localities (at best this is provided at the level of Indigenous Locations that often group individual localities) and so it is not clear what numbers the census might report on that the DOC doesn't cover. Consequently, there are no data available from any systematic source for the remaining 68, mostly small outstation, communities, across the region where DOC housing services are not provided. Examples would include places like Frog Hollow, Crocodile Hole and Bow River. The important point to note is that this hasn't always been the case.

Table 6.4 Aboriginal communities in Halls Creek LGA with housing managed by the Department of Communities, 2016

Name of community	Number of dwellings managed by the Department of Communities	State rental occupied dwellings recorded by the Census
Wirrimanu	100	48
Warmun	89	65
Mindibungu	60	17
Kundat Djaru	46	18
Mulan	39	23
Mardiwah Loop	33	n.d.
Yiyili	23	n.d.
Lundja	16	n.d.
Lamboos Gunian	15	n.d.
Kupartiya	11	n.d.
Nicholson Town Camp	10	n.d.
Moongardie	8	n.d.
Girriyoowa	8	n.d.
Ganinyi	5	n.d.
Tirralintji	4	n.d.
Yulumbu	4	n.d.
Mimbi	3	n.d.
Total	474	171

Sources: WA Department of Communities; ABS 2016 Census of Population and Housing
n.d. = no data

Table 6.5 Aboriginal communities in Wyndham-East Kimberley LGA with housing managed by the Department of Communities, 2016

Name of community	Number of dwellings managed by the Department of Communities	State rental occupied dwellings recorded by the Census
Kalumburu	80	66
Mirima	30	38
Nulleywah	25	n.d.
Woolah	17	10
Mandangala	15	n.d.
Ngallagunda	14	n.d.
Guda Guda	13	n.d.
Warrayu	10	n.d.
Wuggubun	10	n.d.
Dodnun	9	n.d.
Emu Creek	9	n.d.
Molly Springs	6	n.d.
Munthanmar	5	n.d.
Ribinyung Dawang	5	n.d.
Kandiwal	4	n.d.
Ngunulum	4	n.d.

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Name of community	Number of dwellings managed by the Department of Communities	State rental occupied dwellings recorded by the Census
Four Mile	4	n.d.
Yirralalem	3	n.d.
Galburring	2	n.d.
Bell Springs	1	n.d.
Jimbilum	1	n.d.
Woolerregerberleng	1	n.d.
Total	268	114

Sources: WA Department of Communities; ABS 2016 Census of Population and Housing
n.d. = no data

The simple fact is, the ability to systematically track change in key aspects of housing and infrastructure in remote communities and town-based reserves of all sizes in the East Kimberley has been greatly impaired by the abandonment of two vital surveys of housing and infrastructure that were available in the early 2000s but have not been since 2006 and 2008 respectively—namely the ABS’ Community Housing and Infrastructure Needs Survey (CHINS) and the Western Australian Government’s Environmental Health Needs Survey (EHNS). In combination, these surveys provided comprehensive public access data on the number of dwellings by bedroom size, resident populations, occupancy rates, functionality of dwellings, community facilities, measures of mobility and infrastructure needs for all discrete Aboriginal localities.

We know, for example from CHINS, that in 2001 a total of 663 dwellings in 69 locations across the East Kimberley were managed by an Indigenous Housing Organisation (IHO) (Table 6.6). This is aside from an estimated 325 public rental dwellings occupied by Aboriginal households in Kununurra, Wyndham, and Halls Creek that were administered by the Department of Housing and Works at the time (Taylor 2004: 71). Today, public housing services are provided at just 39 (56%) of these former IHO localities with the main withdrawal occurring from smaller communities and outstations. Having said that, many small communities and outstations such as Bell Springs, Hollow Springs, Yulumbu and Tirralintji have continued with State-provided housing while the much larger community of Oombulgurri was abandoned altogether. Today, these equivalent data no longer exist, at least not in the public domain and not for all communities.

Table 6.6 Aboriginal population and Indigenous Housing Organisation dwellings by settlement category: East Kimberley region, 2001

	No. of localities	Population	Dwellings	Average occupancy rate
Communities	15	2,750	444	6.2
Outstations	46	837	150	5.6
Town Reserves	8	797	69	11.6
Total	69	4,384	663	6.6

Source: ABS Community Housing and Infrastructure Needs Survey 2001

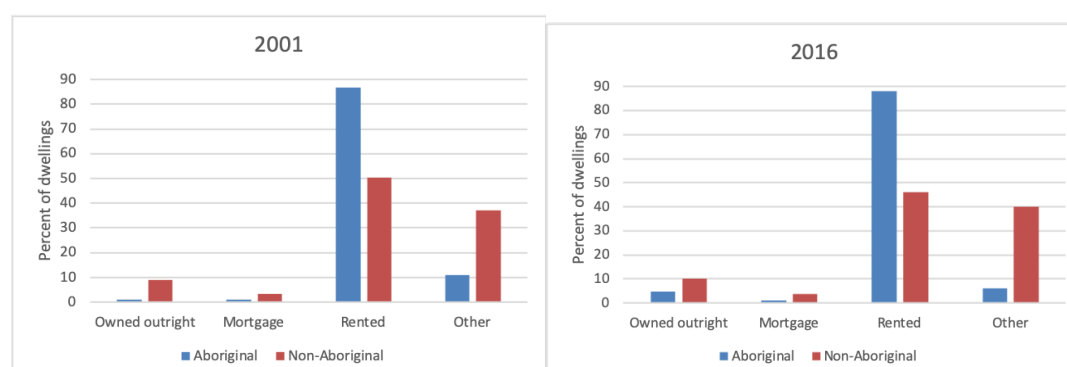
Housing tenure

The East Kimberley region is typical of many remote areas of the country for having such a high proportion of its private dwellings as government or company-owned rental properties with a corresponding low level of home ownership. Australia as a whole has one of the highest home ownership rates among OECD countries at 67% in 2016. In Western Australia as a whole it is slightly lower at 65.5%. By contrast, in Halls Creek

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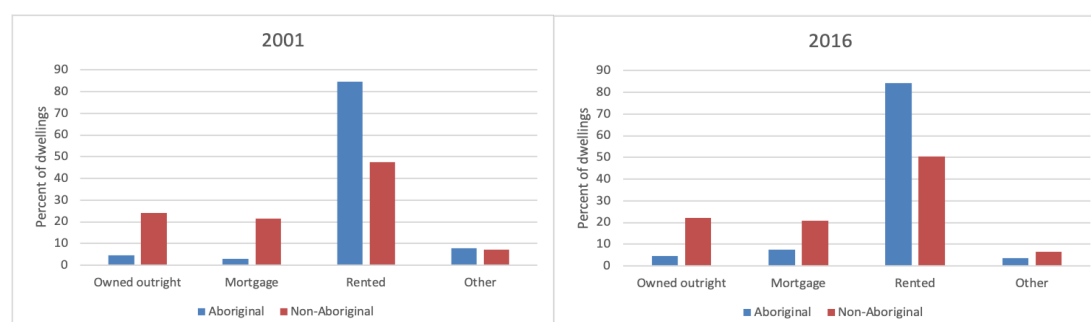
LGA, only 6% of Aboriginal dwellings were owned outright or mortgaged in 2016 and for all other dwellings the rate was only slightly higher at 14%. The equivalent rates of home ownership in Wyndham-East Kimberley were greater than this, at 12% and 43%, but these are still substantially below national or State-levels. However, what is more striking, given the long-standing COAG policy of seeking to raise levels of home ownership among Aboriginal people, is the relative lack of change in this situation. In Halls Creek LGA, the rate of Aboriginal home ownership was just 2% in 2001; by 2016, it was still only 6%. In Wyndham-East Kimberley the equivalent figures were 7% and 12%. Thus, the overriding feature of the pattern of housing tenure over the past 15 years in the East Kimberley has been the lack of any change regardless of Aboriginality or location (Figures 6.3 and 6.4).

Figure 6.3 Distribution of Aboriginal and non-Aboriginal occupied dwellings by tenure type: Halls Creek LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

Figure 6.4 Distribution of Aboriginal and non-Aboriginal occupied dwellings by tenure type: Wyndham-East Kimberley LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

In 2001, Aboriginal households were overwhelmingly in rental accommodation and this remains the case, in fact numerically more so in Wyndham-East Kimberley as the number of Aboriginal rental dwellings in that LGA increased from 370 to 508 whereas in Halls Creek the level has remained the same at around 400. As a consequence, the very low rates of home ownership recorded in 2001 have persisted even though the number of privately-owned Aboriginal dwellings in the region more than doubled by 2016 from 43 to 100.

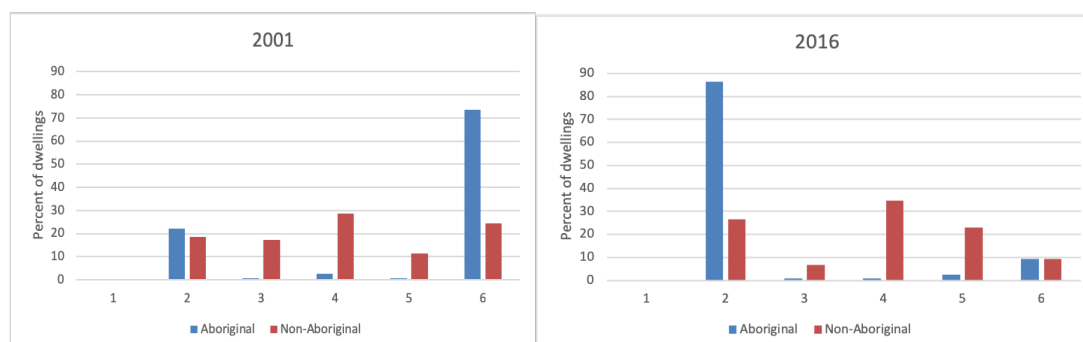
Further structural change has occurred among rental dwellings, at least in terms of how public rental arrangements are classified in the census and how they actually operate on the ground. The situation whereby Aboriginal households were overwhelmingly found in low cost public rental dwellings in 2001 hasn't changed. What has changed is the delivery and management of such dwellings. Back in 2001, the Wunan ATSIC

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Regional Council administered the Community Housing and Infrastructure Program (CHIP) through a network of community-based Indigenous Housing Organisations, including those focussed on town-based community living areas. Elsewhere, within the suburbs of Kununurra, Wyndham and Halls Creek, Aboriginal people accessed public rental dwellings as appropriate and as available via Homewest. By 2016, however, ATSIC had long-since been abolished and the delivery of Aboriginal services was reorganised under the National Indigenous Reform Agreement between the Commonwealth and the States which led to the mainstreaming of Aboriginal housing delivery under the jurisdiction of the WA State Housing Authority (now part of the Department of Communities) (see Hunt 2018). These administrative changes are reflected in the census results shown in Figures 6.5 and 6.6.

The effect is most evident in Halls Creek LGA (Fig 6.5) where the shift from community housing in 2001 to State housing in 2016 is striking. The same transfer is also seen in Wyndham-East Kimberley (Fig 6.6) although less so, which begs the question as to what forms of community housing are retained in that area given that community modes of delivery are supposed to have been displaced?

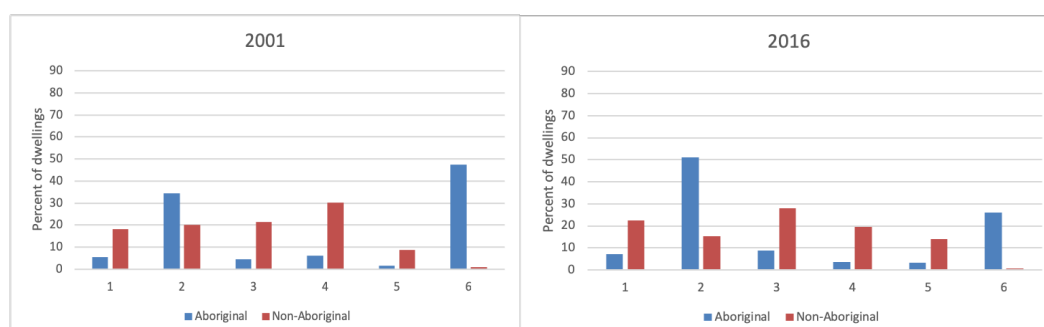
Figure 6.5 Aboriginal and non-Aboriginal rental dwellings by landlord type: Halls Creek LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

Legend: 1. Real estate agent; 2. State housing authority; 3. Private landlord; 4. Government employer; 5. Other employer; 6. Housing co-operative/community

Figure 6.6 Aboriginal and non-Aboriginal rental dwellings by landlord type: Wyndham-East Kimberley LGA, 2001 and 2016



Source: ABS Census of Population and Housing 2001 and 2016

Legend: 1. Real estate agent; 2. State housing authority; 3. Private landlord; 4. Government employer; 5. Other employer; 6. Housing co-operative/community

An important new component of Aboriginal public rental tenure included in these data, at least in Kununurra and to a lesser extent in Halls Creek, is so-called transitional housing. In 2012, the East Kimberley Transitional Housing project was launched using Commonwealth funding provided under the National Partnership Agreement for the East Kimberley Development Package. The project constructed transitional houses in Kununurra and in 2015 it expanded to include Halls Creek. At the time of the 2016 Census there were 40 such houses in Kununurra and 15 in Halls Creek. As of November 2019, there were still 15 in Halls Creek, 53 in Kununurra and three in Wyndham. Of these 10 were one-bedroom properties, 8 were two-bedroom, 42 were three-bedroom and 10 were four-bedroom.

The program is managed by the Department of Communities and (at the time of writing) contracted out to Community Housing Limited (CHL) and Nirrumbuk. Unlike social housing, the aim of the program is to have properties available for purchase by residents when their financial and personal capacity is such that they are ready to transition to alternative tenures, including shared equity or private home ownership. With a goal of effecting social change, the proviso is that tenants are in work or training or completing an apprenticeship, that their children attend school regularly, and that they demonstrate a commitment to work with wrap-around support services such as money management. It is not clear how this tenure-type manifests itself in census data but the assumption here is that it forms part of the public rental category since the program expectation is that transitions into home ownership (mortgage) would occur over a two-year period. As for progression through the scheme, the Department of Communities advises that data are not available on the number of clients who have accessed the scheme since its inception, nor on how many have withdrawn. However, a total of 4 clients have transitioned to home ownership since it was started and 21 have moved on to private rental arrangements. All of these are in Kununurra with just one private rental transition occurring in Halls Creek. Other data gathering on program indicators such as the number of people employed, debt levels and savings, and children's school attendance is currently under review and subject to co-redesign following a new tender process.

Housing adequacy

Measures of housing adequacy tend to comprise some form of occupancy calculation mainly using census data. As the ABS is the only agency that has a comprehensive data set for the East Kimberley that links population to housing, we are reliant on their census-based measure of adequacy. This is based on the Canadian National Occupancy Standard which is a measure of housing utilisation derived from data on the number of bedrooms in a dwelling along with a series of household demographics such as the number of usual residents, their relationship to each other, their age and sex. This measure aims to identify whether a dwelling is 'under' or 'over-utilised'.

Using this standard, the ABS produced a new housing variable for the 2016 census output called 'housing suitability'. This showed that out of 1,040 Aboriginal dwellings across the East Kimberley for which data were available, as many as 299 (29%) required extra bedrooms while 43% had 'spare' bedroom capacity. The remaining 28% were dwellings with adequate bedroom capacity. Using a similar formula, Biddle (2008, 2012) reported a total of 341 overcrowded Aboriginal dwellings in the East Kimberley in 2006 and 417 in 2011 representing 36% and 37% of all Aboriginal dwellings in the region at the time. This would suggest that the level of overcrowding has reduced somewhat. However, it should be pointed out that these calculations are based on usual

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resident counts only and they cannot be adjusted using post-census estimates of resident population because these are not compatible with household demographics. To that extent, they are inevitably underestimates of need in each census year, although to what degree is unknown. If we break these figures down by Local Government Area (Table 6.7) we can see that the greatest apparent housing need is in Halls Creek LGA where 35% of dwellings require extra bedrooms compared to Wyndham-East Kimberley where the figure is 24%.

Table 6.7 Overcrowded Aboriginal dwellings: Halls Creek and Wyndham-East Kimberley LGAs, 2016

	Halls Creek		Wyndham-East Kimberley	
	Dwellings	Extra bedrooms needed	Dwellings	Extra bedrooms needed
Four or more extra bedrooms needed	22	88	12	48
Three extra bedrooms needed	18	54	23	69
Two extra bedrooms needed	44	88	36	72
One extra bedroom needed	76	76	68	68
Total overcrowded dwellings	160		139	
Total bedroom need		306		257
% of dwellings requiring extra bedrooms	35.4		25.8	

Source: ABS Census of Population and Housing 2016

Not surprisingly, all but 15 of the Aboriginal households in overcrowded dwellings in 2016 were in rented accommodation. In Halls Creek LGA, almost all overcrowded dwellings (84%) were rented from the housing division of the WA Department of Communities. In Wyndham-East Kimberley this was notably lower at 58% with 42% of overcrowded dwellings in Community rental, although it is not clear just how this census category is manifest in actual rental arrangements on the ground as already mentioned.

To compound this data deficiency, one of the enduring difficulties in examining change in the geography of Aboriginal housing need across the East Kimberley is a mismatch that often exists between spatial units used for census data which are based on the ABS' Australian Indigenous Geographic Classification (AIGC), and those used by the various Western Australian government departments that have had responsibility for community housing (currently the Department of Communities). The latter agency identifies discrete community boundaries via land tenure arrangements and policy prescriptions regarding service delivery rather than by the requirements of statistical geography. On this basis it currently has responsibilities for managing essential services (power and water) and/or housing in 18 Aboriginal remote and town-based reserve communities. By contrast, the smallest unit in the AIGC (Indigenous Locations) identifies 18 contiguous areas some of which are town-based reserves (such as Mirima), some of which are remote communities (such as Warmun), others are urban centres (such as Kununurra), while the balance refer to residual (often geographically large) areas which include a number of (mostly smaller) localities within the Department of Communities remit as well as others that are not but none of which are separately

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identified in the AIGC. A further complication is that census data refer to occupied dwellings only as opposed to all dwellings.

The consequence of all this is that census data on housing and those provided by the Department of Communities and other agencies invariably do not match up even where spatial units are the same—for example, the 2016 census recorded just 17 occupied dwellings at Mindibungu despite the fact that the Department of Communities manages a total of 60. While these issues of compatibility are of concern, one advantage of census data over administrative data is that they provide a comprehensive set of population count figures for some settlement clusters as well as for broad settlement areas constituted, as we have seen, as ‘Indigenous Locations (ILs)’, whereas administrative data refer to dwellings only with no sense of numbers of residents. These population figures can then be set against administrative and/or census data on the number of dwellings at each location to provide a crude calculation of occupancy rates (estimated persons per dwelling) at different locations across the region. Of course, as we have seen, the census typically undercounts the resident population and so some upward adjustment is required. This is done by allocating each IL with a pro rata share of the 2016 ERP. Table 6.8 shows the distribution of these variables by Indigenous Location in 2016 listed in rank order according to estimated occupancy rate.

Table 6.8 Aboriginal housing and estimated population by Indigenous Location: East Kimberley region, 2016

Indigenous Location	Occupied dwellings with Aboriginal households	Estimated population	Estimated occupancy rate
Kundat Djaru	18	210	11.7
Mindibungu	17	171	10.1
Balgo (Wirrimanu)	48	370	7.7
Doon Doon	10	75	7.5
Kalumburu	66	472	7.2
Yardgee-Nicholson	24	171	7.1
Mirima	38	256	6.7
Warmun	65	396	6.1
Halls Creek Surrounds	67	404	6.0
Mardiwah Loop & Lundja	54	324	6.0
North-west Kimberley	22	124	5.6
Halls Creek (ex. Town Camps)	150	814	5.4
Great Sandy Desert	20	108	5.4
North-East Kimberley	47	211	4.5
Mulan	23	101	4.4
Argyle	41	165	4.0
Wyndham	112	449	4.0
Kununurra (ex. Town Camps)*	321	1,219	3.8
Total East Kimberley	1,143	6,040	5.3

Source: ABS Census of Population and Housing 2016

Note: 2016 Census data not available for Nulleywah

If we use the average occupancy rate for the region of 5.3 as a benchmark, we can identify locations that are higher and lower than this. Accordingly, all locations with above average occupancy appear to be remote communities such as Kundat Djaru or community living areas within towns such as Yardgee-Nicholson and Mirima, while most dwellings with below (or close to) average occupancy include suburban areas of the three main towns. Of course, the notion of housing adequacy extends far beyond

mere measures of occupancy to include what has long been identified as the all-important consideration of environmental health infrastructure (Pholeros et al. 1993). In the Kimberley, it is estimated that one-fifth of primary health care presentations among children aged 0-4 years are attributable to environmental risk factors associated with poor housing and community living conditions (McMullen et al. 2016) and so detailed data on the functionality of dwellings represent a vital input to regional planning.

Environmental health infrastructure

As mentioned earlier, the two main sources of comprehensive data on environmental health infrastructure in remote communities and town-based reserves (CHINS and EHNS) have been defunct since 2006 and 2008 respectively. It is also the case that the policy and funding framework surrounding the provision of housing and municipal services to these communities has been considerably overhauled in recent years with a focus on consolidating resources in fewer, larger settlements under the regional services reform agenda (<https://regionalservicesreform.wa.gov.au/p/roadmap>) and the outsourcing of housing management services to contracted NGOs (see also Hunt 2018).

With regard to infrastructure data, the Department of Communities advises that they have not compiled, nor do they hold, data equivalent to CHINS or EHNS that are comprehensive enough to cover the whole of the East Kimberley region. While they have now assumed responsibility for the management of municipal services from the Commonwealth this only includes 20 out of 107 locations and it essentially refers to the Remote Area Essential Services Program (RAESP) that provides a repair and maintenance service for power, water and wastewater systems at these select sites. Key services provided include planned and unplanned maintenance of essential services, emergency breakdown services, water quality testing, monitoring and reporting, advice on capital works priorities and scope, and Aboriginal enterprise and employment. Aboriginal Community Housing Limited (ACHL) is contracted to provide RAESP services at 4 of these 20 locations (at Kalumburu, Mandangala, Guda Guda, and Woolah). It also provides property and tenancy management for a further 12 communities including Cockatoo Springs, Emu Creek, Four Mile, Galburang, Mirima, Munthanmar, Nulleywah, Ribinyung Dawang, Warrayu, Woolgergerberleng, Wuggubun, and Yirrallelem. In addition to these activities, Nirrumbuk provides environmental health services at Wirrimanu, Bililuna, Mulan, Kununurra, Molly Springs, Nulleywah, Mirima, Emu Creek, Woolah, Guda Guda, and Warrayu. This involves standard/core clinic referrals for environmental health household support, dog programs, support for cyclone clean ups and other clean up days, mosquito control, response to environmental health risks, development of community-based Environmental Health Action Plans with major communities, support to target communicable disease outbreaks, and other miscellaneous interventions as needs arise.

As for data emanating from these collective activities, these are transactional only. They are gathered solely for operational purposes such as providing support and feedback to clients. No consents for sharing of data are obtained. In short, such data as exist are of limited scope and accessibility for use in the public scrutiny and assessment of regional housing and infrastructure needs and for the public monitoring of program impacts. In any event, even if systematic and comprehensive data on environmental health conditions were to be gathered and made available, the geographic coverage is currently limited to only those places across the region where services are provided. This is all a

far cry from the intent of the former ATSIC Regional Planning model (Commonwealth of Australia 2003). It also falls short of the Housing for Health methodology that has for many years promoted population-based data-driven health hardware monitoring and improvements as essential underpinnings of service delivery and planning at all localities where people might reside even if only for periods of time (<http://www.housingforhealth.com/>). As matters stand in the East Kimberley, it is not possible to report on change in the presence and functionality of environmental health hardware for all Aboriginal communities across the region since the comparative data required for such an exercise no longer exist. In 2001, for example, it was known from CHINS data that 396 IHO dwellings across the region required minor or no repairs, 155 required major repairs and 122 required replacement. Equivalent figures from the 2006 CHINS were 383, 144 and 95, suggesting some slight improvement. Quite what the present situation is across the board remains unknown. No single comprehensive and authoritative data set of Aboriginal housing currently exists for Aboriginal communities in the East Kimberley and therefore no clear comprehensive measure of housing need is available. There is an urgent need to fill this data void.

7. Health and welfare

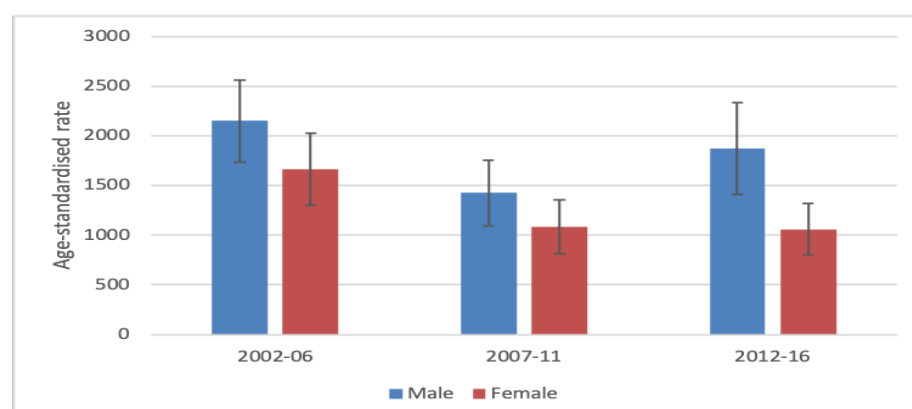
Information on health status and outcomes is gathered as a matter of course in the day-to-day operation of the health care system in Western Australia. To develop a robust time-series of health indicators since 2001, data for usual residents of the East Kimberley were compiled by the Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health for the periods 2002-06, 2007-11 and 2012-16. These data were drawn from hospital records and ABS vital registration records. In line with the original report (Taylor 2004), analysis of health status is focused mostly on high-level Tier 1 type measures of health status and outcomes as per the Aboriginal and Torres Strait Islander Health Performance Framework (AIHW 2014). This includes the prevalence of health conditions (for example, circulatory disease, diabetes), human function (for example, disability), and mortality. Many elements of Tier 2 measures from the Health Performance Framework that focus on the determinants of health, particularly those concerned with socioeconomic status, are provided in the main body of this report. Tier 3 measures that focus on health system performance are not included.

Mortality

Between 2002 and 2016, the WA Department of Health recorded a total of 828 deaths of East Kimberley residents. Of these, 680 were Aboriginal residents or 82% of the total. This is despite the fact that Aboriginal people have comprised an average of only 54% of the population throughout this period. Presently (over the period 2012-16), the number of Aboriginal male deaths in the East Kimberley outnumbered non-Aboriginal male deaths by almost 3 to one, while Aboriginal female deaths outnumbered non-Aboriginal female deaths by more than 11 to one.

Adjusting for age differences between the two populations, Table 7.1 shows that the all-cause age-standardised mortality rate (ASMR) for Aboriginal males was 8 times higher than the rate for non-Aboriginal males in 2002-06 (2,149 per 100,000 compared to 263) and while this has fallen over time it was still four times higher in 2012-16 (1,871 per 100,000 compared to 481). The equivalent comparison for females is not possible because of too few deaths of non-Aboriginal females. As for Aboriginal rates, these have shown no statistically significant improvement at the 0.05 confidence level over the period 2002-6 to 2012-16 as indicated in Figure 7.1. Clearly, though, Aboriginal male mortality rates have been consistently higher than their female counterparts and are now 76% higher which is statistically significant (Table 7.2).

Figure 7.1 Aboriginal male and female all causes age-standardised mortality rates: East Kimberley region, 2002-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

Rates per 100,000 persons per year

Note: Statistically there is 95% confidence that the true rate (ASR) falls between lower and upper confidence interval values shown by the 'whiskers' in the chart. Two rates are considered significantly different (at the 0.05 level) if their confidence intervals do not overlap. Otherwise, if their confidence intervals overlap, the two rates are not significantly different.

Table 7.1 Ratios of Aboriginal male to non-Aboriginal male Age-standardised mortality rates: East Kimberley region, 2002-06, 2007-11 and 2012-16

	2002-06	2007-11	2012-16
Males	8.17	3.02	3.89

Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

Table 7.2 Ratios of Aboriginal male to Aboriginal female Age-standardised mortality rates: East Kimberley region, 2002-06, 2007-11 and 2012-16

	2002-06	2007-11	2012-16
Ratio	1.29	1.31	1.76

Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

To place these mortality rates in a national context, the rate for Aboriginal males in the East Kimberley was 72% higher than for Aboriginal males nationally (1,871 per 100,000 compared to 1,086) whereas the rate for Aboriginal females in the East Kimberley was much closer to the national rate (1,061 per 100,000 compared to 918).

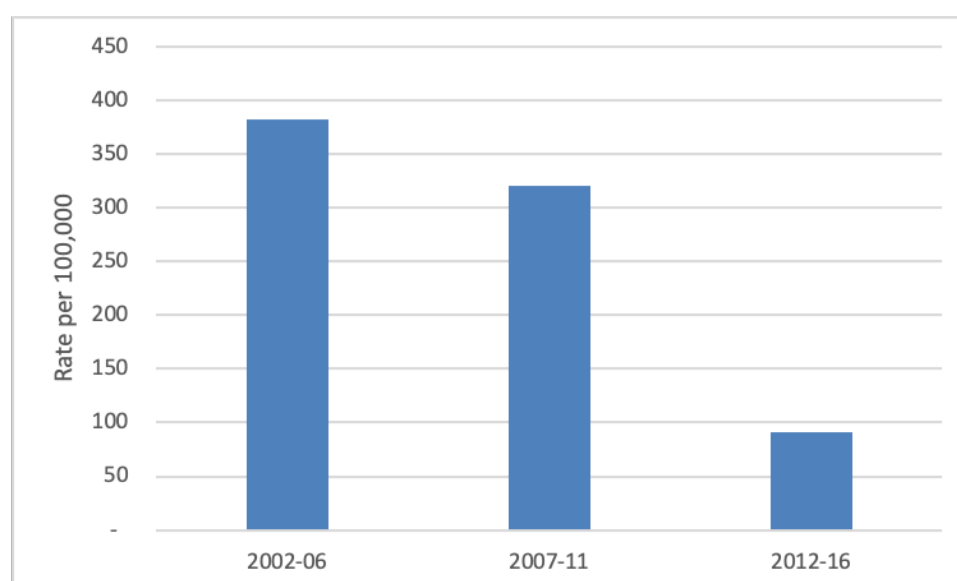
Childhood mortality

Of particular interest as a measure of development outcomes is the rate of childhood mortality (deaths among those aged 0-4 years). For this reason, halving the national gap in child mortality rates between Aboriginal and non-Aboriginal children by 2018 was one of the key planks of the original COAG Closing the Gap strategy. Despite some improvement in key maternal and child health indicators this target was not achieved (Australian Government 2019). By 2017, the national Indigenous child mortality rate was lower over the long-run but it was still 2.4 times the equivalent rate for non-Indigenous children and therefore well outside the range required to achieve this target. In situations of high overall mortality and relatively low life expectancy, as found among Aboriginal people in the East Kimberley, child mortality is also typically high and reducing the level has been a major goal of public health interventions.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Internationally, high child mortality levels have been associated with poverty, the availability, accessibility and quality of health services, environmental health risks including access to safe water and sanitation, and poor nutrition (United Nations Children's Fund 2017). As for aetiology, in Australia perinatal conditions have accounted for a large share of causes, along with 'sudden and ill-defined conditions' (such as Sudden Infant Death Syndrome), 'congenital malformation', and 'injury and poisoning' (Australian Government 2014). While many health interventions can have a long lead-time before measurable impacts are seen, a number of intermediate measures provide an important barometer of likely improvement in child and maternal health such as increases in the take up of antenatal care programs, reductions in the rate of maternal smoking during pregnancy, reductions in low birthweight babies, and increases in immunisation rates. These typically form outcomes that arise from the many public health activities conducted by Aboriginal Medical Services and the State government in the East Kimberley. To this extent, it is encouraging to find that Aboriginal child mortality rates in the East Kimberley appear to have followed the national trend downwards as shown in Figure 7.2. Some caution is flagged here, especially regarding the size of any decline, because there can be a good deal of variation in recorded numbers over time given the relatively low numbers involved even though the data are cumulated over five-year periods. For comparison, the age-specific rate among Indigenous 0-4 year-olds in Western Australia as a whole in 2012-16 was just under 200 per 100,000 while the national rate in 2016 was 146 per 100,000 (Australian Government 2018).

Figure 7.2 Aboriginal child mortality rates: East Kimberley region, 2002-2016



Source: *Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health*

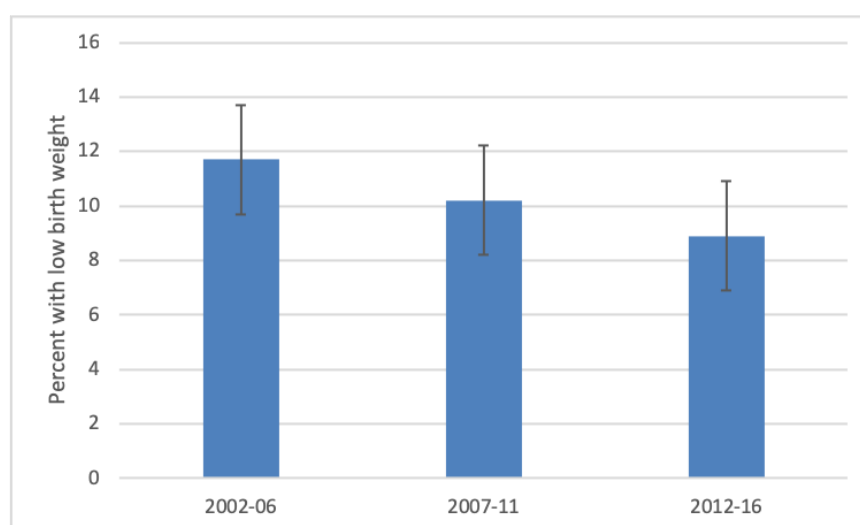
Age-specific rate 0-4 years per 100,000 persons per year

Low birthweight (newborns weighing <2,500 grams) is associated with being born early (pre-term) or being small for gestational age. It is a widely used proxy measure of fetal growth. Low birthweight infants are also at a greater risk of dying during their first year of life and they are prone to ill-health in childhood and the development of chronic diseases as adults, including cardiovascular disease, high blood pressure, kidney disease and type 2 diabetes (AIHW 2018). Figure 7.3 shows the change in the proportion of all liveborn infants in the East Kimberley with low birth weights since

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

2002-06. If we consider that Aboriginal infants account for 91% of the cases shown then it is clear that the burden of low birth weight falls mostly on Aboriginal infants as 14% of those born between 2002 and 2016 were below <2,500 grams compared to just 3% of non-Aboriginal infants born. As a rough guide to significance, this means that the rate of low birth weight for Aboriginal births was almost 5 times than that for non-Aboriginal births over the 15-year period. By contrast, the overall ratio of Aboriginal to non-Aboriginal low birth rates was 3.3 for Western Australia as a whole in 2016 (SCRGSP 2016: Table 4A.2.5). Nonetheless, there does appear to be a downward trend in low birth weights, although this is not significant. Of particular note is the fact that the overall rate in the East Kimberley in 2012-16 was 8.9% whereas the rate for Aboriginal live born babies in Western Australia as a whole was around 13% in 2014 (AIHW 2017:21).

Figure 7.3 Proportion of all liveborn infants with low birth weight: East Kimberley region, 2002-06, 2007-11 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

Smoking during pregnancy is associated with low birth weight as well as pre-term birth, placental complications and perinatal mortality. In the East Kimberley, the proportion of births to Aboriginal women who reported smoking during pregnancy between 2012-16 was substantially higher than that reported for non-Aboriginal mothers as shown in Table 7.3. The rate for Aboriginal mothers of 58.6% is in line with the level recorded for Aboriginal people in the Kimberley as a whole in 2016 although this had risen from just 40% in 2011/12 (Government of Western Australia 2018).

Table 7.3 Proportion of births where the mother smoked tobacco in the first 20 weeks of pregnancy: East Kimberley region, 2012-2016

	No. of births where mother smoked	Total births	% of births where mother smoked
Non-Aboriginal	27	315	8.6
Aboriginal	325	555	58.6

Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

While it has been recognised for some time that high rates of alcohol consumption during pregnancy are associated with Foetal Alcohol Spectrum Disorder (FASD) and various other impairments of the central nervous system in children (Bridge 2011),

population data on the incidence and prevalence of FASD remains difficult to acquire. Even systematic collection of perinatal data on maternal alcohol consumption is only just emerging and so establishing trends in rates of alcohol consumption over the period since 2001 is difficult. However, the most recent Kimberley Health Profile produced by the WA Country Health Service provides a rough estimate of between 32 and 40% of Aboriginal mothers across the Kimberley using alcohol during pregnancy in 2014/15 with one in four of these using alcohol at high risk levels (Government of Western Australia 2018: 17).

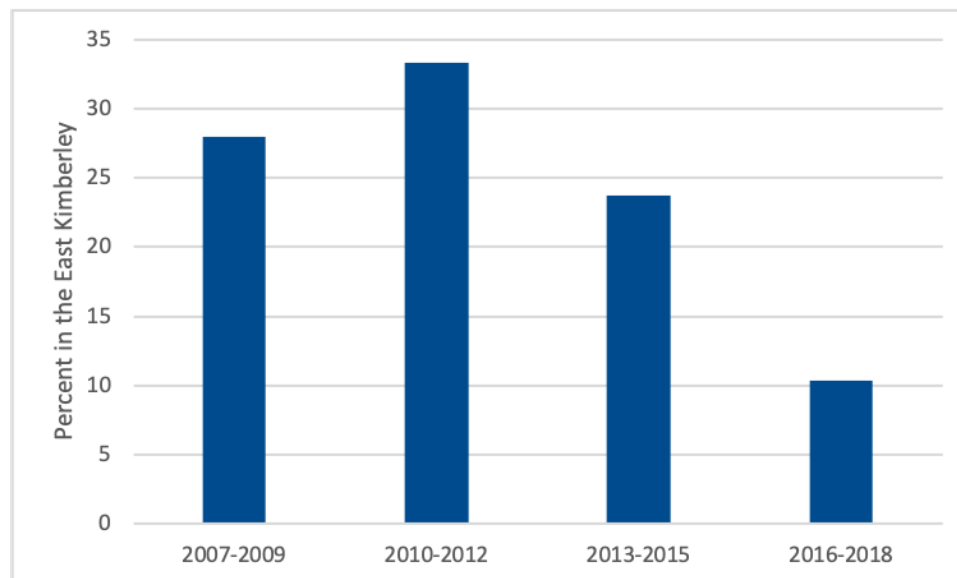
Further constraints on the recording and reporting of the incidence and prevalence of FASD arise from the low level of awareness by clinicians of FASD conditions, the complexity of diagnosis, and the absence of nationally agreed and consistent diagnostic criteria and definitions (AIHW 2014). In the definitive population-based prevalence study to date (Fitzpatrick et al. 2017), neurodevelopmental impairment with or without parental alcohol exposure was found to be highly prevalent (314 per 1000) amongst Aboriginal children aged 7-8 years in the Fitzroy Valley, an area adjacent to the East Kimberley region. This reported a diagnosis on the FASD spectrum for 194 per 1000 children—a rate that was among the world’s highest. Inquiries with PATCHES Pediatrics, the WA Country Health Service, and the FASD Prevention Program at Ord Valley Aboriginal Health Service (OVAHS) revealed that similar prevalence data do not exist for the East Kimberley. Another potential source of data is the WA Children’s Court. The court can make an order for a “pre-sentence report” to be made for a defendant, and this multidisciplinary report may include a specific request for FASD testing. However, as FASD testing is simply a component of pre-sentence reports (and is not a specific court order itself) it is not possible to determine from the court database the number of orders for FASD testing have been made by the Children’s Court.

Currently, then, the only available source of systematic FASD data for Aboriginal people in the region are hospitalisation data provided by WA Health for persons aged 0-34 years (34 years being the highest recorded age in the system for a FASD hospital diagnosis). While these form part of the FASD diagnoses in the National Hospital Morbidity Database it should be noted that they relate to the extreme end of the spectrum of various conditions and this source may therefore lack the sensitivity needed to detect many cases of FASD in the community. Virtually all diagnoses refer to the age group 0-4 years and data are available for the period 2007-18. These reveal that all FASD diagnoses in the East Kimberley over this period have been for Aboriginal persons. Noting the proviso above, they also show a much lower FASD rate than recorded in the Fitzroy Valley study with an age-specific rate for children aged 0-4 years falling from 88 per 1000 in 2007-09 to 41 per 1000 in 2010-12 and just 18 per 1000 in 2013-15. Over the whole period of 2009-18 the age-specific rate for infants was 36 per 1000. However, this rate is calculated by WA Health by using all East Kimberley residents as the denominator. If, instead, we use the 2016 estimate of Aboriginal children as the denominator we derive a somewhat higher rate of 56 per 1000.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Some indication of the relative significance of FASD within the East Kimberley is the fact that FASD hospitalisations in that region have persistently accounted for a substantial share of all FASD hospitalisations in Western Australia since 2007 as shown in Figure 7.4. This proportion peaked at one-third of all State-wide diagnoses in 2010-12, and while there has been a notable decline since then, this may partly reflect the emergence of more widespread awareness of the issue across the State. Nonetheless, to the extent that low-birth weight reflects fetal development, there may be some association between the decline in low-birth weights in the East Kimberley shown in Figure 7.4 and reduction in reported Aboriginal FASD hospitalisations from 33 in 2007-09 to just 7 in 2016-18.

Figure 7.4 Percentage of Western Australia FASD hospitalisations recorded in the East Kimberley, 2007-2018



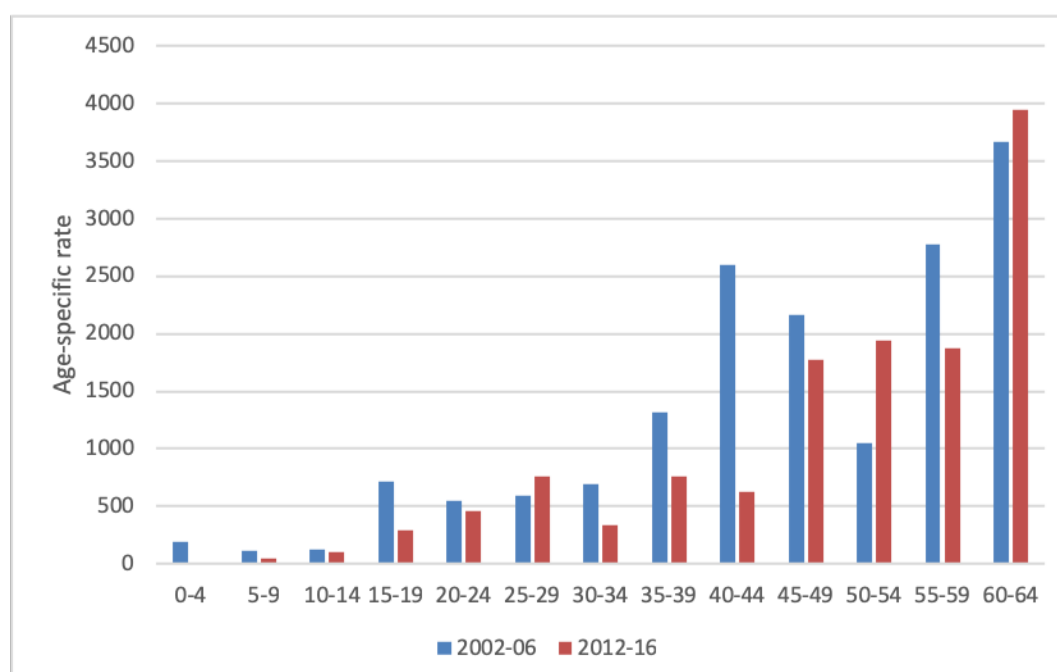
Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

All causes mortality

Of particular interest from the perspective of economic participation is the rate of mortality across the life span. This is shown for Aboriginal males and then females in Figures 7.5 and 7.6 with reference to the population aged 15-64. In 2002-06, signs of rising mortality commenced among males at age 35 and among females at age 40. Beyond these ages mortality rates increased steadily among both males and females to reach a very high peak among those aged 60-64. However, since 2002-06, rates at most ages have notably declined, especially among females. Despite this general decline in rates, mortality is now substantially much lower among females than among males at just about all ages, although this gap has opened up most clearly among those aged over 45 years.

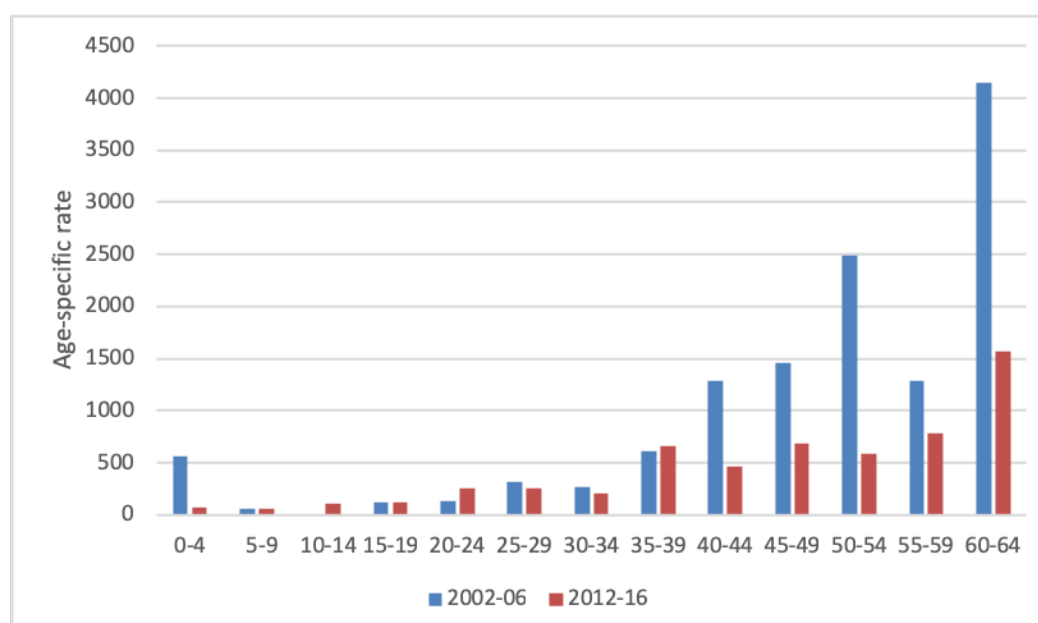
Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

Figure 7.5 Aboriginal males 15-64 years all causes age-specific mortality rates: East Kimberley region, 2002-06 and 2012-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Figure 7.6 Aboriginal females 15-64 years all causes age-specific mortality rates: East Kimberley region, 2002-06 and 2012-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Leading causes of mortality

While there has been no significant decline in all-cause Aboriginal mortality rates since 2002-06, there are signs of significant decline in the main causes of excess mortality since that time (Table 7.4). This is particularly so in regard to diseases of the circulatory system which remain the main cause of excess Aboriginal mortality in the East Kimberley. Neoplasms also register as a leading cause and while there has been a

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

decline in rates this has not been significant. However, significant reduction in mortality due to external causes (accidents, assaults, etc.) is also recorded and this is also likely to be the case for respiratory diseases as well, although there are insufficient cases post-2002-06 to test this. It should be pointed out, however, that deaths of Aboriginal people due to intentional self-harm increased over the 15-year period from 2002 and they now represent the third leading cause of death.

Table 7.4 Leading age-standardised Aboriginal mortality rates by cause*: East Kimberley region, 2002-06, 2007-11, 2012-2016

Leading ASMR by cause in 2002-06	ASR 2002-06	ASR 2007-11	ASR 2012-16	Significant change at 0.05 level 2002/06- 2012/16
Diseases of the Circulatory System	591.0	354.9	393.6	Yes
Neoplasms	260.1	259.6	216.6	No
Diseases of the Respiratory System	238.7	Nil	Nil	Nil
External cause of morbidity & mortality	195.9	174.1	134.1	Yes
Symptoms, signs & abnormal clinical and laboratory findings	72.5	Nil	Nil	Nil

Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

**Major category ICD-10-AM*

ASR = Age-standardised rate per 100,000

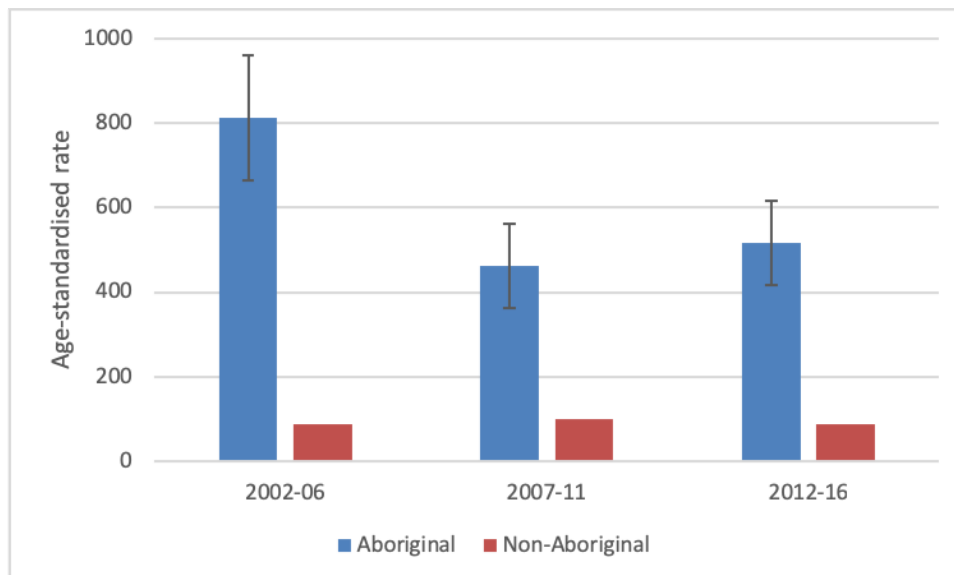
Nil = insufficient cases

Note: Statistically there is 95% confidence that the true rate (ASR) falls between lower and upper confidence interval values. Two rates are considered significantly different (at the 0.05 level) if their confidence intervals do not overlap. Otherwise, if their confidence intervals overlap, the two rates are not significantly different.

To place these age-standardised rates into perspective, in Western Australia as whole during 2011-15, the most common cause of death for Indigenous and non-Indigenous people was also circulatory disease with an Indigenous ASMR of 335 per 100,000 and 151 per 100,000 for non-Indigenous people. This was followed also by neoplasms (234 per 100,000 compared to 162), endocrine, metabolic and nutritional disorders (157 compared to 22), and finally, external causes (113 compared to 47). As we can see, while Aboriginal people in the East Kimberley share these common causes of mortality, their rates of mortality for each of these are all higher. In effect, then, Aboriginal mortality in the East Kimberley, as elsewhere in Western Australia, remains dominated by causes that are potentially avoidable.

With this in mind, Figure 7.7 shows the change in Aboriginal and non-Aboriginal potentially avoidable mortality rates for the period 2002-2016. In terms of actual numbers of deaths, the most common causes have consistently been diseases of the circulatory system and causes that are “external” to the body, such as injuries, poisoning, transport accidents, assault and self-harm). These have accounted for a total of 170 and 151 deaths respectively over the 15-year period. Of the latter external causes, deaths due to intentional self-harm have increased since 2001 and now account for 11% of all Aboriginal deaths in the East Kimberley (up from 4% in 2002-06) and 61% of deaths due to external causes (up from 24% in 2002-06). This currently (2012-2016) makes suicide the third leading cause of death for Aboriginal people in the East Kimberley.

Figure 7.7 Age-standardised Aboriginal and non-Aboriginal potentially avoidable mortality rates: East Kimberley region, 2002-06, 2007-11, 2012-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Note: Statistically there is 95% confidence that the true rate (ASR) falls between lower and upper confidence interval values shown by the 'whiskers' in the chart. Two rates are considered significantly different (at the 0.05 level) if their confidence intervals do not overlap. Otherwise, if their confidence intervals overlap, the two rates are not significantly different.

Potentially avoidable deaths are those that could be prevented with individualised care or through existing primary care or hospitalisation (Falster and Jorm 2017). They are amenable to screening and primary prevention, such as immunisation, lifestyle change, and social service support. To this degree they reflect the effectiveness of the current preventive health activities of the health and social services sector including social support, disease prevention and population health initiatives (ABS 2016c). According to the ABS (2016c) they may be influenced by a person's level of access to medical and other services which may, in-turn, be influenced by their place of usual residence and socio-economic circumstances. Accordingly, the ABS reports a strong correlation between the rate of potentially avoidable death rates across Australia and degree of remoteness (ABS 2016c). Given that the East Kimberley is classified as very remote it is to be expected that rates of potentially avoidable deaths would be relatively high. In line with this expectation, the current rate in the region that is shown in Figure 7.7 (517 per 100,000) is much higher than the national rate (345 per 100,000) based on collective data from New South Wales, Queensland, South Australia, Western Australia and the Northern Territory (Commonwealth of Australia 2017).

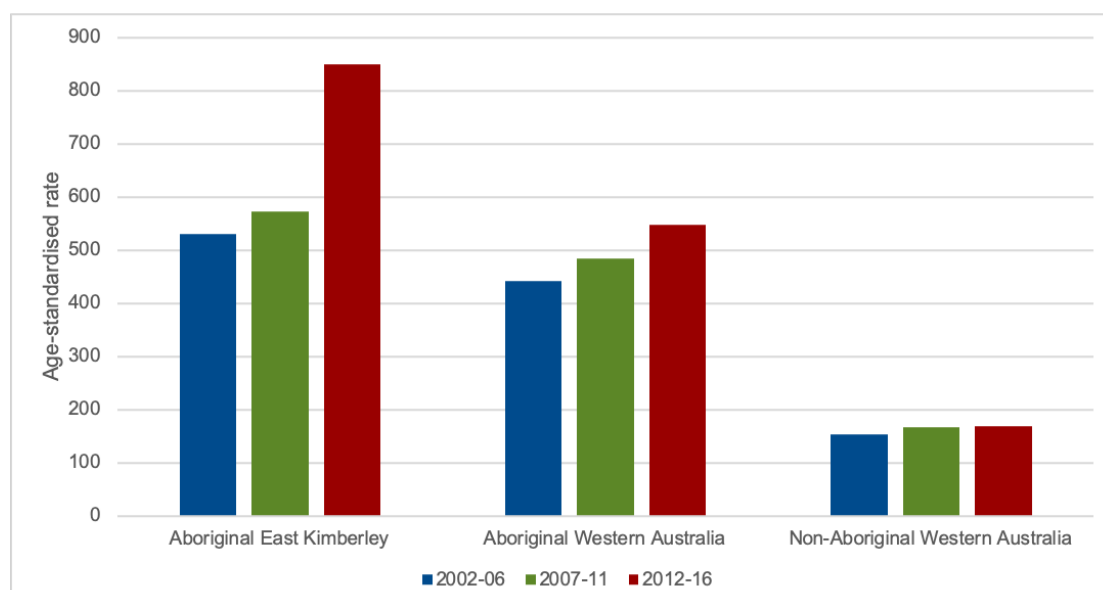
Over the period 2002-2016 there were a total of 440 deaths from avoidable causes among East Kimberley residents and fully 85% of these were attributed to Aboriginal residents despite these accounting for just 54% of the population. Nonetheless, there was a statistically significant 36% decline in the Aboriginal ASMR for conditions that are amenable to health care intervention. However, after adjusting for differences in age structure, Aboriginal residents of the East Kimberley still presently die (2012-16) from avoidable causes at 6 times the rate of their non-Aboriginal counterparts. A large part of this gap is accounted for by Aboriginal deaths due to intentional self-harm. Over the period 2012-16, as much 24% of avoidable Aboriginal deaths were due to intentional self-harm.

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According to data provided by the WA Department of Health, a total of 70 deaths due to intentional self-harm were recorded among Aboriginal residents of the East Kimberley over the 15-year period between 2002 and 2016 equating to a standardised death rate of 56 per 100,000. The equivalent rate for Aboriginal people generally in Western Australia over the same period was 33 per 100,000, while for the total Western Australian population (in 2016) it was 14 per 100,000 (ABS 2017). In other words, the Aboriginal death rate due to suicide over this period in the East Kimberley was almost double that recorded for Aboriginal people generally in Western Australia and almost four times higher than recorded for the State population as a whole.

Not surprisingly, intentional self-harm also contributes to high Aboriginal rates of hospitalisation in the East Kimberley—in 2012-16, the standardised Aboriginal hospitalisation rate of 849 per 100,000 for intentional self-harm was similar in level to the Aboriginal rate for diabetes in the East Kimberley (802 per 100,000). Overall, over the past 15 years, the hospitalisation rate for self-harm has increased among Aboriginal people in both the East Kimberley and in Western Australia as a whole as shown in Figure 7.8. However, the rate in the East Kimberley has been consistently higher than for Aboriginal people generally in Western Australia, and this gap was statistically significant for the period 2012-2016, while the East Kimberley rate was three times higher than the non-Aboriginal State rate between 2002-2011 and rose to five times higher during 2012-2016.

Figure 7.8 Age-standardised Aboriginal and Non-Aboriginal hospitalisation rates for intentional self-harm: East Kimberley region and Western Australia, 2002-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

It has been known for some time that rates of suicide among Aboriginal people in the Kimberley are among the highest in the world (McHugh et al. 2016). An audit by the Kimberley Mental Health and Drug Service (KMHDs) of 125 suicides in the region over the 10-year period between 2005 and 2014 found that 102 of these involved Aboriginal people. This produce an age-adjusted suicide rate of 74 per 100,000 population (McHugh et al. 2016). Furthermore, during 2014, as many as 553 people presented with suicidal behaviour (deliberate self-harm, or suicidal ideation and plans). Of these, 86% were Aboriginal. A telling point, in terms of avoidable deaths, is that 97%

of presentations with suicidal behaviour involved people who were either unknown to KMHDS or who were inactive clients.

In reflecting on reasons for this high prevalence of suicide in the Kimberley Region, the WA State Coroner's 2017 inquest into the deaths of thirteen children and young adults in the Kimberley accepted that this could not be explained by a medical model of causation alone. To quote, "The impact of colonisation makes the aetiology of Aboriginal youth suicide distinctive. Unresolved trauma, entrenched socio-economic disadvantage and cultural disruption are unique factors impacting the social and mental well-being of Aboriginal people in the region. Systemic social exclusion and disempowerment compound the cumulative effects of these issues even further, adding to the distress experienced by Aboriginal communities." (Coroner's Court of Western Australia 2019: 32). Much of the data in this report confirms the scale and nature of these socio-structural determinants.

Morbidity

Hospital separations data from the Epidemiology Branch of the WA Department of Health provide the basis for developing profiles of morbidity for Aboriginal and non-Aboriginal residents of the East Kimberley. The source of these data is the Western Australia Hospitals Morbidity Data System (HMDS). This records episodes of care within the hospital system. These commence with formal admission to hospital and end with a formal discharge (separation) from hospital. As such, the data used here to profile morbidity exclude patients attending outpatient or community health services. To that extent they do not provide a full measure of the burden of ill health in the region. Rather, they focus attention on health conditions that are serious enough to warrant admission to hospital. Another limitation is that they relate to episodes of hospitalisation rather than to individual patients. As such, they can include multiple admissions by a relatively small number of people with the notable example being for kidney dialysis. As a consequence, data are presented that both include and exclude episodes of care involving dialysis.

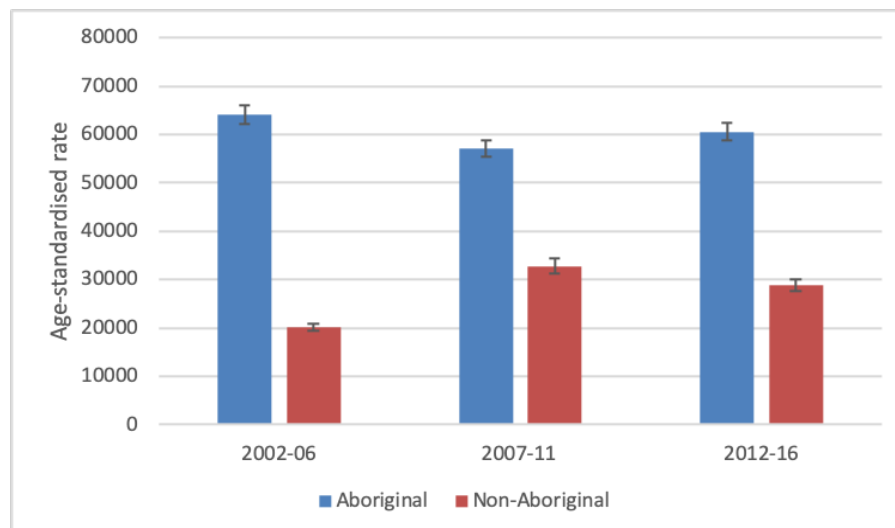
Over the period 2012-16, a total of 37,000 hospital separations were recorded for usual residents of the East Kimberley. Of these, the vast majority (80.3%) were accounted for by Aboriginal residents even though Aboriginal people comprised just 54% of the population. This represents a slight rise in the Aboriginal share of regional separations from 77% during 2002-06. Kidney dialysis accounts for a sizeable proportion of these Aboriginal separations—as much as 29% in 2012-16, up from just 5% in 2002-06 and 4% in 2007-11. This increase in separations due to dialysis reflects the establishment of the Kununurra Renal Health Centre in 2013. If we exclude these separations, the underlying level of hospitalisation amounted to 25,958 separations in 2012-16 up from 22,345 in 2002-06. However, as an age-standardised rate, this translates into a slight reduction in Aboriginal hospitalisation rates—for males, from 64,105 per 100,000 in 2002-06 to 60,607 per 100,000 in 2012-16; for females, from 69,515 per 100,000 in 2002-06 to 67,847 per 100,000 in 2012-16.

Notwithstanding this reduction, Aboriginal hospitalisation rates in the East Kimberley remain far higher than non-Aboriginal rates (even excluding dialysis) as indeed they are across the country. Figures 7.9 and 7.10 show these relative rates for males and female respectively. Aside from the clear observation that Aboriginal rates are relatively very high, the main point to note is the lack of any statistically significant

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

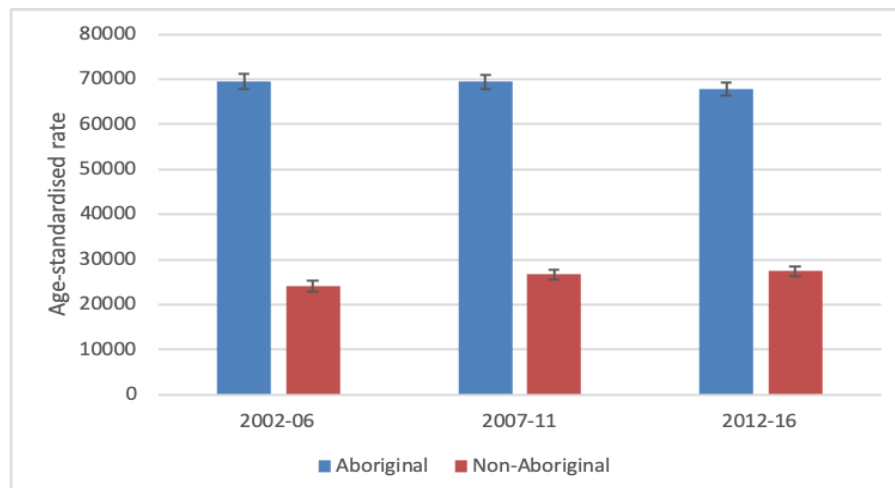
reduction in rates since 2002-06 among both Aboriginal males and females. At the same time, female rates are consistently higher than male rates due most likely to hospitalisations for childbirth. Any reductions in morbidity would no doubt reflect the impact of primary health initiatives aimed at lowering the incidence and prevalence of underlying conditions as well as any changes to the social determinants of health outcomes such as employment, education and housing as documented earlier. To this extent, the lack of any significant decline in Aboriginal rates partly reflects the slow pace of socioeconomic change, as the previous sections of this report have outlined, as well as the long lead times that are required for public health initiatives to be implemented and have effect.

Figure 7.9 Age-standardised Aboriginal and Non-Aboriginal male hospitalisation rates (excluding dialysis): East Kimberley region, 2002-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Figure 7.10 Age-standardised Aboriginal and Non-Aboriginal female hospitalisation rates (excluding dialysis): East Kimberley region, 2002-2016



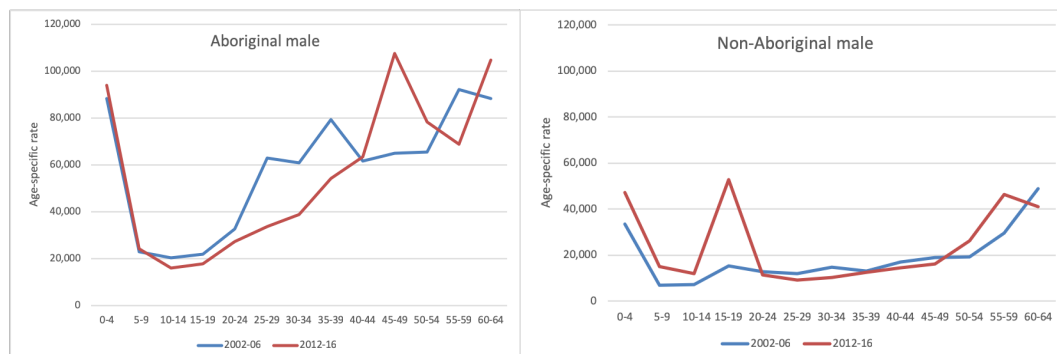
Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Note for Figures 7.9 and 7.10: Statistically there is 95% confidence that the true rate (ASR) falls between lower and upper confidence interval values shown by the 'whiskers' in the charts. Two rates are considered significantly different (at the 0.05 level) if their confidence intervals do not overlap. Otherwise, if their confidence intervals overlap, the two rates are not significantly different.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

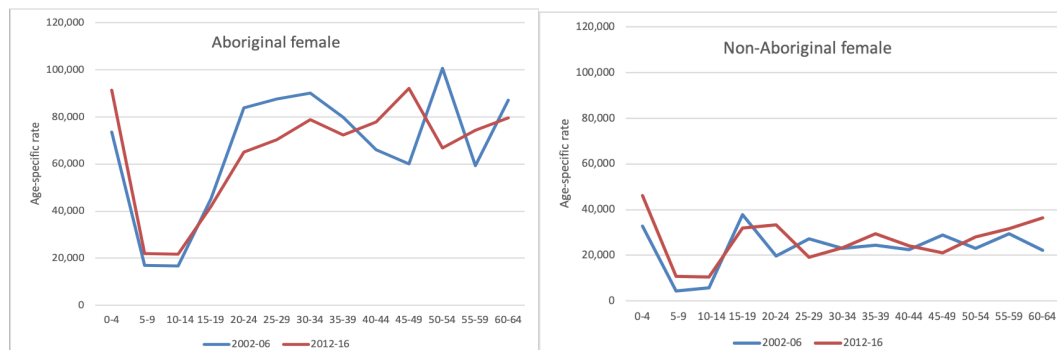
As for age-specific rates of hospitalisation (Figures 7.11 and 7.12), these are typically high among infants and in Western Australia the most common reasons for hospitalisation among infants are infectious and parasitic diseases, accidental injuries and respiratory conditions (Commonwealth of Australia 2016: 6.33). Following a dip in school-age years, Aboriginal hospitalisation rates (excluding dialysis) accelerate from age 20 onwards and continue to rise steadily throughout adulthood. Comparison with non-Aboriginal rates shows clearly that Aboriginal rates are substantially higher at all ages. Episodes of hospital care therefore provide a common backdrop for Aboriginal residents of the East Kimberley affecting them either directly as in-patients or as carers of other family members who are. However, there does appear to have been some shift in the distribution of morbidity by age with a decrease in rates among males from teenage through to age 40 and for females from age 20 to 40. These are followed by a notable rise and then a fall in rates at older ages. By contrast, non-Aboriginal age-specific rates are far more stable over time and less variable by age. As a consequence, Aboriginal age-specific rates are often much higher than those recorded for non-Aboriginal residents, especially among males. This gap peaks among those aged 45-49 years at which point Aboriginal hospitalisation for Aboriginal males is almost 7 times higher than for other males and more than 4 times higher for Aboriginal females than for other females (Figure 7.13).

Figure 7.11 Age-specific Aboriginal and Non-Aboriginal male hospitalisation rates (excluding dialysis): East Kimberley region, 2002-06 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health Rates per 100,000 persons per year

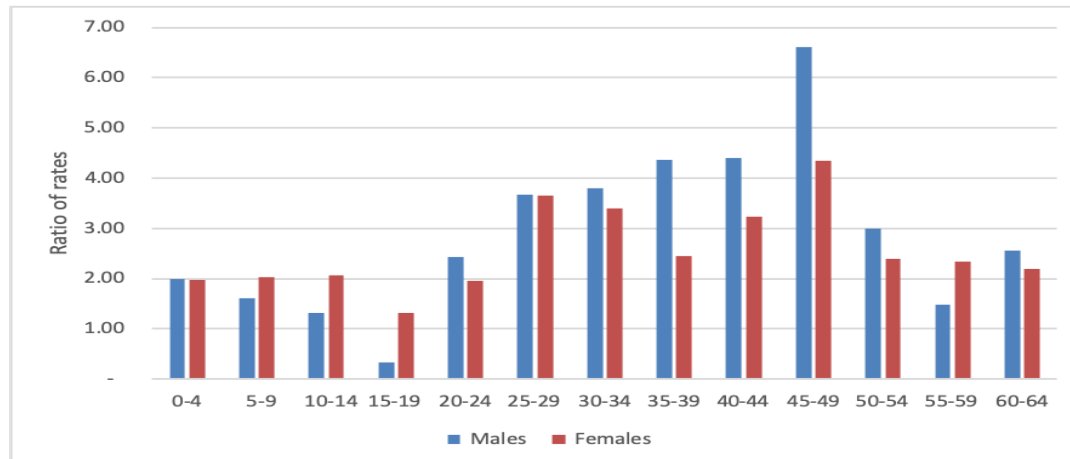
Figure 7.12 Age-specific Aboriginal and Non-Aboriginal female hospitalisation rates (excluding dialysis): East Kimberley region, 2002-06 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health Rates per 100,000 persons per year

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

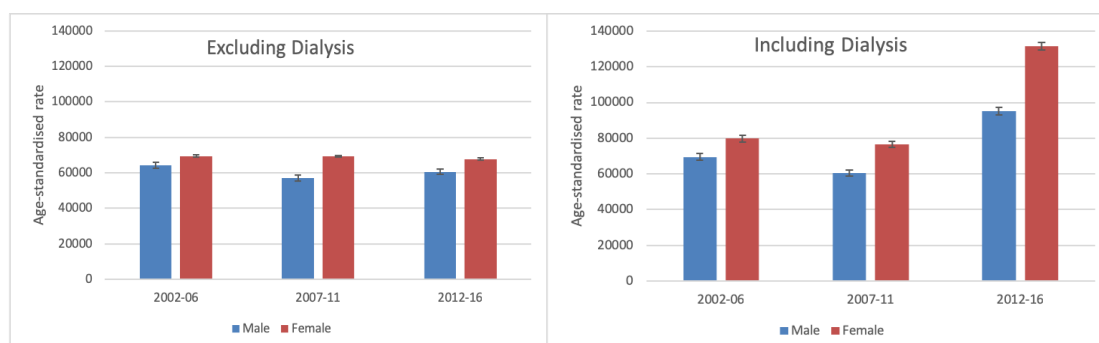
Figure 7.13 Ratios of Aboriginal to Non-Aboriginal age-specific hospitalisation rates (excluding dialysis): East Kimberley region, 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health

So far, we have excluded separations due to kidney dialysis for end-stage renal disease in order to obtain a sense of the underlying prevalence of morbidity. Dialysis separations tend to skew the overall picture because of their frequency and concentration at older ages. The impact of adding these is shown in Figure 7.14 by presenting Aboriginal age-standardised hospitalisation rates with and without hospitalisations for dialysis. Between 2002 and 2011, hospitalisation rates including dialysis were only marginally above those excluding dialysis with female rates somewhat higher than male rates but generally indicating low overall access to renal treatment. For the period 2012-16, however, a clear and substantial rise in hospitalisation rates is evident due to the inclusion of dialysis treatments and this no doubt reflects the establishment of the Kununurra Renal Health Centre in 2013. Once again, female rates appear as significantly higher than for males.

Figure 7.14 Aboriginal male and female hospitalisation rates excluding and including dialysis: East Kimberley region, 2002-06, 2007-12, 2012-16

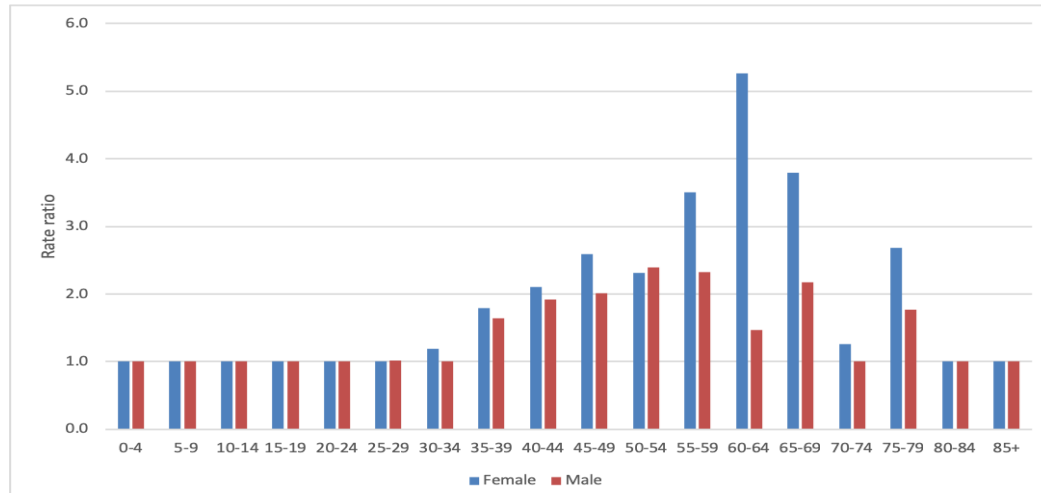


Source: Epidemiology Branch of the Public and Aboriginal Health Division of the Western Australia Department of Health. Rates per 100,000 persons per year

To examine the age pattern of dialysis hospitalisations, we can use the same comparison of Aboriginal rates with and without dialysis using age-specific rates and express those including dialysis as a ratio of those excluding dialysis. A ratio of 1.0 indicates parity and any result higher than one provides a measure of the incidence of dialysis in morbidity (Figure 7.15). This shows that dialysis treatments commence for both males and females in the 35-39 age range and rise to a peak at 50-54 years among males and 60-64 years among females and then decline steadily to age 79. At all ages, rate ratios

for females are highest and they are often very high with the hospitalisation rate including dialysis more than 5 times greater than the rate without dialysis among females aged 60-64 years.

Figure 7.15 Rate ratios of age-specific Aboriginal hospitalisation rates (including dialysis) to age-specific Aboriginal hospitalisation rates (excluding dialysis): East Kimberley region, 2012-2016



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

In 2002-06, there were 1,092 dialysis separations recorded for Aboriginal patients from the East Kimberley; by 2007-12 this hadn't changed with 1,061 recorded. However, during the period 2012-16 this number had increased almost ten-fold to reach 11,012. As mentioned, these figures refer to episodes of care, not to individuals, but the number of individuals invested in each episode is no doubt much greater than the patients themselves as the latter require transport and family support during treatment. None of these wider population impacts are capable of direct estimation but are presumably captured to some degree by general estimates of carer numbers that are derived from census data. These are provided in a later section.

Causes of hospitalisation

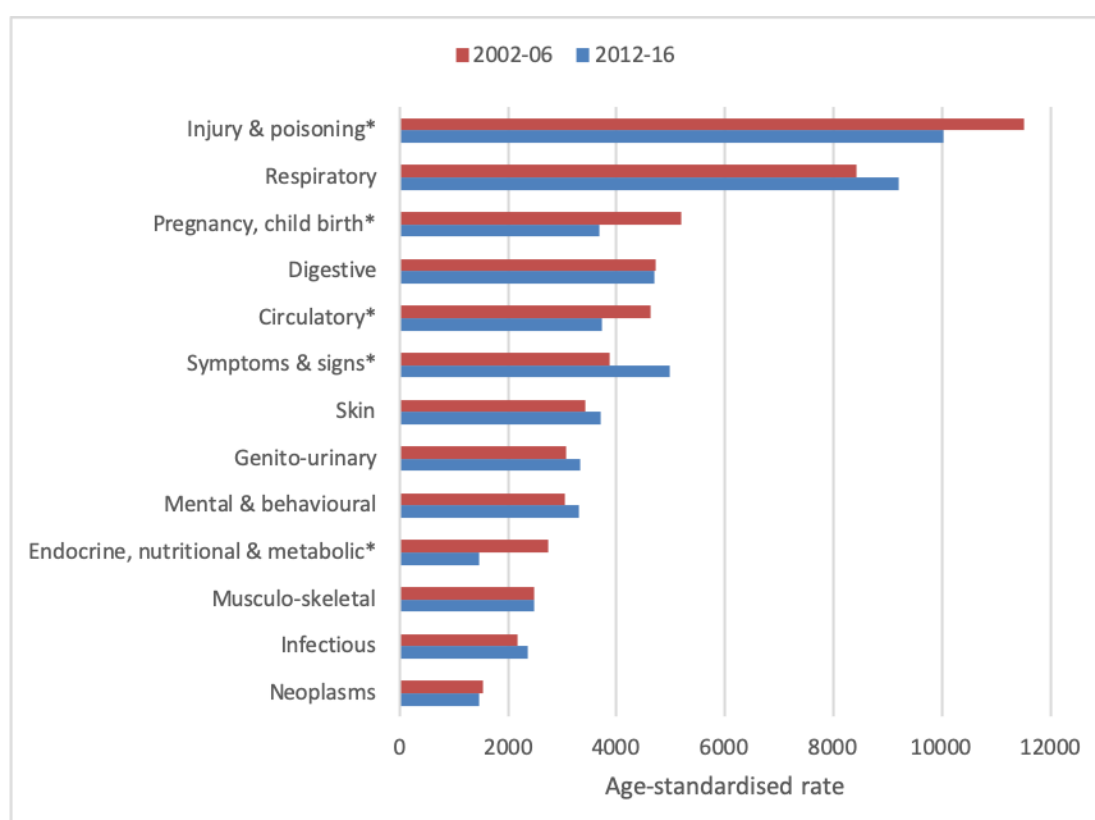
In all three reporting periods, the most common reason for the hospitalisation of Aboriginal people from the East Kimberley was 'Factors influencing health status and contact with health services' (mostly for care involving dialysis). As we have seen, this single cause accounted for almost one-third of all Aboriginal separations in 2012-16. If we put these to one side and focus on remaining causes, we can examine these using the ICD-10-AM principal diagnosis classifications. ICD-10-AM is the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification. It is part of the international standard for defining and reporting diseases and health conditions. The classification is based around diagnostic categories and principal diagnoses are those considered to be chiefly responsible for an episode of patient care. Major diagnoses provide a high-level description of morbidity while minor diagnoses provide for more detailed analysis.

Figure 7.16 shows age-standardised Aboriginal hospitalisation rates by leading cause in 2002-06 and it illustrates how these had changed by 2012-16. The first point to note is that the leading causes identified in 2002-06 remained essentially the same in 2012-16. Admissions due to injury and poisoning still dominate including due to factors but

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there has been a significant decline in this overall rate since 2002-06. Also noteworthy is a significant decline in the rate for circulatory diseases as well as for endocrine, nutritional and metabolic diseases. This latter was due largely to a drop in the ASR for diabetes mellitus from 2032 per 100,000 in 2002-06 to 801 in 2012-16. The significant drop in hospitalisations for pregnancy and childbirth seems consistent with the decline in fertility observed in the analysis of demographic change. On the other hand, rates for most other conditions were slightly higher in 2012-16 although the only statistically significant increase was for hospitalisations related to symptoms, signs and abnormal clinical and laboratory findings.

Figure 7.16 Age-standardised Aboriginal hospitalisation rates by leading causes (ICD Major 10)^a (excluding dialysis): East Kimberley region, 2002-06 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

a. Principal diagnoses (major ICD-10-AM) ranked by leading cause in 2002-06

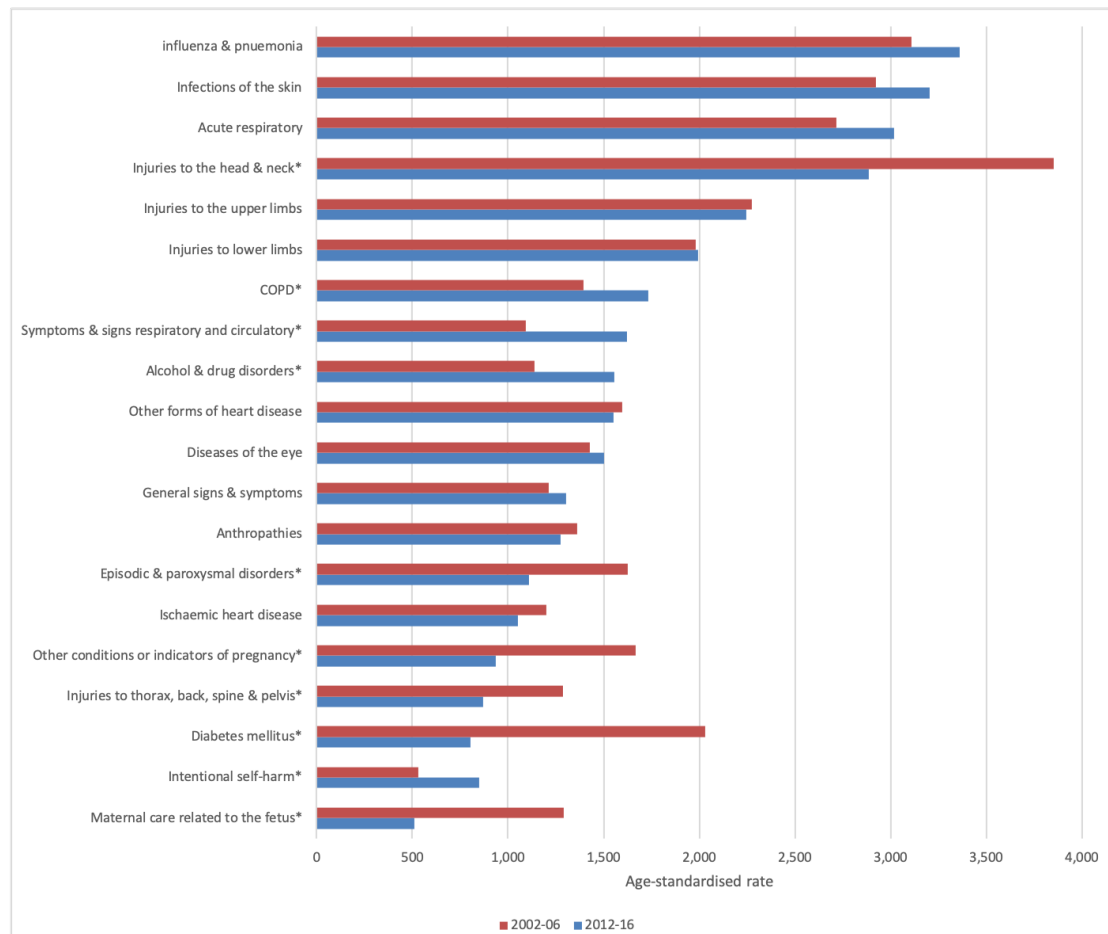
* Significant change at the 0.05 level

Figure 7.17 reveals the changes by 2012-2016 in the top 20 causes of hospitalisation in 2002-2006 according to the more detailed measure of ICD-10-AM (minor10). In effect, these are the more precise disease diagnoses underlying the data shown in Figure 7.16. Diseases with the highest ASRs in 2002-06 (influenza and pneumonia, skin infections and acute respiratory infections) tended to record even higher rates in 2012-16, though none of these increases were significant. The exception to this observation was for injuries to the head and neck which were the single leading cause of hospitalisation in 2002-06 but by 2012-16 had declined significantly, although rates for injuries to other parts of the body remained relatively high and unchanged. Increases in rates that were significant included chronic obstructive pulmonary disease (COPD), symptoms and signs of respiratory and circulatory diseases, alcohol and drug disorders and intentional self-harm. On the other hand, significant decreases were recorded for episodic and

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paroxysmal disorders, injuries to the thorax, back, spine and pelvis, diabetes mellitus and maternal care related to the foetus.

Figure 7.17 Top 20 Age-standardised hospitalisation rates by principal diagnosis (ICD Minor 10)^a (excluding dialysis) for Aboriginal residents of the East Kimberley region: 2002-06 and 2012-16



Source: *Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year*

a. *Principal diagnoses (major ICD-10-AM) ranked by leading cause in 2002-06*

* *Significant change at the 0.05 level*

Alcohol and drug-related Emergency Department presentations

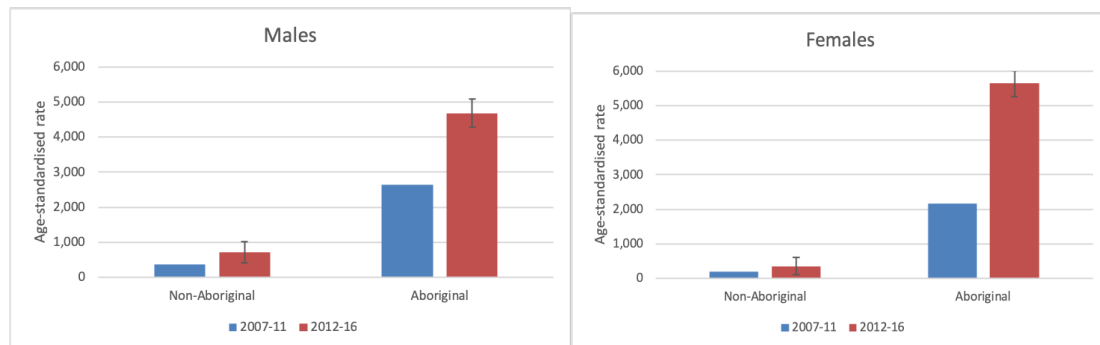
As shown in Figure 7.17 there has been a statistically significant increase in hospitalisations for alcohol and drug disorders since 2002-06. These data can now be augmented by the recording and coding of Emergency Department (ED) presentations using a Major Diagnostic Block (MDB) to identify alcohol/drug related presentations. Because this data set is still emerging and data entry systems are still being developed, a couple of issues compromise the interpretation of trends over time.

First of all, unlike hospital data where the MDB is assigned based on ICD codes using strict coding rules, in Emergency Departments, the MDB is assigned by the attending clinician and this can lead to inconsistencies over time due to subjectivity. It seems likely that with increasing knowledge of alcohol/drug abuse as a public health issue, clinicians may be increasingly alert to the prospect and thus more ready to assign that code to an ED presentation if it appears alcohol/drug-related. Second, in more remote hospitals, as in the East Kimberley, the same staff may attend both hospital and

emergency cases so there can be a blurring of lines between the two with some ED presentations being recorded as hospitalisations and vice versa. This can also affect the numbers. In short, caution should be applied when examining rates of presentations over time.

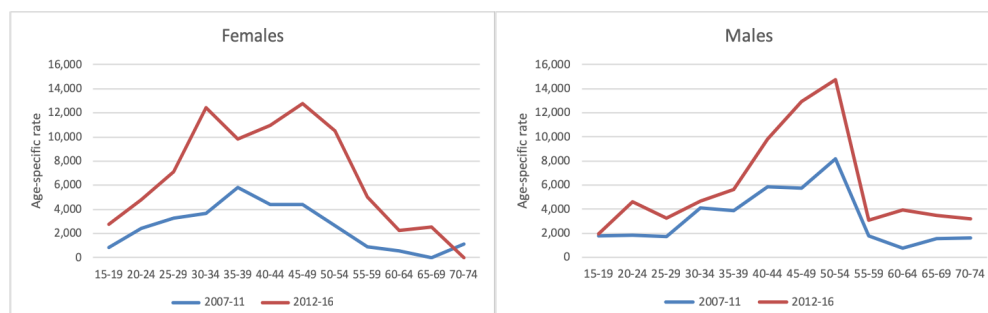
Nonetheless, for whatever reason, whether administrative or otherwise, alcohol and drug related ED presentations by Aboriginal people were much higher in 2012-16 than in 2007-11 (Figure 7.18) with no statistical difference between male and female rates. This observation would seem to back up the significantly higher hospitalisation rate for drug and alcohol disorders shown in Figure 7.17. If anything, the rate among females has risen the most. Figure 7.19 shows the age-specific distribution of these ED rates. Presentations for both males and females appear much higher in 2012-16 at all ages but the greatest shift from 2007-2011 is evident among females. Rates for females now peak much earlier than for males and are sustained at high levels for longer despite both sets of rates declining rapidly beyond 55 years of age.

Figure 7.18 Age-standardised rates of alcohol/drug-related emergency department presentations for Aboriginal and non-Aboriginal males and females: East Kimberley region, 2007-11 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Figure 7.19 Age-specific rates of alcohol/drug-related emergency department presentations for Aboriginal males and females: East Kimberley region, 2007-11 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Alcohol-attributable hospitalisations

WA-specific aetiologic fractions (AFs) have been applied to hospitalisation data by WA Health in order to derive alcohol-attributable proportions. For this purpose, an AF is a proportion of a hospitalisation for a particular condition that is attributable to alcohol use. Its value is dependent on condition, age, gender, Aboriginality and remoteness of residence (see Van Diemen et al. 2017). Table 7.5 provides a list of the

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specific alcohol-attributable conditions that have been applied to data for the East Kimberley.

Table 7.5 WA-specific alcohol-attributable hospitalisation conditions

Broad categories (n=12)	Specific alcohol-attributable condition (n=44)
Alcoholic liver disease	Alcoholic liver disease
Other digestive system diseases	Other liver diseases Alcoholic pancreatitis acute Alcoholic pancreatitis chronic Pancreatitis acute Pancreatitis chronic Alcoholic gastritis Oesophageal varices Gastro-oesophageal laceration-haemorrhage syndrome
Alcoholic mental and neurological disorders	Alcoholic Mental and behavioural disorders Epilepsy Alcoholic polyneuropathy or nervous system degeneration
Cancers	Mouth & Oropharyngeal cancer Oesophageal cancer Laryngeal cancer Liver cancer Colorectal cancer Pancreatic cancer Breast Cancer
Stroke	Haemorrhagic stroke Unspecified stroke Ischaemic stroke
Other alcohol-related diseases	Ischaemic heart disease * Cardiac arrhythmia Heart failure Alcoholic cardiomyopathy Hypertension Respiratory infections Foetus & newborn affected by maternal use of alcohol FASD & Maternal care for damage to foetus from alcohol Alcoholic myopathy or pseudo-Cushing disease
Motor vehicle accident injuries	Motor vehicle accident injuries
Falls	Falls
Self-inflicted injuries	Self-inflicted injuries
Assaults/Abuses	Adult assault/abuse Child abuse physical Child abuse neglect Child abuse sexual Child abuse emotional psychological Child abuse Maltreatment syndrome, unspecified
Poisoning	Poisoning
Other alcohol-related injuries	Drowning Fires, burns, scalds Other unintentional injuries

Source: Van Diemen et al. 2017.

Based on these AF estimates, Table 7.6 shows age-standardised rates of alcohol-attributable hospitalisations in the East Kimberley for Aboriginal and non-Aboriginal males and females from 2002-06 to 2012-16. Unlike the ED presentation data, the rates for males are consistently higher than for females although the gap is closing as the male rate has declined and the female rate risen since 2002-06. These different trajectories are confirmed by the trend in ratios between Aboriginal and other males and females with the gap in rates between males narrowing and that between females rising.

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Table 7.6 Age-standardised rates of alcohol-attributable hospitalisations: East Kimberley, 2002-06, 2007-11, 2012-16

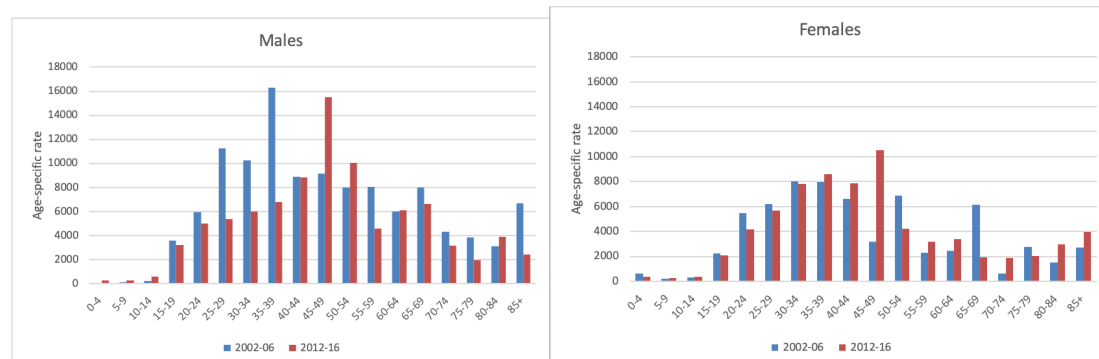
	Age-standardised rates		Ratios		
	Aboriginal Males	Aboriginal Females	Aboriginal males/Aboriginal females	Males Aboriginal/non-Aboriginal	Females Aboriginal/non-Aboriginal
2002-06	6778.8	4052.2	1.7	7.9	8.7
2007-11	6106.9	4767.8	1.3	4.6	9.5
2012-16	5411.8	4362.0	1.2	4.2	10.2

Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Note: Numbers of hospitalisations attributable to alcohol are estimates based on aetiologic fractions. They are not actual counts.

Elements of these trends also emerge from changes in age-specific rates (Figure 7.20). Despite slight reduction in rates among 20-29 year-olds, and a notable spike among 45-49 year-olds, female rates have remained largely unchanged although rates also fell at ages 50-54 and 65-69. By contrast, male rates have substantially reduced at younger adult ages between 25 and 39 years and while the same spike appears at ages 45-49 years, most subsequent age groups also show a reduction in rates. In combination with the, admittedly, tentative trend data on alcohol and drug-related ED presentations, these gender shifts in alcohol raise urgent issues regarding female exposure to alcohol especially in the context of public health efforts regarding FASD.

Figure 7.20 Age-specific Aboriginal male and female rates of alcohol-attributable hospitalisation: East Kimberley region, 2002-06 and 2012-16



Source: Epidemiology Branch of the Public and Aboriginal Health Division of the WA Department of Health. Rates per 100,000 persons per year

Note: Numbers of hospitalisations attributable to alcohol are estimates based on aetiologic fractions. They are not actual counts.

Disability

Aside from the debilitating effects of chronic morbidity, one element of health status that can have a direct impact on the capacity of individuals to participate in economic activity is disability, defined as any continuing condition that restricts everyday activities. Such restriction can be due to an intellectual, cognitive, neurological, sensory or physical impairment, or a combination of these; it may be permanent or episodic in nature and it can result in substantially reduced capacity of individuals for communication, social interaction, learning or mobility and a need for continuing support services.

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Establishing a time series of Aboriginal people in the East Kimberley with a disability is difficult using public access data. The main consistent source is the five-yearly census that has included a question on disability since 2006. The census asks whether individuals need someone to help them with self-care activities, with body movement activities, and with communication activities. It then asks about the reasons for such needs such as short or long-term health conditions, disability or old age. From these answers it constructs a census output variable on core activity need for assistance that captures profound or severe core activity limitation (and omits moderate and mild limitations) and which we can use here to construct profiles and estimates of such disability for East Kimberley residents.

Unfortunately, the non-response rate among Aboriginal respondents has risen for this variable from 4% to 12% over the past three censuses. If we add to this the consistently high census undercount in the region we are clearly dealing with only a sample of the population using census count data. Nonetheless, as with other variables, the census does at least provide a consistent methodology for establishing rates of disability over time and we can use these to derive crude estimates of numbers using post-census population estimates. Table 7.7 shows these census-based rates of disability for Aboriginal and non-Aboriginal residents of the East Kimberley in 2006, 2011 and 2016 along with estimated levels.

Table 7.7 Census rates and estimated levels of Aboriginal and non-Aboriginal persons with a core activity need for assistance: East Kimberley region, 2006-2016

	2006	2011	2016
	Rates		
Aboriginal (1)	4.0	4.6	5.2
Non-Aboriginal (2)	1.5	1.2	1.7
Ratio (1/2)	2.7	3.8	3.1
	Estimated levels		
Aboriginal	226	301	311
Non-Aboriginal	74	66	86
Total	300	367	397
Aboriginal % of total	75.3	82.0	78.3

*Source: ABS Census of Population and Housing 2006, 2011 and 2016
Estimates based on ABS ERPs*

The recorded rate of core activity need for assistance among Aboriginal people in the East Kimberley has steadily risen from 4.0% in 2006 to 5.2% in 2016. Among Aboriginal people generally in Western Australia it was 5.3% in 2016 and in Australia as a whole it was 7.2%. While the rate of disability among Aboriginal residents has been consistently around three times higher than the figure recorded for non-Aboriginal residents of the region since 2001, it has to be said that this non-Aboriginal rate is very low compared to the overall national rate of 5.5% in 2016. As a consequence, Aboriginal people have consistently accounted for more than three quarters of those in the region with a disability despite comprising just over half of the population.

It is interesting to compare the 2016 estimate of 311 Aboriginal persons with a disability shown in Table 7.7 with the much higher figure of 637 adults in receipt of a Disability Support Pension from Centrelink at around the same time as the 2016 census (Table 4.14). Aside from the likelihood of census undercount, this discrepancy may arise because the DSS administrative net around disability is more encompassing and includes moderate and mild disabilities compared to the census question which is

focused on the more severe end of the disability spectrum. Nonetheless, the observation that the census-derived rate of disability has steadily risen since 2006 is of interest as it partly matches findings from DSS administrative data that show a substantial rise in the number of payments since 2006. At the same time, we should be reminded that the use of administrative data for benchmarking and tracking over time is always a challenge due to the potential impact of changes to eligibility rules and administrative practice.

Further benchmarking for the level of disability in the region is provided by new estimates of projected need for National Disability Insurance Scheme (NDIS) services and expenditure in the East Kimberley. At the time of writing the roll-out of NDIS packages in the region was still underway and comprehensive data on progress were not fully available as the transfer of clients from the Western Australian disability scheme to the NDIS was incomplete. Nonetheless, the NDIS has developed forecasts of likely demand for services and expenditure in the East Kimberley through to 2023 and while these data refer to all clients it is anticipated that 80% of these in the Wyndham-East Kimberley LGA would be Aboriginal and 100% in Halls Creek LGA (K. Hough, Far North Community Services, Broome, pers. comm., 10th July, 2019). Access to these forecasts is available via the NDIS demand map (<https://blcw.dss.gov.au/ndis-demand-map#ndis>).

While this shows the number of likely NDIS participants by 2023, these data are provided as a range due to expected variability in levels of take-up of NDIS services. In the East Kimberley this range is expected to be between 209 and 369 participants. It is interesting to note this higher estimate as it is reasonably close to the census-based estimate for 2016 of 397 shown in Table 7.7. Given that the census definition of ‘core activity need for assistance’, and the NDIS focus on people who have a significant impairment to their functional capacity, the closeness of these estimates is encouraging. If we use this upper estimate, then, the value of forecast demand for NDIS services is calculated to be around \$23.5m by 2023. Expected distribution of this expenditure across different areas of service demand is shown in Table 7.8.

While the lion’s share of expenditure is expected to be on daily at-home living support, the remainder will be mostly for a variety of additional more community-wide support structures as well as for high-needs care. Of particular interest is forecast demand for an NDIS workforce in the region. By 2023, expected employment demand will be for between 180-217 workers with 75% of these positions allocated for personal carers and the rest for occupational therapists, physiotherapists, professional service workers, psychologists, speech therapists and audiologists. Just as a side-observation, this would amount to around 150 personal care workers which would represent a substantial contribution to the projected total of 210 extra jobs required across the region by 2031 in order to maintain the Aboriginal employment rate at its 2016 level (see Table 3.17). As for the sorts of personal care skills required, some guidance is provided by the fact that more than half of anticipated participants in the scheme (58%) are expected to be in just three categories of disability—intellectual disability, autism and mental illness associated disability (Table 7.9).

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Table 7.8 NDIS forecasts of expenditure: East Kimberley region, 2023

Category of expenditure	Percent of expenditure
Daily Living Support in Shared Accommodation	47.2
Other Supports	9.2
Personal Care	9.1
Assistance with Community Activities	8.6
High-Needs Personal Care	6.6
Capital	3.6
Other Support Coordination and Management	3.3
Therapy	3.3
Group Centre Activities	3.1
Assistance with Planning and Coordination	2.8
Employment support	2.2
Early childhood supports	1.2

Source: <https://blcw.dss.gov.au/ndis-demand-map#ndis>

Table 7.9 NDIS forecasts of participant distribution by disability category: East Kimberley region, 2023

Disability category	Percent of participants
Intellectual disability	21.5
Autism	19.8
Mental illness associated disability	16.2
Down syndrome	7.8
Neurological disorder	7.6
Disability caused by injury	7.5
Vision, hearing speech, other sensory impairment	7.5
Developmental delay	7.3
Physical disabilities	4.9

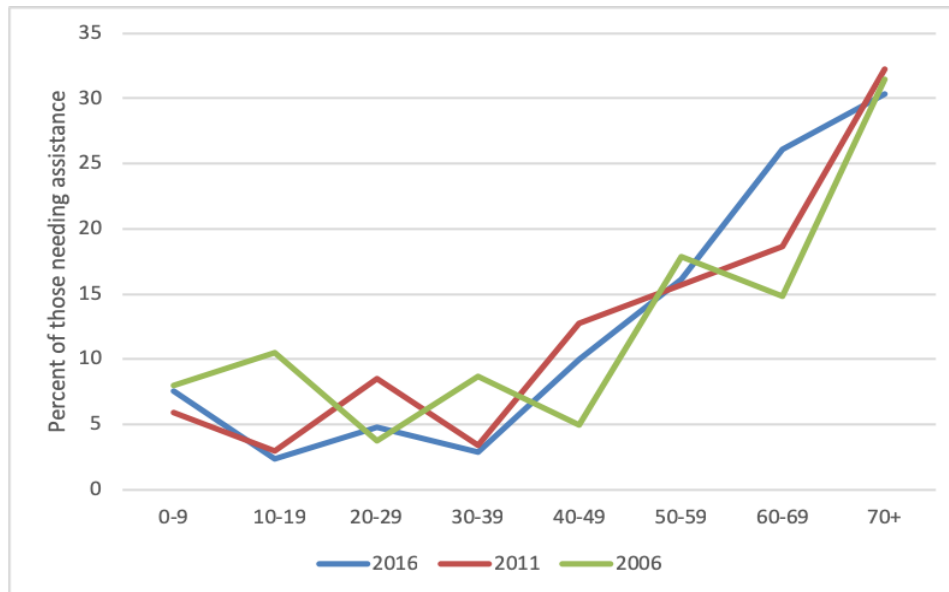
Source: <https://blcw.dss.gov.au/ndis-demand-map#ndis>

As expected, the prevalence of disability in the population increases with age. To a large extent, disability in Australia has been characterised as a condition associated mostly with old, or at least with increasing, age. Nationally, in 2016, 60% of all persons with a disability based on the census definition were over the age of 60 years.

This is similar to the figure of 56% recorded for Aboriginal residents of the East Kimberley and this aged pattern of disability has been fairly consistent over time as shown in Figure 7.21. However, for Indigenous people generally in Australia, census reported disability was more evenly spread across the life-span with only 40% of instances over the age of 60 years. It is not clear why the East Kimberley is different from this although it is worth noting that non-response to the census question on needing assistance is relatively high for younger ages.

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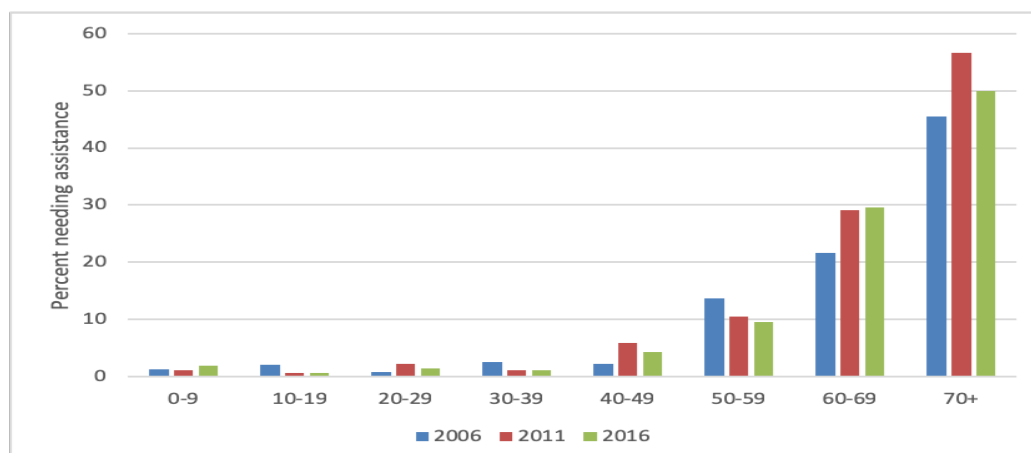
Figure 7.21 Proportion of Aboriginal residents with a core activity need for assistance in different age groups: East Kimberley region, 2006-2016



Source: ABS Census of Population and Housing 2006, 2011 and 2016

Figure 7.22 shows the age distribution of East Kimberley Aboriginal residents who had a core activity need for assistance at each census since 2006. While disability is concentrated among those of older age, especially over 50 years, there are signs that rates at older age are declining. Nonetheless, around 10% of those age 50-59, 30% of those aged 60-69 and 50% of those over the age of 70 years still report a core activity need for assistance. Given the projected excess growth in these very age groups over coming years it would appear that the numbers of persons with a disability will continue to grow even if the rates of disability remain the same or even improve.

Figure 7.22 Age distribution of Aboriginal residents with a core activity need for assistance: East Kimberley region, 2006-2016



Source: ABS Census of Population and Housing 2006, 2011 and 2016

Estimates of numbers of persons with a profound or severe disability provide one measure of potential health impacts on regional economic participation. By definition, the census question on core activity need for assistance suggests that others are implicated as well by making time available to provide such assistance. Accordingly, the census also asks whether individuals spent time (over the previous two weeks)

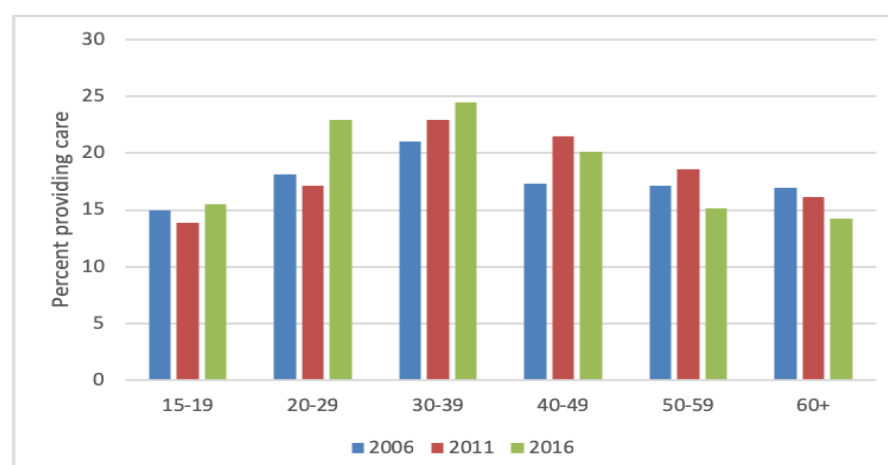
providing unpaid assistance to family members or others because of a disability, a long-term health condition, or problems related to old age. Unfortunately, no estimate of how much time spent in caring is acquired via this question, although the chronic nature of the health conditions referred to at least suggests that such care is ongoing. A good example here may be drawn from the data on dialysis separations. As mentioned, these figures refer to episodes of care, not to individuals, but, as already pointed out, the number of persons involved in each episode is no doubt much greater than the patients themselves as those in care require transport and family support during regular episodes of treatment. The census question on provision of care therefore provides some further means of measuring potential health impacts on regional economic participation by identifying those in the population who may be time-restricted by caring for family members and others.

The most direct measure of this is provided by DSS records on clients in receipt of Carer Payments and Carer Allowance. These provide direct income support to people who are unable to engage in regular paid employment because they provide full time daily care to someone with a severe disability or medical condition, or to someone who is frail aged, or they provide a supplementary payment for carers who provide daily care at home for a person with a disability. In 2016, a total of 260 Aboriginal adults in the East Kimberley (6.3% of the estimated adult population) received such payments (Table 4.14). By contrast, 2016 census data indicate that 543 Aboriginal adults (13% of those counted) provided some unpaid home-based care to family members or others because of a disability, long-term illness or problems related to old age. This translates into an estimate of 829 such persons which suggests that those in receipt of DSS Carer payments and allowances are a sub-set of the total number of individuals engaged in providing care and so the impact of home-based caring on lowering more general economic participation may be even more extensive than DSS data suggest.

One clue is provided by data on the proportion of each age group involved in this care as shown in Figure 7.23. This reveals that for those people providing care, the highest proportions are drawn from the prime working-age groups between 30 and 59 years, although there is some indication that the burden of care has shifted since 2006 more towards those in the younger working-age groups below 40 years. Ironically, this shift might itself be one consequence of higher labour force participation observed among those of older working-age, especially women since most carers in the East Kimberley have been women.

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Figure 7.23 Aboriginal residents providing care, help or assistance* to family members or others as a percent of age group: East Kimberley region, 2006, 2011 and 2016



Source: ABS Census of Population and Housing 2006, 2011 and 2016

* Due to a disability, long-term health condition or problems related to old age. Includes persons on Carer Allowance or Carer Payment

Child welfare

A different sort of care is provided for children who are referred to the WA Department of Child Protection and Family Support (DCPFS) that now forms part of the Department of Communities. This department provides a range of child safety and family support services to children and their families. The approach is to work with families to build safety around their children, enabling them to remain at home rather than being taken into care. Where this is not possible, the Department works with community sector organisations and foster carers to provide a safe and protective environment for vulnerable children and young people. Data on the number of Aboriginal children from the East Kimberley who are placed by the Department into foster/kinship care arrangements are shown in Table 7.10 for the period 2011-2016.

Table 7.10 Number of Aboriginal children in foster/kinship care and distribution by duration of care: East Kimberley region, 2011-2016

Duration	2011	2012	2013	2014	2015	2016
< 1 month	4.9	0.0	1.0	0.9	0.0	1.9
1-6 months	6.6	14.0	8.6	10.7	16.7	15.2
6-12 months	14.8	8.4	3.8	8.0	10.4	7.6
1-2 years	12.3	20.6	21.0	11.6	14.6	22.2
2-5 years	50.0	35.5	38.1	36.6	31.9	25.3
>5 years	11.5	21.5	27.6	32.1	26.4	27.8
Total %	100.0	100.0	100.0	100.0	100.0	100.0
Total (n)	122	107	105	112	144	158

Source: WA Department of Communities

Note: In 2008, the number in care was 91, in 2009 it was 119 and in 2010 it was 122. Data were not available on the breakdown of these figures into duration of care

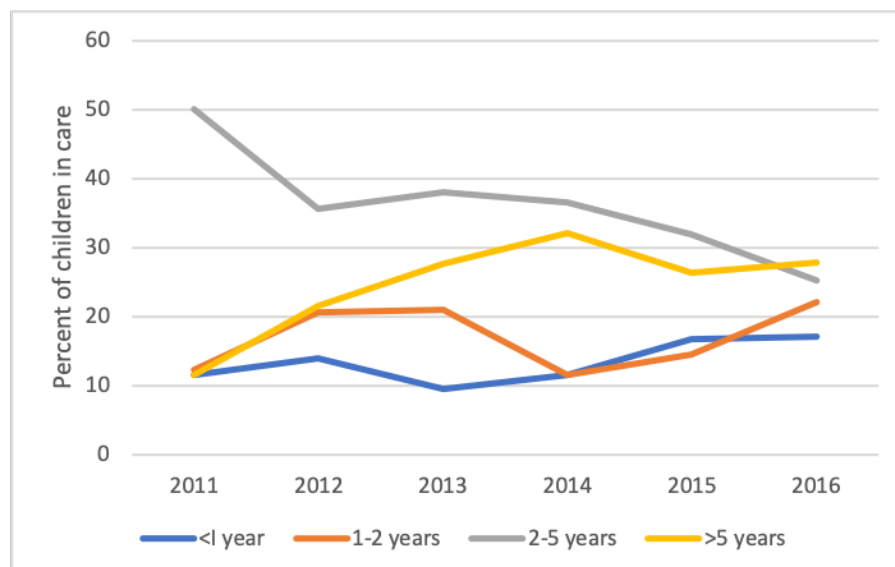
In 2011, a total of 122 Aboriginal children were in care and this number represented 4.5% of the regional Aboriginal population aged 0-17 years. By 2016, the number had increased by 30% to 158 and the proportion of the eligible population had increased to 7% (the growth in the number in care is much higher at 74% if 2008 is used as the base year). Creating a reliable time series here is somewhat compromised by the fact that these are stock figures (at June 30 each year) across a flow of individuals who are experiencing a wide range of periods in care and so the levels vary over time partly due

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to change in the prevalence of different care periods. It should also be pointed out that numbers recorded in care at a point in time refer to the cumulative apex of a cascading administrative process that starts with contacts to the Department of Child Protection and works progressively down to the final step of placing a child in care. In 2016-17, for example, a total of 1,685 contacts were made in the East Kimberley to the Department of Child Protection. Out of these 1,094 (65%) were designated as involving Aboriginal children of concern. Of these, there were 559 notifications of child abuse which led to 373 safety and wellbeing assessments leading to 158 substantiations and finally 40 children entering care (BBY 2018).

While comparing numbers in care over time is tricky, so too is analysing change in the periods of time spent in care as these are cumulative too. The data shown in Table 7.10 includes categories of short care periods of less than one year which tends to obscure interpretation. Figure 7.24 simplifies this by grouping all care periods of less than one year together and presenting the results in graphic form. This reveals a growing incidence over time of children in care who have been in care for long rather than short periods of time. Of particular note is that those in care for between 2 and 5 years have fallen as a proportion from 50% of cases in 2011 to 25% in 2016 while those in care for more than 5 years have risen from 11% to 28%.

Figure 7.24 Distribution of Aboriginal children in foster/kinship care by duration of care: East Kimberley region, 2011-2016



Source: WA Department of Communities

Given these figures on the number of children placed in care, including the fact that a majority of care periods are for more than 12 months, one question that arises against the background of net migration loss of Aboriginal children is whether some of this loss might be due to children being placed in care outside of the region? The Department of Child Protection advises that while this can occur the numbers are low and, in any event, when a placement outside the district is lasting the case is usually prepared for transfer to the district where the child resides and so these longer-term movements would not show up in child protection data for the East Kimberley. This presents a problem for regional demographic accounting not unlike that created by children attending school away from the region and so the matter of impact over time on population levels remains unresolved.

8. Crime and justice

Crime statistics in Western Australia are available from a variety of sources reflecting different stages of the public's interaction with the criminal justice system. The initiating factor, of course, is contact with the police either by way of reporting an offence, or as individuals are apprehended by arrest, summons or court warrant. Such actions yield a range of data concerning the nature of offences and offenders with separate reporting for juveniles (aged 10-17 years), and adults (18+). Individuals who are charged with an offence are further processed by the courts (a charge being an allegation laid by the police before the court or other prosecuting agency that a person has committed a criminal offence). Statistics relating to the activities of the Children's Court and Magistrates Court are provided by the WA Department of Justice. As for those charged who are found guilty of an offence, imprisonment data are available from the Department of Corrective Services while non-custodial sentencing data can be extracted from the records of the Department of Justice.

According to the Department of Justice, the capture and storage of data on Indigenous status that is provided to the courts by the WA Police Force has only recently been improved to a point where they feel confident in publicly releasing such data. Consequently, within the timeframe set out for the present exercise, it was not possible to acquire validated data for any period prior to 2012/13 and so the time series presented only covers individual years over the most recent reporting period of 2012/13 to 2016/17. This data quality issue is also recognised by the ABS who do not include data from Western Australia in national reporting of Indigenous crime and justice statistics (ABS 2017d, 2018b,c). Nonetheless, for the baseline report (Taylor 2004) both police and courts data for Aboriginal people in the East Kimberley were provided via the (now defunct) Crime Research Centre at the University of Western Australia, the WA Department of Justice and the WA Office of Crime Prevention.

Using these latter data it was noted that interaction with the police, and subsequently with the court system and various custodial institutions, was a pervasive element of Aboriginal social and economic life in the East Kimberley. From the latest data it is clear that this remains the case. At the apex of the criminal justice system are those received into custody or detention—in 2016/17 this amounted to 5% of the East Kimberley Aboriginal population aged 18+. However, lower-level interactions with the system via police and the courts are more prevalent and the effects are felt widely throughout families, households and communities. At the same time, the actual individuals involved represent a fairly well-defined sub-set of the population as whole—they are predominantly male, of young working-age and they show signs of early engagement with police and the courts as youth. The evidence from the East Kimberley presented in Taylor (2004) was suggestive of a progression into the criminal justice system, not necessarily recidivist, but nonetheless subject to life cycle influences and procedural tendencies of the criminal justice system. The same can be seen today.

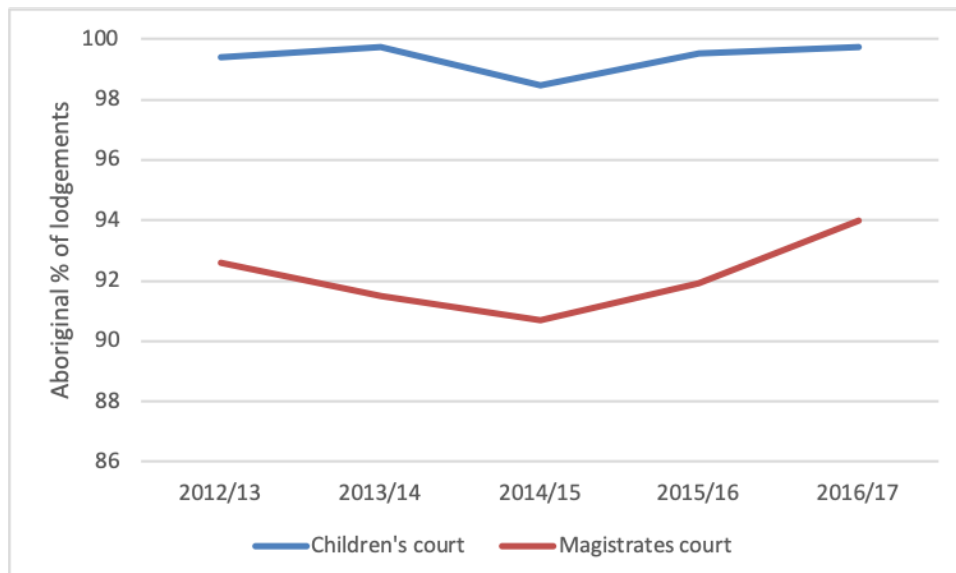
Before proceeding with an analysis of recent trends, it is worthwhile prefacing this with brief mention of select findings and recommendations of the 2017 Australian Law Reform Commission's inquiry into the incarceration rate of Aboriginal and Torres Strait Islander peoples (ALRC 2017). An overarching point made by this inquiry reiterates one that has often been stated in regard to social determinants of incarceration that work against Aboriginal people. These include many of the indicators of

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disadvantage outlined in preceding sections of the present report. As for outcomes in the criminal justice system, the point is also made that Aboriginal people continue to be heavily over-represented in the courts and prisons and that charges and convictions display distinct biases against Aboriginal people. All of these features are evident in data provided for the East Kimberley by the Western Australia Police and Western Australia Department of Justice. Among the recommendations tabled by the ALRC report is one calling for criminal justice targets. The data presented here for the East Kimberley provide a useful starting point for regional leaders in thinking through what such targets might focus on.

First of all, in case there is any doubt at all about the relevance of findings from the ALRC report to the situation in the East Kimberley, Figure 8.1 shows the level of over-representation of Aboriginal children and adults in the East Kimberley-based court system. Just about every criminal case brought to the Children's Court in the East Kimberley each year between 2012 and 2016 referred to an Aboriginal defendant. While the Aboriginal share of Magistrates Court cases is lower this is also extremely high and has averaged around 92% over the same period. To put these rates in perspective we should recall that Aboriginal people constitute 77% of children aged between 10 and 17 years in the East Kimberley and 48% of adults over 18 years. In 2016, at the time of the census, a total of 2,377 Aboriginal adults were held in custody in prisons in Western Australia accounting for fully 38% of the total prison population at that time (Government of Western Australia 2016). Those from the East Kimberley accounted for 8% of these which is slightly higher than their 6% share of the Aboriginal adult population of Western Australia.

Figure 8.1 Criminal case lodgements against Aboriginal defendants as a percentage of all case lodgements in the East Kimberley-based Children's Court and Magistrates Court, 2012/13-2016/17



Source: WA Department of Justice

Reported crime

Data on different types of crime reported by victims to police were provided by the Business Intelligence and Analytics branch of the WA Police Force for the census years of 2006, 2011 and 2016. Before examining these data, a couple of shortcomings need to be pointed out. First of all, the levels and types of reported crime over time can be influenced by pro-active policing strategies aimed at encouraging the reporting of certain offences (such as domestic violence and sexual assault). Also, police may target certain offences from time to time (such as drug trafficking or traffic offences). While it may be theoretically possible to analyse the effect of such pro-active policing on reported crime this task lies beyond scope of the present exercise.

The second issue is more substantive as it refers to an inability to provide reliable data on reported crimes separately for Aboriginal and non-Aboriginal victims. This is because the Indigenous status of a large number of victims of crime is not reported in available statistics for the East Kimberley. In Halls Creek LGA in 2006, for example, as much as 25% of victims of offences against the person had no recorded Indigenous status. In Wyndham-East Kimberley, the figure was 27%. While both of these proportions reduced over time (to 20% and 10% respectively by 2016) this still leaves a good deal of uncertainty about the true level of crime impacts on different sections of the regional community.

This omission from the data is further heightened when it comes to profiling offences against property, including domestic burglary, stealing and property damage offences. Here, the Indigenous status of victims is consistently unrecorded in more than half of all cases in both LGAs leaving considerable doubt over the validity of any Aboriginal-specific results. In 2006, for example, as much as 78% of victims of property offences had no recorded Indigenous status while in Wyndham-East Kimberley it was 75%. This coverage improved over time but it was still around 55% in both areas in 2016. While the data clearly indicate that Aboriginal people are more likely to be the victims of offences against the person, especially from assaults and threatening behaviour, it is not possible to draw any such conclusion from data on offences against property even though it appears from the data that these are more likely to apply to non-Aboriginal victims. To salvage this situation, in order to say something meaningful about rates and trends, we need to use all reported offences for the whole population in each LGA. These are shown in Tables 8.1 and 8.2 for Halls Creek and Wyndham-East Kimberley respectively.

Table 8.1 Total population offence rates by type of offence in Halls Creek LGA, 2006-2016

Offence type	2006	2011	2016
Homicide	0.8	0.2	0.7
Sexual Offences	6.4	2.7	7.2
Assault	46.7	41.4	84.5
Threatening Behaviour	6.8	4.1	14.0
Deprivation of Liberty	1.0	0.5	0.4
Robbery	0.3	1.5	0.5
Total Offences Against the Person	62.0	50.5	107.4
Burglary (Dwelling)	26.5	29.1	18.3
Stealing of Motor Vehicle	7.1	9.3	12.6
Stealing (Other)	33.2	33.4	43.9
Damage	40.4	38.9	65.0
Total Offences Against Property	124.0	131.4	152.9
Drug Offences	12.9	11.7	21.9

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Offence type	2006	2011	2016
Receiving and Possession of Stolen Property	1.0	2.7	3.3
Regulated Weapons Offences	3.1	1.0	2.5
Graffiti	2.0	2.4	2.9
Fraud & Related Offences	0.4	1.0	9.1
Breach of Violence Restraint Order	9.6	15.1	21.1
Total Other Offences	28.9	33.9	61.0
Total Region Offences	215.0	215.7	321.3

Source: WA Police Force

Denominator is the ABS ERP for the total LGA population in each census year

Table 8.2 Total population offence rates by type of offence in Wyndham-East Kimberley LGA, 2006-2016

Offence type	2006	2011	2016
Homicide	0.3	0.0	0.6
Sexual Offences	8.1	2.6	14.4
Assault	99.5	46.2	87.2
Threatening Behaviour	8.1	4.1	28.6
Deprivation of Liberty	0.6	0.3	1.4
Robbery	1.4	0.0	0.8
Total Offences Against the Person	118.0	53.2	133.1
Burglary (Dwelling)	22.3	15.9	27.0
Burglary (Non-Dwelling)	6.7	2.8	10.8
Stealing of Motor Vehicle	7.1	9.3	12.6
Stealing (Other)	34.1	20.0	41.7
Damage	40.2	24.1	40.6
Total Offences Against Property	122.0	75.3	150.9
Drug Offences	10.4	15.9	9.4
Receiving and Possession of Stolen Property	0.9	1.8	5.6
Regulated Weapons Offences	6.7	2.3	2.8
Graffiti	5.5	1.5	1.4
Fraud & Related Offences	3.8	1.5	3.3
Breach of Violence Restraint Order	4.9	2.8	17.8
Total Other Offences	32.1	25.9	40.3
Total Region Offences	272.1	154.4	324.3

Source: WA Police Force

Denominator is the ABS ERP for the total LGA population in each census year

Note for Table 8.1 and 8.2: as a consequence of the changes to WA Police crime recording and reporting practices, only offence data from 2008 has been verified in relation to the new Offence Hierarchy. As a consequence, data provided for 2006 may not reflect these crime recording and reporting changes and is subject to revision. The number of reported offences for a period (e.g. calendar year) comprises all offences reported during that period but may include offences committed during earlier periods. Reported offences are selected offences reported to or becoming known to police and resulting in the submission of an offence report in the Offence Information System (OIS) or Incident Management System (IMS). Offences against public order, such as disorderly conduct and offences against the Firearms Act, Liquor Licensing Act and a number of other offences against the statute laws of Western Australia and the Commonwealth are not recorded in these systems.

In order to provide some sense of the relative significance of reported offence rates in the East Kimberley, Table 8.3 provides the same rates for Western Australia as a whole in 2011 and 2016. As with Tables 8.1 and 8.2, it is important to note that these are crude per capita rates and they are not age-standardised. Nonetheless, they show that compared to Western Australia as a whole, per capita offence rates in both parts of the East Kimberley are relatively high for just about every type of offence. Assault and property damage, in particular, stand out.

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Table 8.3 Total population offence rates by type of offence in Western Australia, 2011 and 2016

Offence type	2011	2016
Homicide	0.1	0.1
Sexual Offences	1.6	2.2
Assault	9.5	12.5
Threatening Behaviour	1.5	2.4
Deprivation of Liberty	0.1	0.1
Robbery	0.8	0.5
Total Offences Against the Person	13.6	17.8
Burglary (Dwelling)	11.6	10.4
Burglary (Non-Dwelling)	3.9	3.5
Stealing of Motor Vehicle	3.5	3.1
Stealing (Other)	32.6	33.4
Damage	14.7	13.4
Total Offences Against Property	66.3	63.9
Drug Offences	6.7	13.5
Graffiti	1.9	0.8
Fraud & Related Offences	6.6	5.9
Breach of Violence Restraint Order	3.1	4.4
Total Other Offences	18.2	24.6
Total Region Offences	98.6	106.8

Source: <https://www.police.wa.gov.au/Crime/CrimeStatistics/>

Denominator is the ABS ERP for the total WA population in each census year

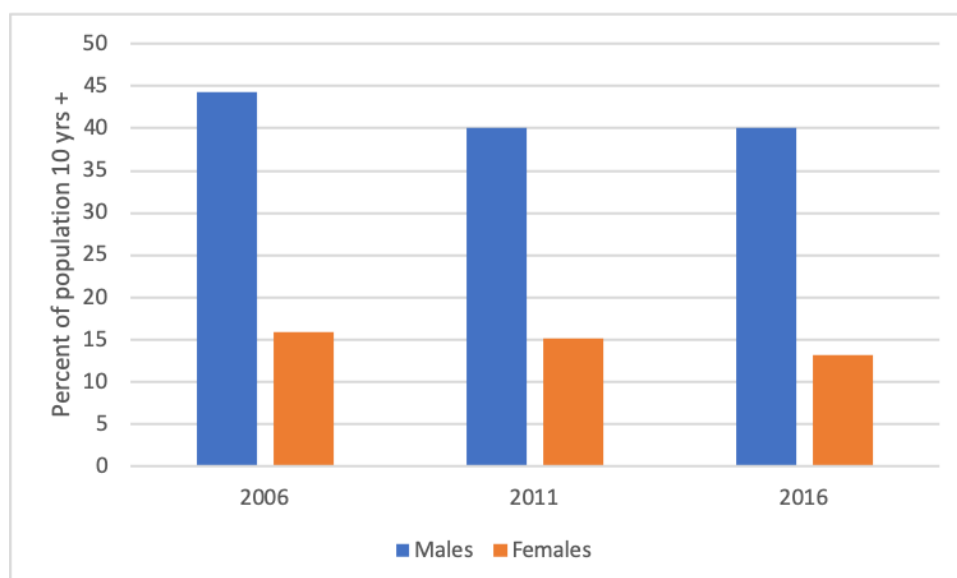
Offenders and the police

Contact between the police and offenders is recorded statistically as individuals are apprehended (either by arrest, summons or warrant) or are diverted (as juveniles) through the cautioning system and referred to a juvenile justice team. Criminal cases that arise out of such apprehensions are lodged in the Children's Court for juveniles and the Magistrates Court for adults along with prosecution and charge details. Upon arrest, or at the time of any charge, the police administer the standard Indigenous status question developed by the ABS. In instances where this yields no information Indigenous status may be assigned on the basis of an individual's 'ethnic appearance'. Given the subjective nature of this assessment WA Police advise that a person attributed to a particular group may not necessarily belong to that group. To date, this shortcoming has formed part of the caution applied to the use of WA crime statistics in national reporting on Indigenous status of offenders by the ABS and others (ABS 2018a). With this caveat in mind, data on unique individuals arrested, including their Indigenous status and other characteristics, are provided via the Western Australia Police Force Briefcase/Prosecutions system.

This shows that the vast majority of offenders in the East Kimberley have consistently been Aboriginal over the period 2006-2016 (around 90%), and the vast majority of these have consistently been male (around 70%). As for rates of arrest, some adjustment needs to be made to those provided by WA Police Force. Basically, the Police Force method for calculating rates uses unadjusted census counts of usual residents as a denominator. As we have seen, census counts, especially Aboriginal census counts, fall well short of estimated resident population (ERP) numbers in the East Kimberley and so, ideally, the latter should be used in calculating rates. This is easily done for the region as a whole with results shown in Figure 8.2. This reveals that Aboriginal arrest rates in the East Kimberley are very high, especially among males. While the level has fallen since 2006, as much as 40% of all males over 10 years of age were still arrested in 2016. Female rates are much lower and have also shown slight decline over time but

nonetheless they involve more than 10% of the eligible population. Aside from social impacts that may arise from encounters with the police, apprehensions also raise the probability of criminal prosecution and that, in turn, can compound the negative affect on employment prospects. Previous studies have indicated that having been arrested can reduce the probability of Aboriginal people being employed by between 10% and 20% for males and 7% and 17% for females (Borland and Hunter 2000; Hunter and Daly 2008). The rate of arrest is therefore a crucial labour supply-side indicator.

Figure 8.2 Aboriginal male and female arrest rates*: East Kimberley region, 2006-2016



Source: Western Australian Police Force

*Unique persons arrested as a percent of ABS ERP populations aged 10+. Arrest figures may contain an unknown number of non-residents

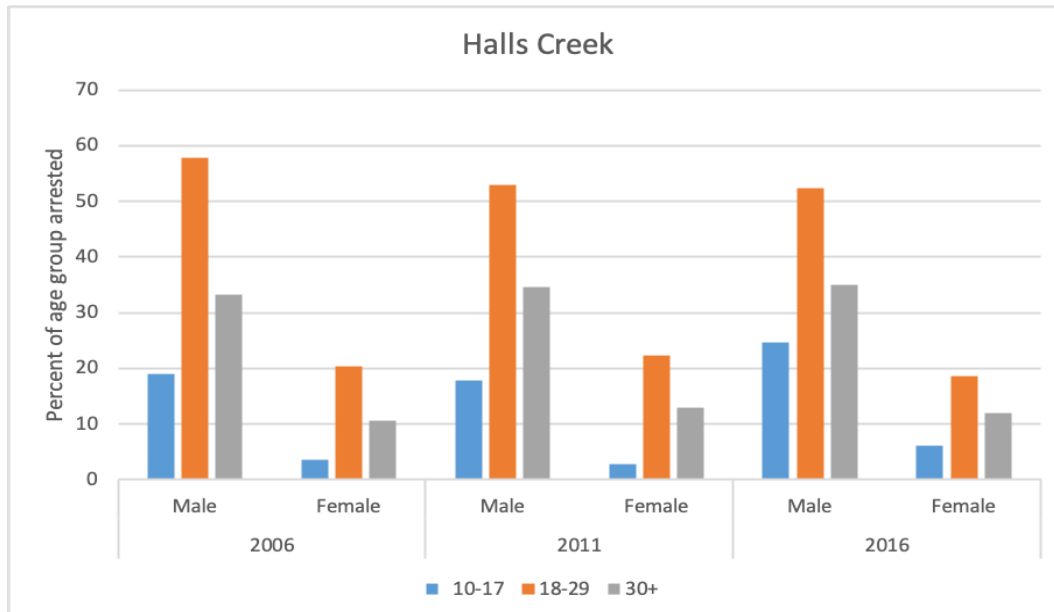
Providing the same data by age-group and at LGA-level is more problematic. While ABS ERPs are available for LGAs they not disaggregated by age and this is a requirement for any analysis of age-specific rates. One way around this difficulty is to develop synthetic age estimates of the Aboriginal population by taking the Aboriginal ERP for each LGA and distributing these according to the age distribution of the published ERP for the Kununurra Indigenous Region. While not precise, this should produce more realistic and reliable estimated rates.

Based on this method, Figures 8.3 and 8.4 shows Aboriginal male and female arrest rates for juveniles and for young adult and older adult age groups in each of the two LGAs. First of all, we can see that rates for males aged 18-29 years in both LGAs have been are excessively and consistently high involving more than 50% of the age group. The interesting trend to note is that the rate in Halls Creek has been fairly stable while the rate in Wyndham-East Kimberley has fallen. A similar trend appears among females aged 18-29 years, and while these rates are lower they still refer to between 20 and 30% of the young adult female population. Some caution is required with these figures since there is scope for discordance between numerators (unique persons arrested in each LGA according to their usual place of residence as determined by the administrative system of WA Police) and denominators (synthetic estimates of usual resident populations in each age group in each LGA). Only a process of data matching could clarify this matter and this is simply not possible as estimates are not unit record-based. Nonetheless, it is difficult to draw any other conclusion than to say that interaction with

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police leading to detrimental outcomes of criminalisation is all pervasive among young Aboriginal adults.

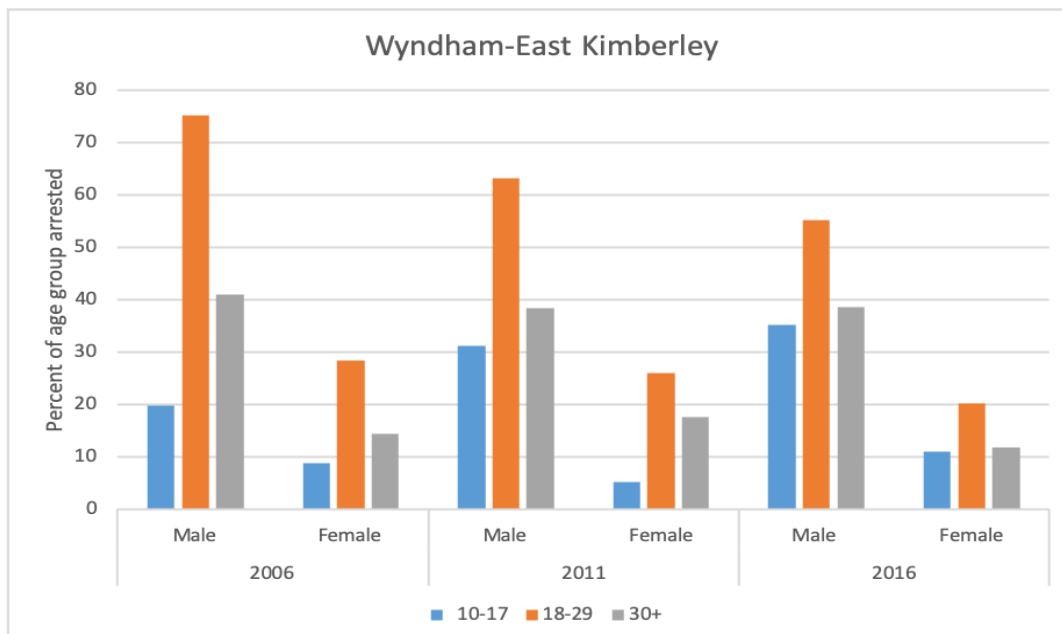
Figure 8.3 Aboriginal male and female arrest rates by broad age group*: Halls Creek LGA, 2006-2016



Source: WA Police Force

*Percent of ABS ERP populations aged 10-17, 18-29 and 30+. Arrest figures may contain an unknown number of non-residents

Figure 8.4 Aboriginal male and female arrest rates by broad age group*: Wyndham-East Kimberley LGA, 2006-2016



Source: WA Police Force

*Percent of ABS ERP populations aged 10-17, 18-29 and 30+. Arrest figures may contain an unknown number of non-residents

While arrest rates among older adults are lower, they still consistently account for between 33% and 37% of older males in Halls Creek and 38% and 41% in Wyndham-

East Kimberley; again, female rates are lower but still persistently around 10-15%. As for juvenile rates, these are lowest but nonetheless still relatively high, especially among males. More worryingly, they appear to be rising over time. In terms of the aspirations implied by the emerging prospect of demographic dividend, arrest rates among juveniles and young adults at these magnitudes are of a matter of concern given their negative impact on employability.

The actual number of unique Aboriginal persons over 10 years of age arrested in the East Kimberley increased from 1,177 in 2006 to 1,305 in 2016. As a cross-section, this means that in 2016 as much as 27% of the East Kimberley Aboriginal population aged 10 years and over was arrested. As we have seen, from a labour market perspective, any evidence of prior arrest can serve as a hindrance to obtaining work and so the cumulative economic impact on the population of arrests over the years is likely to be substantial, although estimating the foregone value of this is difficult given the absence of requisite data.

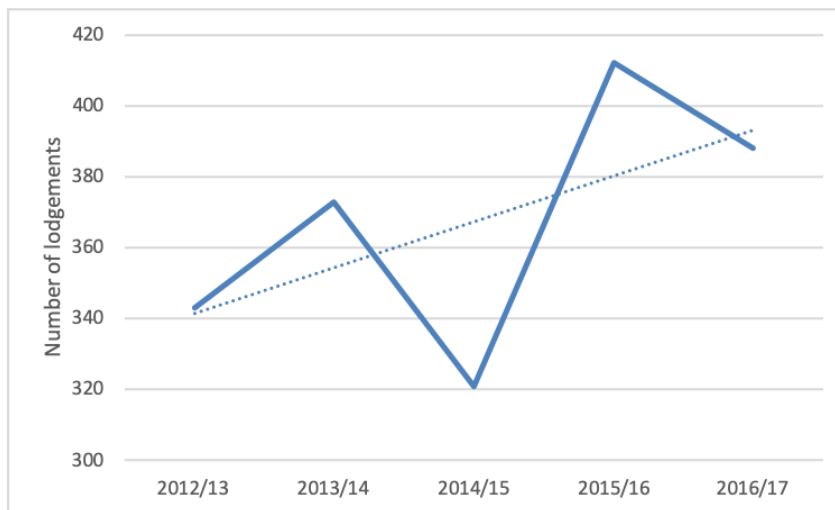
At face value, these findings regarding arrest rates are hard to comprehend. They portray a scale of interaction with police at an almost societal level. While it is possible that arrest data could include individuals whose usual residence may not be in the East Kimberley, by the same token it is likely that East Kimberley residents may appear in the data for other regions. Whatever the case, and we shall never know, these findings present an urgent need to consider more closely the social and economic consequences of such widespread apprehensions by police to ensure that, where possible, any social and economic impacts are ameliorated. Justice reinvestment and diversion programs provide potential avenues here alongside the many other recommendations of the Australian Law Reform Commission inquiry into the incarceration rate of Aboriginal and Torres Strait Islander peoples (ALRC 2017).

Juvenile offenders and Children's Courts

One constraint placed on the court data presented here is that they rely mostly on information for defendants processed by the East Kimberley-based courts and they therefore do not necessarily refer to East Kimberley usual residents, although this is more likely than not. Figure 8.5 shows the number of criminal cases lodged against Aboriginal defendants in East Kimberley-based Children's Courts in each of the five-yearly reporting periods from 2012/13. A 'case' refers to an offender processed through the Children's Criminal jurisdiction with one or more charges lodged on any one occasion. Consequently, there are invariably more charges than cases with the latter providing a closer approximation to the number of actual individuals charged. The number of cases lodged has varied somewhat erratically since 2012/13 but the general trend has been upwards with an annual average of 367 cases over the period.

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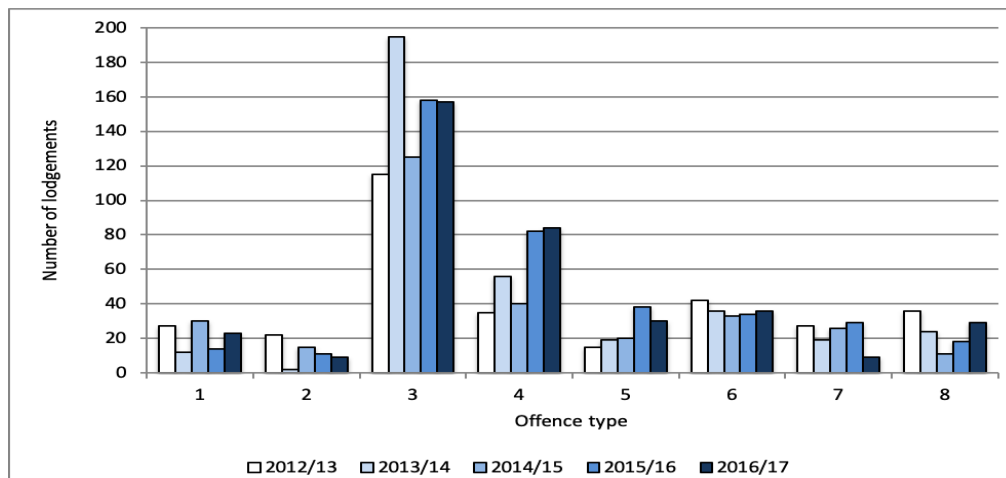
Figure 8.5 Number of criminal cases against Aboriginal defendants lodged in East Kimberley Children’s Courts, 2012/13 to 2016/17



Source: WA Department of Justice

Note: Reliable reported data are only available for the period 2012/13 to 2016/17. However, given the very high Aboriginal share of total lodgements consistently observed over that period it is possible to derive Aboriginal estimates for each of the prior 5 years by applying the average Aboriginal proportion of total lodgements for the period 2012/13 to 2016/17 to the total lodgements reported for each of the prior 5 years.

Figure 8.6 Number of criminal cases against Aboriginal defendants lodged in East Kimberley Children’s Courts by offence type (ANZSCO Division)*, 2012/13 to 2016/17



Source: WA Department of Justice

A total of 16 offence categories are listed in the ANZSOC but only 8 are shown here as these accounted for an average of 95% of case lodgements by offence type between 2012/13 and 2016/17

1. Acts Intended to Cause Injury; 2. Sexual Assault and Related Offences; 3. Unlawful Entry With Intent/Burglary, Break and Enter; 4. Theft and Related Offences; 5. Property Damage; 6. Public Order Offences; 7. Traffic and Vehicle Regulatory Offences; 8. Offences Against Justice Procedures, Government Security and Government Operations

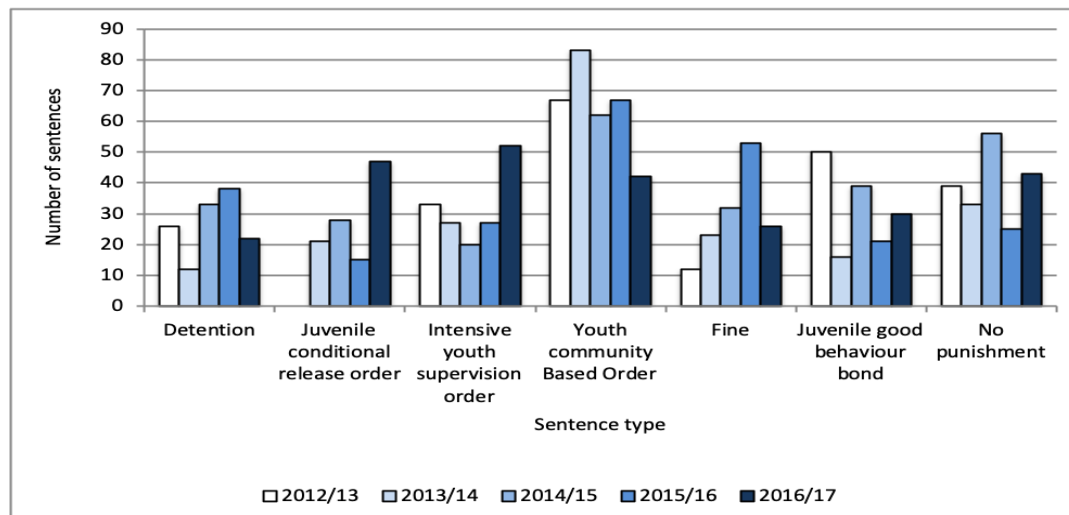
*Based on the Australian and New Zealand Standard Offence Classification (ANZSOC) Third Edition, 2011 (ABS 1234.0)

Figure 8.6 shows these criminal cases according to main offence type. A total of 16 offence type categories are identified in the Australian and New Zealand Standard Offence Classification (ANZSOC) but only 8 are shown here as they accounted for 95% of all cases. By far the most prominent offence type, and consistently so, is unlawful

entry with intent/burglary and break and enter. Theft and related offences are the next most prominent offence type and they have doubled since 2012/13. There has been a rise also in property damage cases but those brought for all other offence types have declined in number.

As for sentences imposed (Figure 8.7), the single largest in each year between 2012/13 and 2016/17, accounting for around one-fifth to one-third of all court decisions in most years, was a youth community-based order. However, these fell behind intensive youth supervision orders and juvenile conditional release orders in 2016/17. The number of fines imposed had also risen until recently while juvenile good behaviour bonds have steadily fallen. No punishment orders have typically accounted for around 16% of sentences. These are generally used only for first time offenders or where the court is satisfied that the offender has been punished by some other means. At the other extreme, detentions, to be served in a juvenile detention centre, have been imposed on average in around 10% of cases.

Figure 8.7 Sentences imposed on Aboriginal defendants by main sentence types: East Kimberley Children’s Courts, 2012/13 to 2016/17



Source: WA Department of Justice

A total of 12 sentence type categories are listed by the Children’s Court but only 7 are shown here as these accounted for an average of 96% of case lodgements by sentence type between 2012/13 and 2016/17

1. Detention; 2. Juvenile conditional release order; 3. Intensive youth supervision order; 4. Youth community based order; 5. Fine; 6. Juvenile good behaviour bond; 7. No punishment

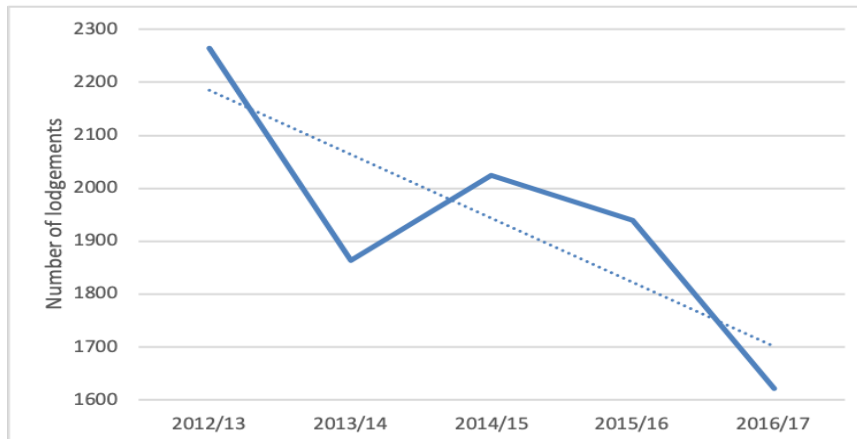
Adult offenders and Magistrates Courts

In contrast to the Children’s Court, the number of criminal cases lodged against Aboriginal defendants in East Kimberley-based Magistrates Courts declined substantially over the five years between 2012/13 and 2016/17 from 2,265 to 1,621 (Figure 8.8). These cases have been consistently concentrated in two categories of offence type—traffic and vehicle regulatory offences and offences against justice procedures, government security and government operations (Figure 8.9). In the first of these categories common misdemeanours arise in relation to driver licences, vehicle registration, vehicle roadworthiness and driving regulations. In the latter category, offences mostly refer to breaches of custodial orders, community-based orders and violence and non-violence orders. Lodgements for these latter offences are the most

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common and have increased over time. Cases involving acts intended to cause injury refer to a number of categories of assault and these have been lodged fairly consistently over time. All other lodgements by offence type have shown signs of increasing since 2012/13 with the notable exception of those related to public order offences that first of all increased and then, since 2015/16, recorded a substantial decrease.

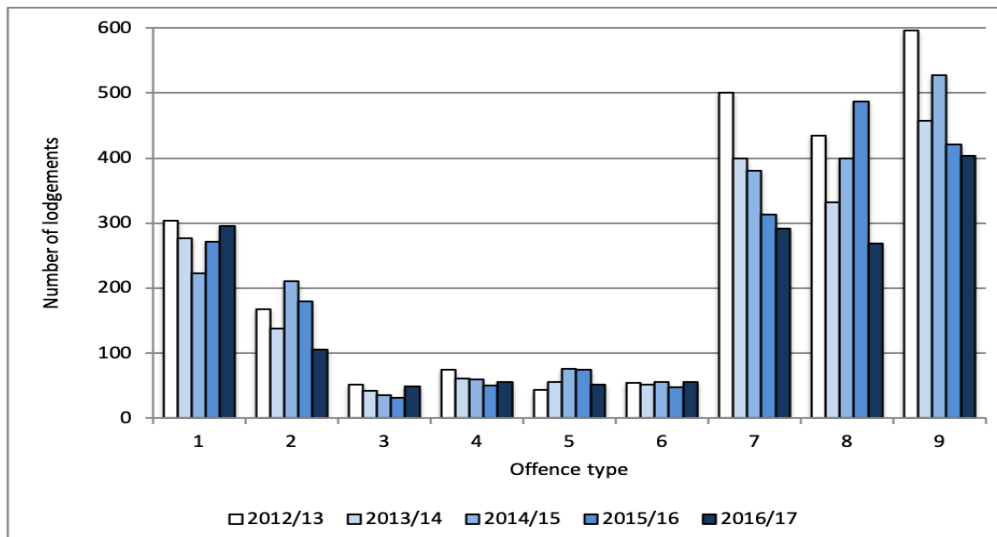
Figure 8.8 Number of criminal cases against Aboriginal defendants lodged in East Kimberley Magistrates Courts, 2012/13 to 2016/17



Source: WA Department of Justice

Note: Reliable reported data are only available for the period 2012/13 to 2016/17. However, given the very high Aboriginal share of total lodgements consistently observed over that period it is possible to derive Aboriginal estimates for each of the prior 5 years by applying the average Aboriginal proportion of total lodgements for the period 2012/13 to 2016/17 to the total lodgements reported for each of the prior 5 years.

Figure 8.9 Number of criminal cases against Aboriginal defendants lodged in East Kimberley Magistrates Courts by offence type (ANZSCO Division), 2012/13 to 2016/17



Source: WA Department of Justice

A total of 16 offence categories are listed in the ANZSOC but only 9 are shown here as these accounted for an average of 95% of case lodgements by offence type between 2012/13 and 2016/17

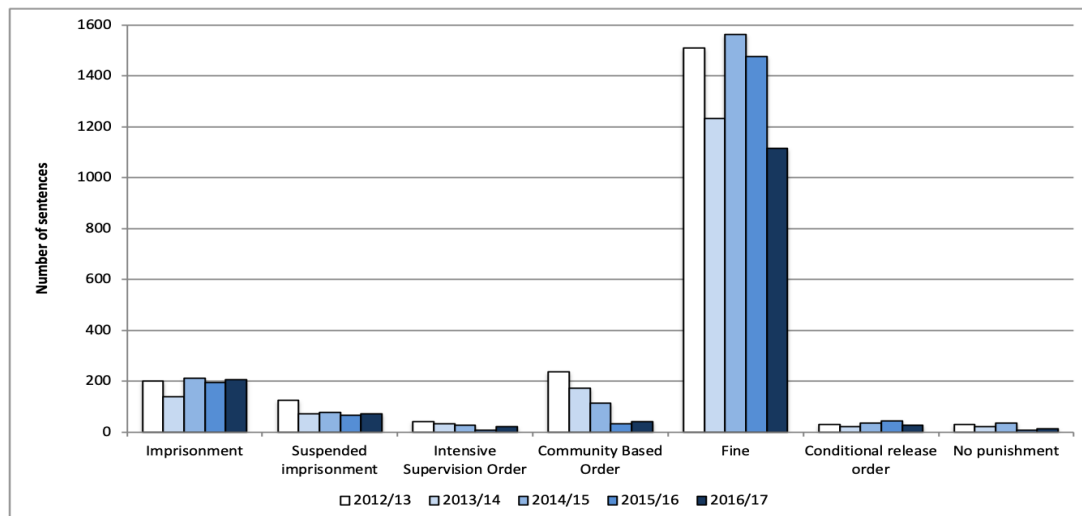
1. Acts Intended to Cause Injury; 2. Dangerous or Negligent Acts Endangering Persons; 3. Unlawful Entry With Intent/Burglary, Break and Enter; 4. Theft and Related Offences; 5. Illicit Drug Offences; 6. Property Damage; 7. Public Order Offences; 8. Traffic and Vehicle Regulatory Offences; 9. Offences Against Justice Procedures, Government Security and Government Operations

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Based on the Australian and New Zealand Standard Offence Classification (ANZSOC) Third Edition, 2011 (ABS 1234.0)

As for sentences imposed by the Magistrates Court in relation to these criminal cases, these show a clear and consistent pattern (Figure 8.10). By far the most common form of sentencing, but one that has tended to decrease over time, is the issuance of a fine. A total of 1,114 fines were issued to Aboriginal defendants in the most recent reporting period of 2016/17, although data on the actual number of individuals receiving these is not provided. Most other sentences were evenly divided between imprisonment (suspended or actual) and Community Based Orders, although the latter fell by 83% over the 5-year period.

Figure 8.10 Number of sentences imposed by East Kimberley Magistrates Courts on Aboriginal defendants by main sentence types*, 2012/13 to 2016/17.



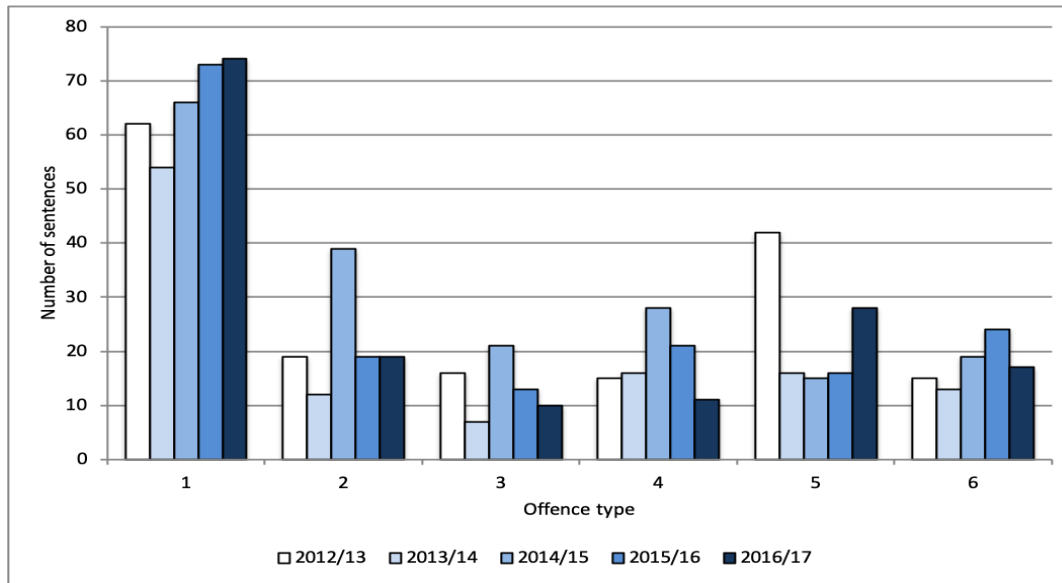
Source: WA Department of Justice

*Figure shows sentences for the top 7 leading sentence types out of a list of 11 possible types

Failure to attend court when required to do so whilst on bail or when summoned leads to the issuance of an arrest warrant by the court. This, in itself, brings a further charge of an offence against justice procedures, although it is not clear how these synchronise in the data. The number of such warrants issued by the Magistrates Court against Aboriginal defendants has increased since 2012/13 by 18% from 414 to 465 in 2016/17 although, once again, it is important to note that multiple warrants can be issued for the same person. Warrants are reported against the most serious offence of cases lodged. Ironically, the most common offence type reported in this way for those failing to attend court referred to offences against justice procedures (29% of warrants issued in 2016/17) which, ironically, suggests a degree of recidivism within the court system itself.

Often, it is such breaches of court orders that lead to a custodial sentence. Breach of bail and breach of violence orders are consistently among the leading reasons for custodial sentencing (Figure 8.11). However, by far the most common single such offence, and rising over time, has been serious assault (either resulting in injury or not). Having said that, if we combine the two forms of traffic offence (driving under the influence and driving with a disqualified licence) this combination accounts for almost as much as serious assault as the reason for imprisonment.

Figure 8.11 Number of custodial sentences* imposed by East Kimberley Magistrates Courts on Aboriginal defendants by main sentence types*, 2012/13 to 2016/17.



Source: WA Department of Justice

* Does not include suspended imprisonment

Figure shows sentences for the 6 leading sentence types amounting to an average of 84% of sentence types out of a list of 32 possible types

1. Serious assault; 2. Driving under the influence of alcohol or other substance; 3. Unlawful entry with intent/burglary, break and enter; 4. Driving while licence disqualified or suspended; 5. Breach of bail order; 6. Breach of violence order

Corrective services

As noted, one of the drawbacks in the data on offences is a lack of information on the actual number of individuals involved and their characteristics. When it comes to sentencing, however, the WA Department of Corrective Services can provide data for distinct Aboriginal persons so long as such persons self-identify as Aboriginal when arrested. From this source we find that a total of 191 distinct Aboriginal residents of the East Kimberley aged 18 years and over commenced a period of custody in one of 15 adult prison facilities in Western Australia during the financial year 2016/17. Of these, the vast majority (92%) were male. Altogether, 10.5% of the estimated adult male population of the East Kimberley was in custody in 2016 but only 0.7% of the adult female population (Figure 8.12). Both of these figures are lower than they have been with as much as 16% of Aboriginal males in custody in 2006. In addition to those in custody during 2016/17, a total of 396 Aboriginal adult residents were subject to some form of Community Based Order (CBO) with the majority once again being male (75%). As an overall rate per head of population, this represented 7.2% of adult males and 2.7% of adult females.

Figure 8.12 Percentage of Aboriginal males and females 18 years and over received in custody/detention*: East Kimberley region 2006, 2011 and 2016



Source: WA Department of Justice

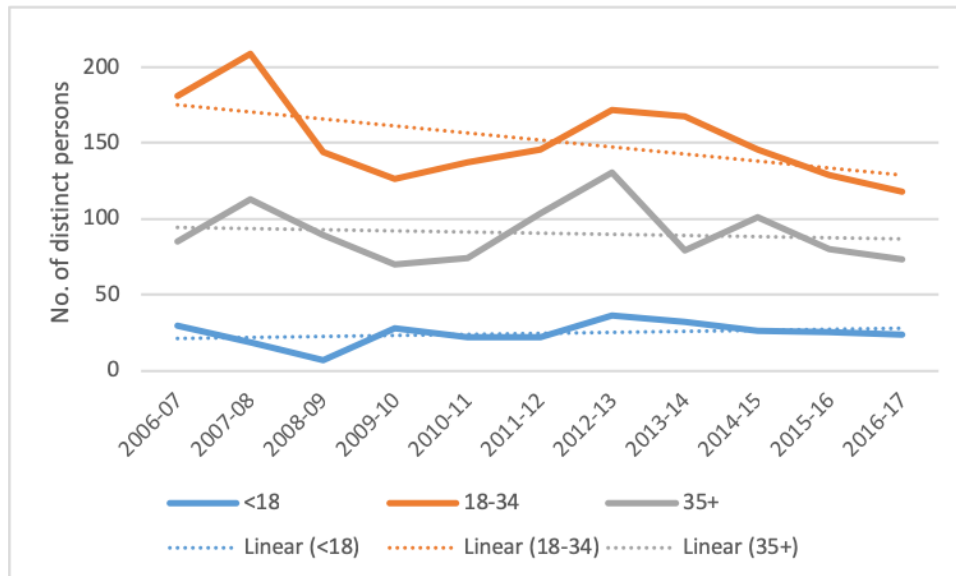
* Detained in any one of 15 public and private prisons in Western Australia managed by the Department of Corrective Services

As far as juveniles are concerned, in 2016/17 a total of 31 Aboriginal youth from the East Kimberley aged between 10 and 17 years commenced a sentence in a juvenile detention facility. This represented 2% of the estimated East Kimberley population in that age group. Once again, almost all of these were male. In addition to this, a total of 75 juveniles were subject to a Community Based Order representing 4.7% of the population aged between 10 and 17 years. Again, they were mostly male (81%).

Of more interest for the present report is the degree to which these levels have changed over the past decade as well as any variation by age group given the impact of incarceration on labour force participation. Since by far the majority of Aboriginal persons received into custody are male, Figure 8.13 shows the number of distinct Aboriginal male residents of the East Kimberley in custody over the 10-year period from 2006/07 to 2016/17. While numbers vary from year to year, the trend has been for these to decline over time among adults whereas among juveniles they have remained fairly constant. To provide some sense of the population impact of this, Figure 8.14 shows these data as rates for each age group in 2006, 2011 and 2016. Remarkably, this reveals that almost one-fifth of young adult males were incarcerated in 2006 and while this level has fallen it is still around 15%. Rates for older adults are lower but rising and now sit at around 10%. Juvenile rates are the lowest at around 5% but in decline. As with the excessively high arrest rates reported for young adult males in Figures 8.3 and 8.4, problems of concordance between Corrective Services administrative data and ABS population data cannot be discounted although there is no methodological basis for assessing this and so the rates stand for what they are. While precision may be questioned, the fact that large proportions of the population are incarcerated at any one time seems unequivocal.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

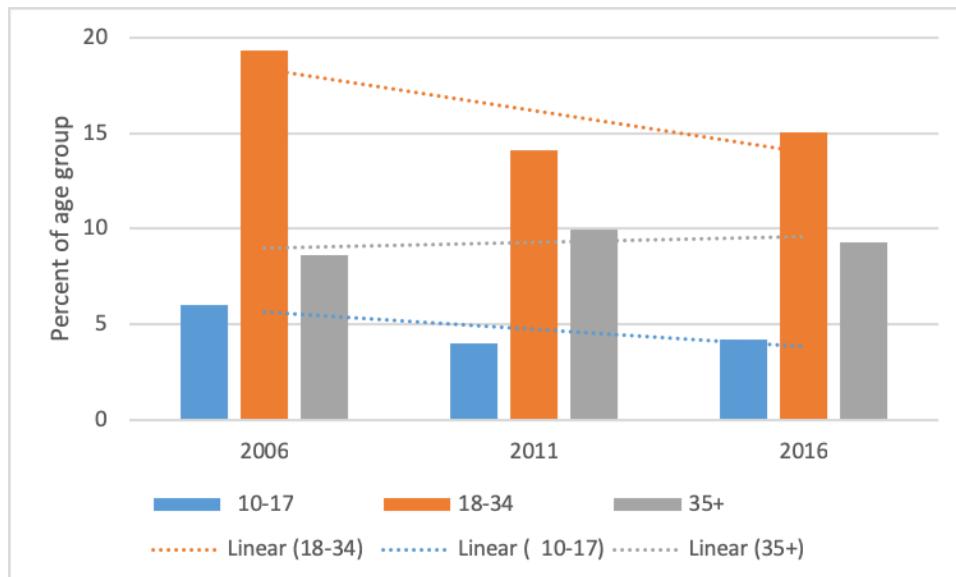
Figure 8.13 Number of distinct East Kimberley males received into custody/detention* by broad age group: East Kimberley Region 2006/07-2016/17



Source: WA Department of Justice

* Detained in any one of 15 public and private prisons in Western Australia managed by the Department of Corrective Services

Figure 8.14 Percentage of Aboriginal males in broad age groups received in custody/detention*: East Kimberley region 2006, 2011 and 2016

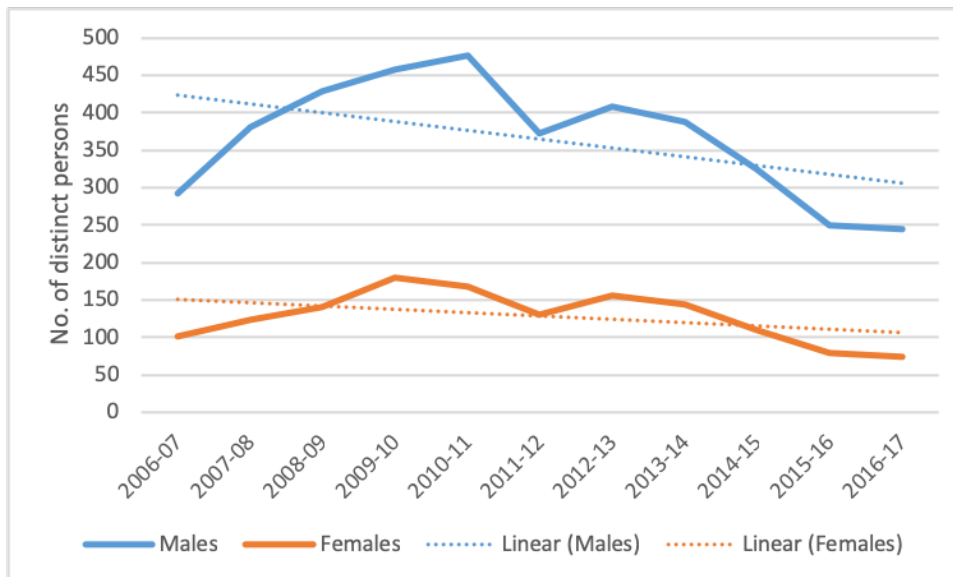


Source: WA Department of Justice

Figure 8.15 shows the number of distinct individuals aged over 10 years who were subject to a Community Based Order or Juvenile Justice Team Referral each year between 2006 and 2016 and here we show the figures for both males and females since female numbers are reasonably high, although the male figures are much higher. Once again, to provide some sense of the population impact of this, Figure 8.16 focuses on males only and shows these as rates for each age group in 2006, 2011 and 2016. This reveals that more one-fifth of male juveniles were subject to an order in each of these years and that this level of has been more or less steady. The rate among young adults is slightly lower and seems to be trending downwards, while the lowest rates are among older adults who also recorded a rate reduction.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

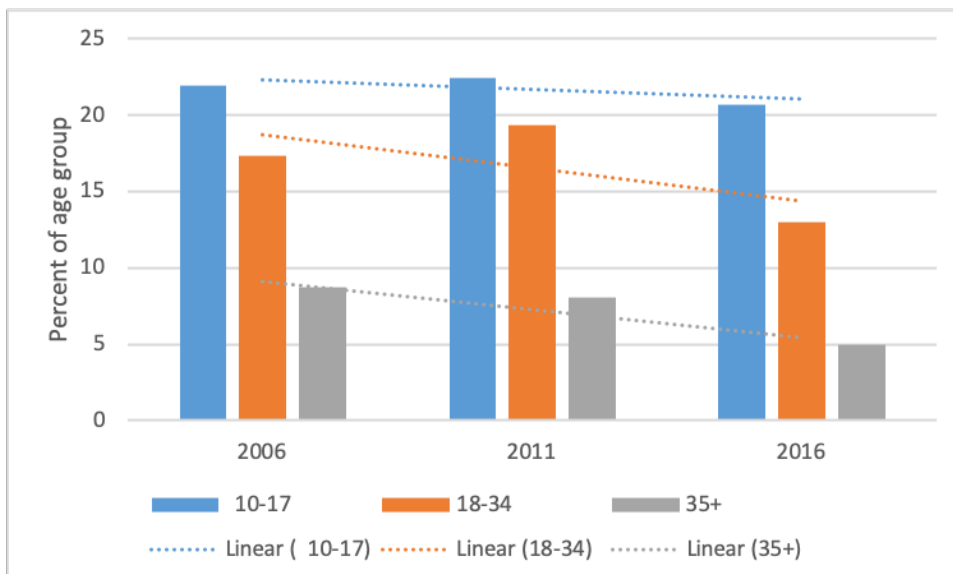
Figure 8.15 Number of distinct Aboriginal males and females aged over 10 years and subject to a Community Based Order*/Juvenile Justice Team Referrals: East Kimberley region 2006/07-2016/17



Source: WA Department of Justice

* An order issued by a Court of Law, or other authority, for the management of an offender or person on bail in the community. For example: Bail Orders, Community Based Orders, Intensive Supervision Orders, Work and Development Orders and Early Release Orders (Parole)

Figure 8.16 Percentage of Aboriginal males in broad age groups with Community Based Orders/Juvenile Justice Team Referrals: East Kimberley region 2006, 2011 and 2016



Source: WA Department of Justice

While all of these data refer to distinct individuals, the possibility of an individual commencing a period of custody as well as a CBO in the same year (and therefore appearing in both sets of data) cannot be discounted. Unfortunately, without a fairly intense process of data-matching it is not possible to detect any such overlap. At one extreme the data sets could, in theory, refer to the same individuals, though not exactly as there have been far more individuals on CBOs than in custody. At the other extreme they could refer to entirely different sets of individuals. The reality is likely to fall somewhere in-between with a tendency towards difference than similarity.

Change in Aboriginal Social Indicators in the East Kimberley: 2001-2016

The issue at stake here is an attempt to estimate the proportion of the population that is likely to be either in custody or subject to a CBO at any given time. This is important to know as it provides a measure of constraint on labour force and other participation and it offers some indication of the degree to which interaction with the criminal justice system impacts on potential labour supply and individual abilities to engage in wider community activities. In terms of the three age groups presented, the best that can be provided are lower and upper limits. For lower limits we can use the lowest figures from the data. For the upper limits we can simply sum the custody and CBO rates. From the point of view of regional participation, the figure that stands out here is that as much as 37% of Aboriginal males aged between 18 and 34 years could have been either in custody or subject to a CBO (rather than potentially in work) in 2006. While this upper limit is now lower, it could still be as much as 28%. More likely the real levels would fall somewhere within the possible range but they would be no less than 17% and 13%. The implication is that incarceration and CBOs operate as substantial obstacles to economic participation.

9. Key findings and issues for regional planning

In concluding the baseline study of social and economic conditions in the East Kimberley in the early 2000s (Taylor 2004) it was noted that large mining operations such as ADM can play an important part in regional development by providing a local employment base offering relatively high wages, by developing local skills, by stimulating local Aboriginal business activity, by adding to the stock of regional infrastructure, and more generally by generating regional economic multipliers. It is perhaps a measure of the extent to which these positive impacts did occur in the East Kimberley, especially in the Wyndham-East Kimberley Local Government Area, that economic modelling of the effects of closure of the Argyle mine highlight negative consequences in each of these areas (Argyle Diamonds Ltd 2016, 2018). However, it was also noted that such inputs were always going to be insufficient in and of themselves, to redress the legacy of past neglect of Aboriginal people; nor would these alone necessarily alter regional social indicators. From the foregoing presentation of what has changed in those social indicators since the early 2000s it would seem that this prognosis was pretty much on the money.

This is not because ADM has been the only game in town. On the contrary, substantial State and Commonwealth government stimulus packages (notably the East Kimberley Development Package) have been directed at improving social and economic outcomes in the region since the early 2000s, while opportunities have also arisen for economic expansion especially following the Ord Final Agreement. Over the same period, major structural overhauls to the delivery of government services and funding for Aboriginal people have occurred with a stated aim of closing gaps in the very sorts of social indicators that the baseline study identified. Yet for all this combined investment, activity and innovation, the overriding conclusion to be drawn from the analysis of change in Aboriginal social indicators is best summed up by the phrase, “the more things change, the more they stay the same”. At least this is true at the aggregate scale of the regional population.

Here it is important to recall that three dimensions of change have been presented: absolute, proportional and relative. In many instances, there has been absolute improvement—numerically there are more people employed in mainstream work, more on higher incomes, there is additional housing, increased school enrolment, fewer avoidable deaths etc., but what matters more is the volume of improvement relative to population (need). Here, change is often mixed with either negative or positive change in the employment rate (depending on definition), a few more people on higher incomes but poverty rates generally increasing, no change in low school attendance rates and mixed trends in literacy and numeracy outcomes, less apparent housing need overall but continued high occupancy rates in many locations, significant shifts in mortality and morbidity rates for many conditions but some for better, some for worse, and so on. Most telling of all, however, is that even in instances where improvement exists, the gaps between Aboriginal and other East Kimberley residents have often failed to close or have widened. Furthermore, gaps within the Aboriginal population are widening too, especially in regard to income and opportunity, because while the situation for some people may have improved, for most it has either not changed or it has worsened.

Population change

One expectation in the early 2000s was that rapid growth in the Aboriginal population of the East Kimberley, that had been observed up to that point, would continue unabated largely as a consequence of sustained high fertility. This has not occurred. Instead, Aboriginal population growth has been sluggish partly because the fertility rate has declined, but also because of consistent net out-migration. Whereas the population was expected to maintain a distinctly youthful age profile leading to ever higher age-dependency ratios, the evidence now indicates that a demographic transition towards reduced age dependency has been underway for some time with growth in the population of prime working-age outstripping all other age groups. This shift has presented a period of potential economic return so long as economic participation among the now dominant working-age group is maximised. However, this window of opportunity appears to be approaching closure. All other things being equal, if current trends in Aboriginal fertility, mortality and migration remain as they are, then growth in the aged population (over 55 years) will begin to raise the age-dependency ratio throughout the 2020s leading to a reduction in the proportion of potential wage-earners to dependents in the population.

As similar demographic transition has unfolded around the world, it has been observed that the higher the participation in employment with associated earnings, and the lower the levels of disengagement from the economy and reliance on welfare, then less is the likelihood of significant welfare dependence emerging as a long-term structural outcome. In Australia, the observation has been made that non-Aboriginal Australians tended to be educated before they became 'old' with all the economic benefits that accrued from that (Jackson 2008). The risk now, for Aboriginal people in the East Kimberley, is that they will become old before they are educated, which is code, really, for work-ready. Consequently, the prospects for acquiring an income independent of the State, will be diminished.

Of interest, then, is whether the cohorts of school students and young adults in the East Kimberley who are implicated in this transition are well-placed to provide future advantage in terms of heightened participation rates in economic activity. The answer, it seems, would generally be no. The background to this conclusion will be summarised shortly, but suffice to say here that low overall levels of school engagement and young adult participation in employment, education and training, combined with remarkably high and rising rates of young adult arrest and judicial sentencing have undermined any prospect that favourable shifts in regional demography were ever going to yield a boost to economic status.

The other consequence of an ageing population, of course, is that there will be both numerically and proportionately more people of old age, here defined as those over 55-years. This signals a looming issue to do with the adequate provision of aged care services, renal dialysis and disability services. Invariably to date, social policy with regard to the Aboriginal population has focussed on needs at younger ages, and while these are still paramount the fastest rate of population growth is projected to be among those at advanced ages. While the image of northern Australia is one of out-migration at retirement age, there has been growth in the numbers of older non-Aboriginal residents as well. However, Aboriginal services in this area should not simply be viewed as a sub-set of mainstream services. It should be remembered that Aboriginal

people have cultural ties to particular parts of the East Kimberley, along with place-based senior ceremonial and custodial roles, suggesting a growing need for aged care services in home communities as much as in regional centres.

While these broad demographic trends appear plausible, doubts do remain over the reliability of official population data for the East Kimberley. This stems from the fact that the gap between the census count of Aboriginal population and the post-census estimate of that population has averaged as much as 26% since 2001. This places a substantial load on the accuracy and applicability of algorithms to do what the census is supposed to do in the first place—establish a reliable count of the population. Unfortunately, resulting estimates of the population are provided without any accompanying measures of confidence. They simply have to be accepted at face value despite the fact that adjustments of this size must inevitably involve a wide margin of error. It would benefit the regional leadership in the East Kimberley to engage the ABS over this issue for two reasons. First, to obtain a better understanding of just how these regional estimates are calculated. Second, to consider with them what actions might be taken to improve the count at the next census in 2021 including the possibility of greater local participation and community control over census processes in much the same way as recommended to the ABS following previous assessments of the enumeration process in remote Aboriginal communities (Morphy et al. 2007:119-25; Taylor 2007: 85-6).

Labour force

Interpretation of change in social indicators can depend as much on revised definitions of categories as it is to do with any real alteration to actual conditions. This is especially so with Aboriginal people as many of the social indicator categories that define their outcomes are state-imposed and subject to policy whim (Morphy 2016). A good example is the definition of what constitutes ‘employment’. In 2001, employment figures reported by the census included Aboriginal people working in the CDEP scheme. As we have seen, together with others in the workforce, these CDEP workers produced an overall Aboriginal employment rate in 2001 of around 47%. Against this, the 2016 employment rate of around 27% appears to be a very negative return on 15 years-worth of regional economic expansion and substantial effort to improve Aboriginal outcomes. However, if CDEP is discounted as employment we can produce a revised employment rate for 2001 of 13% which makes the rate of 27% in 2016 look more favourable, even though it is very low by any standard.

One question of relevance to the present report, given the imminent closure of Argyle mine, is to what extent the presence of Argyle has contributed to the raising of Aboriginal economic status in the region. In truth, this would require a separate and fairly wide-ranging analysis all of its own. Apart from the obvious matter of direct employment and training, this would need to estimate wages accrued, quantify the distribution and use of payments to the Gelganyem and Kilkayi charitable trusts, and account for any indirect benefits flowing to Aboriginal business as well as to employees elsewhere in the labour market who acquired valuable work experience and/or training at the mine. In this report, we focus solely on direct mine employment.

In this regard we can say that ADM contributed substantially to Aboriginal mainstream employment in 2006, accounting for as much as 29% of non-CDEP jobs. By 2011, this proportion had declined to 10% and by 2016 to just 4%. It is clear, then, that the benefit

of direct employment at the mine has been in decline for some time and this has undoubtedly contributed to a plateauing of the Aboriginal employment rate since 2011. However, opportunities have emerged elsewhere in the labour market and on-going employment in mine rehabilitation will serve to moderate the impact of closure, at least for as long as this lasts.

As for training, the mine has provided a substantial share of regional training positions over time, especially apprenticeships. In mid-2011, Aboriginal apprentices at ADM accounted for as much as 40% of all Aboriginal people in an apprenticeship at an East Kimberley worksite. In 2016, this was more or less unchanged at 36%. The number of traineeships at ADM at these same dates was far fewer accounting for just 9% of the regional total in 2011 and just 3% in 2016. The essential point to note from all of this is that ADM has at various times and in various ways provided an important vehicle for Aboriginal regional economic participation and with its imminent closure thought needs to be given to replacing this role. This is especially so with regard to options for apprenticeships.

While the impetus for this study leads naturally to some focus on ADM, it is important to recognise that we have very little statistical information on the size, composition, economic performance and potential of another important component of the regional economy—notably, the Aboriginal business and community organisation sector. There has been a flourishing of Aboriginal businesses and incorporated bodies in the region since the initial study in the early 2000s yet they remain statistically invisible, except to say that they almost certainly provide for more Aboriginal employment in the East Kimberley than the three tiers of government put together. Since 2001, there is every likelihood that employment in Aboriginal businesses and organisations has increased and yet we have no data for validation. To overcome this, a separate category of ‘Aboriginal sector’ employment in the national census would be a useful innovation and something that the regional leadership could lobby for. In the meantime, there is an urgent need to audit these Aboriginal contributions to the regional economy as a prelude to assessing and bolstering their potential to ameliorate any impacts of mine closure. At the same time, some of these may themselves be dependent for their operations on mining, in which case the implications of industry restructuring will need to be carefully considered by Rio Tinto with a view to harm minimisation or the fashioning of alternate opportunities.

Of course, the essential backdrop to labour force engagement is projected growth in the Aboriginal population of working-age. Because of this, a key requirement from now on if a reduction in the employment rate for East Kimberley Aboriginal people is to be avoided, is to ensure that the current core stock of those employed (aged 25-54) is maintained (790) and that an additional 14 jobs are created each year over the next 10 years. Every additional job beyond this would represent an improvement on the current outcome. As to where these additional individuals might come from, primary consideration should be given to those Aboriginal students currently in, or just out of, the high school system and what their requirements might be for securing work. Also crucial is a need to better understand the barriers facing those of early working-age who are either unemployed or marginally attached to the labour force. In effect, an immediate audit of capacity to engage is required of the younger Aboriginal age groups in order to direct strategic investments into matching potential supply with emerging demand. While the economics of potential demographic dividend provide a strong opportunity cost business case for this, the projected ageing of the population also

necessitates some urgency.

Income

A striking observations following 15 years of regional economic growth is the overall rise in Aboriginal poverty which now involves more than 50% of the population in what is one of Western Australia's most expensive regions to live. Despite the substantial investments and policy machinations that have characterised the region, there are now more Aboriginal individuals and households in the lowest income quintiles and Aboriginal median personal and household incomes are now further behind the rest of the East Kimberley population. This is especially so in Halls Creek LGA since at least some proportional increase in Aboriginal incomes at the higher end of the distribution is evident in Wyndham-East Kimberley. As a consequence, there is increasing income disparity within the Aboriginal population as well with the key difference being whether one is employed (especially in mining or in senior administration) or on income support. While some Aboriginal people have benefitted financially from employment at Argyle, from a regional perspective, not enough have. Once again, there is a difference here between LGAs since average income from employment has increased in real terms by 24% in Wyndham-East Kimberley but only by 9% in Halls Creek. Average Aboriginal income from employment in Wyndham-East Kimberley is also almost 50% higher than in Halls Creek.

One reason for growing income disparity is a rise in the proportion of Aboriginal people with no income. This is not dramatic in the East Kimberley but it is in line with a trend observed across remote Australia that has focussed attention on the negative consequences of the CDP compliance and penalty regime (Commonwealth of Australia 2017). We can see from census data that more than half of those with no income are neither employed nor in education or training. What is less clear is whether individuals have dropped out of the income support system as well. The likelihood that substantial compliance breaching off CDP involving financial penalties cannot be discounted, although precise regional data on this are difficult to access given the geography of CDP administrative areas in relation to the East Kimberley. In any case, it is also not possible to determine from administrative data precisely what amount of income may have been forfeited. It does seem, though, that statistical confusion is rife regarding those who are most marginalised in society. Aside from issues to do with the CDP we see this in the lack of concordance between census figures on unemployment and DSS figures on Newstart payments as these refer to different populations. The danger is, with no clear information and with a focus in policy on driving successful outcomes, those left behind for whatever reason can at worst be forgotten and at best be misunderstood and misrepresented. In terms of proper regional profiling and planning for all East Kimberley Aboriginal people, there is a need for better linkage of, and access to, administrative data and a focus on identifying priority sub-groups in the population.

Education and training

As we have seen, interest in the educational status of current Aboriginal students and young adults is given added impetus by the potential for demographic dividend. In realising this, a good deal matters regarding how well placed this cohort is to participate in the future regional labour market. Unfortunately, the general prognosis does not appear favourable. According to census data, as much as 63% of young Aboriginal adults aged 15-34 years were not engaged in employment, education or training in 2016.

If this cohort proceeds through working-age with the same level of disengagement it will severely impact on any chance of benefiting from a population bulge which looks as though it may soon be over anyway. As an absolute minimum, it is vital that the estimated 527 persons in this age group who are fully engaged remain so, and that the estimated 258 who are only partially engaged do so as well. As for the estimated 1,314 who are not engaged, greater effort should be made to identify why this is so and what may be done to reverse their situation. Data from other parts of this report indicate that factors such as ill-health, disability, home duties, arrest and incarceration are all likely to play a significant part.

A key contributor to this disengagement, at least in terms of preparation for employment participation, would appear to be persistently low levels of school attendance. Unlike in some parts of remote Australia, Aboriginal enrolment in schooling in the East Kimberley seems to be more or less universal. However, not all of those who are enrolled attend school often enough to maximise the benefits from education. Even average attendance rates are low at around 70% in primary schools and 55% at secondary. More to the point these rates have remained fairly constant since 2003. Of more concern, however, are the very low attendance levels that indicate the proportion of students attending for more than 90% of available school days. These have also remained constant but at the much lower levels of around 25% in primary schools and 15% in secondary. In terms of absolute numbers, then, we can estimate that there are just over 300 students currently in the system who have an attendance record that is likely to assist in their ultimate achievement of WACE and/or VET qualifications. It seems unlikely to be a coincidence that roughly the same number achieve above or at National Minimum Standards in NAPLAN testing. If this continues to be the level of successful output from schooling, then it may be enough to sustain the current rate of employment in the region but it would not be sufficient to achieve any parity targets that might be set.

As far as training is concerned, a key finding is that Argyle mine has been a primary worksite for Aboriginal apprentices having accounted for as much as 40% of all Aboriginal people in an apprenticeship in 2011 and 36% in 2016. The question now arises, given the imminent closure of the mine, which alternate worksites will provide the same level and content of training and opportunity.

Housing and infrastructure

Perhaps no other area of public policy epitomises the decline in public access data on the circumstances of Aboriginal people in the East Kimberley (and generally in remote areas of Australia) more than that of housing and infrastructure. From the early 1990s ATSIC lobbied for and financially supported the Community Housing and Infrastructure Needs Survey (CHINS) up to the last of four surveys in 2006. The Western Australian Government also conducted three rounds of an Environmental Health Needs Survey (EHNS) up to 2008. Since that time, the very detailed data on Aboriginal housing and infrastructure available from those sources has evaporated under the influence of the post-ATSIC new public management regime. This shift towards mainstreaming is epitomised by the National Partnership Agreement on Remote Indigenous Housing. This redirected Australian government funding and responsibility for housing and municipal and essential services away from Indigenous-controlled organisations to State governments (Hunt 2018). In the process, the acquisition of detailed and comprehensive data with which to assess wholesale needs

and measure progress appears to have taken a back seat in favour of a focus on tenancy compliance and rationalisation of essential services involving fewer localities. Consequently, it is now not possible to measure change in the details or the range of housing and environmental health infrastructure for all localities across the East Kimberley where Aboriginal people might choose to live since the data required for such a comprehensive exercise no longer exist. The primary source now available to assess region-wide Aboriginal housing conditions (on advice from the Department of Communities) is the national census and this, quite simply, is not up to, or even designed for, the task.

The census does, however, furnish some insights into housing tenancy arrangements and occupancy levels over the past 15 years and what it shows most clearly is a lack of any change in these. For example, in 2001, Aboriginal households were overwhelmingly in rental accommodation and this remains the case. As a consequence, the very low rates of home ownership recorded in 2001 were only marginally higher in 2016. While transitional housing arrangements have been in place since that time to encourage further home ownership results to date, at least in terms of that particular outcome, have been minimal. As for the adequacy of housing stock, the percentage of dwellings deemed to be overcrowded has reduced but doubt remains over ultimate figures due to census population undercount and so reported levels are a minimum only. Crude adjustments to numbers per dwelling can be made but the official measures of housing need are based on the composition of families in dwellings and these cannot be adjusted so the true situation remains unknown. In any case, large numbers of dwellings were classified by the census as either unoccupied or their occupancy was imputed resulting in a loss of data. Considerable discrepancies also exist between census and administrative figures on housing stock.

From the perspective of regional planning, then, the key take-home message from the analysis of available housing and infrastructure data is that Aboriginal interests in meaningful and informed decision-making have been compromised by a diminution of data sources over the past decade or so. This highlights the ongoing lack of Aboriginal data sovereignty in Australia (Kukutai and Taylor 2016). It demonstrates how unilateral actions by governments continue to devalue and hinder the capacity of Aboriginal people to pursue self-determination and participate in decision-making on matters that directly affect them.

Health status

Given the prevalence of potentially avoidable diseases in the baseline profile of Aboriginal mortality and morbidity in the East Kimberley (Taylor 2004) it was always hopeful that measurable improvement in health outcomes would be evident in any subsequent update. However, with so many variables impacting on such outcomes and on their underlying determinants, it is difficult to determine what sort of lead time for improvement might reasonably have been expected. Nonetheless, given that many of the baseline measures in the initial report referred to outcomes in the 1990s it would not seem unreasonable to have assumed that by 2016 (a generation later) investments in health infrastructure and public health measures, along with socioeconomic improvement in the population itself, might have resulted in at least some discernable positive change in health status. Certainly, such an expectation underlies the holistic goals of both government and company policies. As it turns out, while many of the measures of health outcomes have shifted significantly in the right direction it is also

the case that many have not. Either way, Aboriginal health status still remains substantially behind that of the general population—male mortality rates, in particular, stand out as persistently excessive both compared to local female rates in the East Kimberley and against Aboriginal male rates nationally. Aboriginal mortality overall also remains relatively premature.

Of particular interest as a measure of development outcomes is the rate of childhood mortality. This is because high child mortality levels have been shown to correlate with levels of poverty, with the availability, accessibility and quality of health services, with environmental health risks, with maternal health status, and with poor nutrition. In other words, with a range of factors that are all amenable to public policy intervention and improvement. To that extent, it is encouraging to find that Aboriginal child mortality rates in the East Kimberley appear to have followed the national trend downwards, although, by the same token, they remain relatively high.

While overall Aboriginal mortality rates are lower than they were this change is not significant. Also, the leading causes of mortality observed over the period 2002-06 have remained the same. These include diseases of the circulatory system followed by neoplasms, respiratory disease, and external causes. In effect, Aboriginal mortality remains dominated by diseases that are potentially avoidable. To the extent that they are amenable to screening and primary prevention their prevalence provides a partial indication of the effectiveness of population health initiatives. It is therefore encouraging to report a statistically significant drop in potentially avoidable mortality since 2002-06, although the rate increased after 2007-12 and it is still much higher than the national rate for Aboriginal people. Notable here is an increase in the mortality rate due to self-harm.

These underlying causes of mortality are manifest first in morbidity rates that are presented here both with and without separations involving dialysis because Aboriginal separations in the East Kimberley rose dramatically after the opening of the Kununurra Renal Health Centre in 2013. Rates without dialysis reflect the impact of primary health initiatives aimed at lowering the incidence and prevalence of underlying conditions as well as any changes to social determinants of these outcomes such as employment, education and housing. To this extent, the finding that Aboriginal morbidity rates display no statistically significant decline partly reflects the slow pace of socioeconomic change as well as the long lead times that are required for public health initiatives to be implemented and have effect. It should be pointed out that absent from the analysis of change in health outcomes is any discussion of the role of colonisation and culture (Walker et al. 2017), primarily due to a lack of relevant data. Efforts to generate such data elsewhere in Australia are now underway via the *Mayi Kuwayu* study which seeks to quantify associations and pathways between Aboriginal and Torres Strait Islander cultural practices and health and wellbeing outcomes (Jones et al. 2018). No such data presently exist for the East Kimberley and this is a shortcoming.

Underlying determinants aside, one of the difficulties faced in attempting to establish and account for trends in health outcomes is a sort of observer-effect whereby recorded incidences of particular morbidities can be influenced by growing awareness of their public health significance. A case in point arises with respect to both FASD and alcohol-related hospitalisations. In the case of the former, constraints on the recording and reporting of the incidence and prevalence of FASD can arise from a low level of

awareness by clinicians of FASD conditions, the complexity of diagnosis, and the absence of nationally-agreed and consistent diagnostic criteria and definitions. Nonetheless, awareness of the condition in the East Kimberley is heightened by proximity to the Fitzroy Valley where the only definitive population-based prevalence study to date found FASD rates to be among the world's highest. Although equivalent prevalence data still do not exist for the East Kimberley, the Ord Valley Aboriginal Health Service has administered a FASD prevention program since 2008. Despite this, the only available source of systematic FASD data for Aboriginal people in the region are hospitalisation data for the period 2007-18. These reveal that all FASD diagnoses over this period have been for Aboriginal persons. They also indicate a much lower FASD rate than found for the Fitzroy Valley, and that this rate fell substantially over time.

To the extent that low-birth weight reflects fetal development, there may be some association between this decline and a similar reduction in low-birth weights in the East Kimberley. However, it should be noted that these hospital-based FASD diagnoses relate to the extreme end of the spectrum of various conditions and they may therefore lack the sensitivity needed to detect many cases of FASD in the community. Also running counter to the apparent reduction in FASD hospitalisations is a substantial rise in alcohol-related emergency department presentations with the age-standardised rate for Aboriginal females now significantly higher than for males, with especially high rates at child-bearing ages.

A further health issue that will require growing strategic support is dialysis treatment for end-stage renal disease. As in many parts of Australia, Aboriginal hospitalisation rates in the East Kimberley are excessively high if they include separations for dialysis. The evidence from age-specific rates in the East Kimberley shows that this rise in rates commences as early as 35 years onwards. Prevention, of course, is more complicated than treatment not least because many underlying determinants have their antecedents in foetal and infant life as per the Barker (1994) hypothesis. This would certainly be the case from the socioeconomic indicators presented here and in the initial baseline study.

As Eades (2000) has put it, from a life-course perspective, a person's current physiological status can be seen as a marker of their past social position. The essential point is that the need for dialysis treatment will inevitably be around for some time to come—indeed, it is likely to continue rising in line with projected ageing of the population. This is despite a significant reduction in the rate of endocrine, nutritional and metabolic disease due to a statistically significant drop in the age-standardised rate for diabetes mellitus from 2,032 per 100,000 in 2002-06 to 801 per 100,000 in 2012-16. From the perspective of attempts to enhance the wellbeing of East Kimberley Aboriginal people, dialysis treatment will be ever-more disruptive to many people's lives (not just to patients) due to the frequency of visits and the time required, especially where this involves long-distance travel away from a home base.

Further disruption to the lives of Aboriginal people in the East Kimberley is caused by disabilities defined as any continuing conditions that restrict everyday activities. Since the present exercise is focused on measuring change in outcomes over time, the only continuous source of data for this purpose is provided by the five-yearly ABS census. Despite high non-response to the census question on disability, we can say that Aboriginal people have consistently accounted for more than three-quarters of those in the East Kimberley with a disability. This refers only to those with profound or severe

core activity limitation and so should be considered a conservative metric. As for estimated numbers, these have risen over time and there are now more than 300 Aboriginal people who are substantially hampered in their capacity for economic participation. While this is roughly in line with current estimates of regional demand for NDIS services, the strong relationship between age and disability means that population ageing will lead to rising demand.

Directly related to this will be a rising demand for personal care workers. Already, a sizeable number of Aboriginal adults in the region (around 830) provide some unpaid home-based care to family members or others because of a disability, long-term illness or problems related to old age. While some of these may well acquire training and formal positions via the NDIS roll-out obviously not all can because projected job creation via NDIS amounts to just 150 personal care workers. That issue aside, the question arises as to who is going to provide the back-end organisational support to ensure that individuals are well-positioned to receive appropriate training and accreditation via NDIS. This situation presents a rare strategic opportunity for regional Aboriginal organisations to make some contribution towards meeting both health and employment targets. Despite this opportunity, most care work will remain unpaid and ad hoc. Given the magnitude of numbers involved, and the undoubted pressures on families that arise from high morbidity in general, the consequences of poor health status clearly impact on a sizeable proportion of the East Kimberley Aboriginal population. This feedback loop can only intensify as the population ages and there is an urgent need to consider the implications for care sector development.

Crime and justice

As if the challenge of overcoming persistent poor health status was not enough, added burden for regional planning is provided by continuing Aboriginal over-representation in the criminal justice system. The original baseline study found that interaction with the police, and subsequently with the court system and various custodial institutions, was a pervasive element of Aboriginal social and economic life in the East Kimberley. From the latest data it is clear that this situation has persisted. Virtually all criminal cases brought to the Children's Court in the East Kimberley still refer to Aboriginal defendants and the Aboriginal share of Magistrates Court cases has averaged as much as 92% since 2012. Feeding into this are rates of arrest that, while lower than they have been, still account for around 40% of Aboriginal males aged 10 years and over and 10% of females. If we focus on young adult males aged between 18 and 29 years, the arrest rate is higher still, possibly around 54%. Given empirical evidence of a negative association between arrest and employability this observation alone could account for the low economic participation rates reported for young adult males, to say nothing about the numbers in custody at any given time (around 15% of males aged 18-34 years) or subject to a Community Based Order (13% of males aged 18-34 years). Presently (2016-17), a total of 191 (5%) of Aboriginal adults from the East Kimberley are incarcerated. If the government's aim of reducing this 2016-17 level by 23% in ten-year's time were to be achieved (Government of Western Australia 2019) this would still involve 147 adults representing 3.2% of projected resident adults, although this latter proportion would be higher at 6.3% if males alone were considered.

Clearly, any notion that an economic dividend might emerge from the demographic shifts underway in the East Kimberley, would have to address the scale of social and economic disengagement implied by the crime and justice data presented in this report.

In this regard, it is timely that the recent Australian Law Reform Commission inquiry into the incarceration rate of Aboriginal and Torres Strait Islander peoples (ALRC 2017) has presented recommendations (albeit many made before) to reform underlying procedural causes of Aboriginal over-representation in the criminal justice system. In particular, the inquiry calls for a reassessment of mandatory sentencing and statutory fine enforcement as these affect Aboriginal people disproportionately. It also calls for the formation of Aboriginal Justice Agreements that would enhance Aboriginal leadership and participation in the development and delivery of strategies and programs for Aboriginal people in contact with the criminal justice system. As part of this it seeks to promote justice reinvestment through redirection of resources from incarceration to prevention, rehabilitation and support in order to reduce reoffending and the long-term economic costs of incarceration. These are all objectives that community leaders in the East Kimberley may be well placed to engage with.

Data governance and regional planning

At the time of the completion of the original baseline study of the East Kimberley region (Taylor 2004), the Office of Evaluation and Audit within the Aboriginal and Torres Strait Islander Commission (ATSIC) had itself just completed an evaluation of the information needs of ATSIC Regional Councils as they related to Regional Council planning, outcome measurement and advocacy with special reference to data availability and requirements (ATSIC 2003). The evaluation found that many issues remained unresolved including, *inter alia*, the need for appropriate resourcing of regional planning activities; the need for government agencies and Regional Councils to work together in the development and implementation of regional plans; the desirability of a central coordination, implementation, monitoring and reporting point for regional planning and its outcomes in terms of services for Aboriginal and Torres Strait Islander people and measurement of their outcomes; and the linking of national data requirements and reporting to regional and community information needs.

Although ATSIC itself was soon to be abolished, the issues it identified regarding Aboriginal access to and utilisation of data have remained unchanged and largely unaddressed. In the East Kimberley, these findings from the early 2000s have acquired renewed currency with the emergence of new regional planning structures, mainly in the form of the Empowered Communities group serviced by the BBY Aboriginal Corporation, but also in the context of PBCs in managing the interests of Native Title holders as well as discussions around what a regional voice to Parliament, were it ever to eventuate, might entail and require. In amongst all of this, an in-principle commitment has emerged between COAG and the Coalition of Aboriginal and Torres Strait Islander Peak Bodies (the Coalition of Peaks - COP) for a new data project led by Aboriginal and Torres Strait Islander people to work towards regional profiles that cover reform priorities, outcomes, building blocks and targets, and other jointly agreed matters important to the development of each region (COP 2020: 9). These profiles are intended to be accessible by communities and organisations and Traditional Owner groups to support development led by Aboriginal and Torres Strait Islander people.

While it is not clear precisely what geographic frame is intended for regional profiles, it does seem as though the data requirements for these will, initially at least, closely align with the draft COAG Closing the gap targets (COP 2020: 22). To this extent, and

for any further development of indicators, the present analysis and many others before it (see Taylor 2009 and 2012 for example) reveal a number of relevant points:

1. Governments and NGOs do hold a good deal of social and economic data (this includes census data) on Aboriginal and Torres Strait Islander people (though not peoples) and these data can be processed by agencies and made available to external bodies.
2. However, the scope and content of these data do not always align in content and spatial coverage with the sorts of data that Aboriginal and Torres Strait Islander people find useful to their purposes especially at regional and local levels.
3. Also, the processes for accessing these data are presently *ad hoc* and mostly tortuous. No mechanism for streamlined and on-going regular access exists and each jurisdiction/agency has its own rules and procedures with some even demanding payment.
4. In addition, major issues of data quality exist and these compound as the geographic scale for which data are required decreases. A key limitation is uncertainty regarding concordance between administrative data numerators and population-based denominators. In remote areas, in particular, census undercounting accounts for much of this problem.
5. To resolve these matters a formalised role for Aboriginal and Torres Strait Islander interests in the co-design and control of data that are about them is urgently required. While Section 7(1)h of the *ATSIC Act 1989* provided the start of a template it didn't go far enough to ensure Indigenous data governance. It also demonstrated that statutory arrangements may not be lasting.

The present exercise in attempting to piece together change in Aboriginal regional social indicators in the East Kimberley since 2001 has served to underscore these issues and the fact that they remain unresolved. For one thing, although BBY serves as a backbone organisation in part to service the regional information needs of the Empowered Communities group, this is in no way a statutory role and it certainly has no lasting jurisdiction beyond a working relationship with the NIAA in Canberra. Notably absent from any formal data sharing arrangements are PBCs despite their expanding role in securing social and economic outcomes for Native Title holders.

The process established for requesting and receiving data from State and Federal government departments for this report has been largely *ad hoc* and dependent on connections between Rio Tinto's Government Relations Department and the Department of Premier and Cabinet in Perth. No systematic or otherwise legitimated means of achieving this currently exists. While it may be that Traditional Owners of the Argyle Participation Agreement and Aboriginal leaders in the Empowered Communities group saw the benefit of acquiring administrative data, this is still arranged and approved via third parties and no formal process is in place for their regular and seamless access to data in order to respond to their information needs at the regional and local level. In short, the present arrangements in the East Kimberley, and across the country for that matter, fall short of the basic tenets of Indigenous rights (via the UN Declaration on the Rights of Indigenous Peoples - UNDRIP) to governance over data that are about Indigenous peoples and used for their own pursuit of self-

determined development goals (Kukutai and Taylor 2016; Walter and Suina 2018; Carrol Rainie et al. 2019). There is a pressing need for governments (who invariably devise, acquire, retain and control access to much of these data) to give effect to these rights as per Articles 38 and 42 of UNDRIP.

Admittedly, part of the roadblock here remains the lack of formalised regional Aboriginal governance structures in which to invest such data rights. Ironically, as we have seen, ATSIC was perhaps the closest to fulfilling such a role as it clearly articulated through its regional planning template just prior to its demise. That is part of the risk of merely legislating for, rather than constitutionally-enshrining, such a role. However, some regions, including the East Kimberley, do now have a form of government-sanctioned regional body with its own clearly articulated Regional Development Agenda under the Empowered Communities model (albeit on an opt-in and out basis) through which such arrangements could begin to be explored and tested. In a sense, the present exercise has commenced such a process, but if the experience is anything to go by then the main task still lies ahead.

For effective regional planning that is directed by Aboriginal people to address their own determined needs and purposes, governance structures for the formal acquisition and control of data need to be agreed and established along with an assessment of capacity-building requirements to achieve this (Smith 2016). No doubt this consideration forms part of the new COP/COAG Partnership Agreement on Closing the Gap (<https://www.naccho.org.au/wp-content/uploads/MS19-000697-Partnership-Agreement-on-Closing-the-Gap-2019-202973948.pdf>). No doubt too, consideration is underway regarding appropriate framework agreements for data-sharing between relevant parties to facilitate the monitoring and evaluation of regional population outcomes. Invariably, though, these sorts of evaluations (including the present report) tend to reflect on outcomes past since they rely heavily on mainstream data reporting processes that have their own timetable and are not necessarily geared towards rapid program appraisal or regional profiling. This both restricts and slows the process of data access and it instils a sense of constant catch-up after the event. It also limits the range of measures involved. A more structured, streamlined and customised approach should seek to ensure timely access to data that are directly linked to locally-determined development priorities and that are fit for purpose in assessing the success or otherwise of policy and program interventions. Ultimately, the aim should be to anticipate and act upon needs before they are realised, not to just report on them after the event.

10. Postscript: implications of COVID-19

Shortly after the manuscript on *Change in Aboriginal Social Indicators in the East Kimberley 2001-2016* was submitted, reports started to emerge out of Hubei province in China regarding the outbreak of a novel coronavirus, SARS-CoV-2. On February 11 2020, the World Health Organisation named the respiratory disease associated with this virus as COVID-19. One month later, it declared the virus as a pandemic strain. Within days, the government of Western Australia declared a state of emergency and issued 'Remote Aboriginal Communities Directions' aimed at limiting the spread of the virus in Aboriginal communities by restricting 'non-essential' movement. While the Department of Health and Department of Communities assumed oversight roles in the COVID-19 response in Western Australia, Aboriginal Community Controlled Health Services and Aboriginal Community Controlled Organisations quickly mobilised at the coalface. Referring to the Kimberley, the Premier of Western Australia expressed 'grave concerns' regarding the potential spread of the virus and instituted strict travel bans effectively sealing off Local Government Areas (ABC 2020). At the national level, a *Management Plan for Aboriginal and Torres Strait Islander Communities* has been developed by the Aboriginal and Torres Strait Islander Advisory Group on COVID-19 which is co-chaired by NACCHO. This is endorsed by the Australian Health Protection Principal Committee (AHPPC) as part of the *Australian Health Sector Emergency Response Plan for Novel Coronavirus* (Commonwealth of Australia 2020). This management plan highlights the many social determinants of poor health outcomes for Aboriginal people that presented challenges to communities and service providers even before the present crisis.

Despite these responses, almost inevitably COVID-19 infections were reported from the Kimberley, including the East Kimberley, and the focus shifted rapidly from the initial action stage of community and health service preparedness and case detection, to a more targeted action stage of what to do in the event of multiple cases of sustained community transmission (Commonwealth of Australia 2020: 5). At the time of writing, no community transmission has been reported in the region but in the absence of a vaccine this will last only as long as containment measures hold up and the need to plan for and resource mitigation measures remains ever-present. While population immunity is effectively zero, any move to lift restrictions opens the possibility of a second wave of potential transmission and so it is likely that current measures may be around for some time to come.

One consequence of containment, of course, has been a downturn in economic and social activity with many workers stood down (including at Argyle mine), many businesses having ceased or curtailed operations, new social security rules and payments introduced including a cessation of CDP reporting and work for the dole activities, home schooling encouraged though not mandated, repatriation support provided to East Kimberley residents both outside and inside the region to relocate to home communities, and laws enacted to restrict mobility and social gatherings. Many of the social, economic and governance issues for Indigenous people that arise from these measures have been canvassed by researchers at the Centre for Aboriginal Economic Policy Research at the ANU (Markham et al. 2020). Needless to say, they portray a very different policy world to the one that framed the report on social indicators submitted just prior to the viral outbreak. In recognition of this new reality, this postscript was constructed as a necessary corrective. The social determinants of

poor health outcomes in the East Kimberley provide the essential background. What is required now is to assess the significance of these for pandemic planning in the region. Two questions in particular are considered:

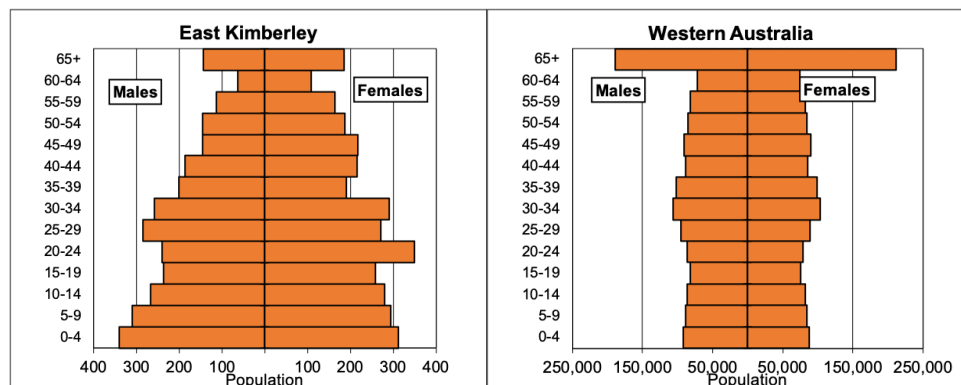
- Which social and economic characteristics of the regional population are likely to have implications for the unfolding of the pandemic and associated response measures?
- How is the COVID-19 pandemic and its associated response measures likely to impact on social and economic outcomes in the East Kimberley?

Demography

The first point to note regarding the ‘current’ population data in the main body of the report is that they refer to June 30, 2016. In other words, they are now somewhat dated. Normally, for region-wide analysis, it is usual to wait until new estimates are processed following the next census but these won’t be finalised until 2023. Given the urgent need for the best available data it is prudent in the meantime to use official population projections to 2020 based on the 2016 estimates. These are shown in Figure 10.1 and Table 10.1 by age and sex.

As shown in Figure 10.1, the Aboriginal population of the East Kimberley has a much younger age profile than that of the total population of WA, however the age trajectory of the former has been shifting in the direction of the State-wide profile for the past decade or so and it is starting to take on many of the same features with a bulge in the working-age group, signs of narrowing at the base, and a discernably older population as time goes on.

Figure 10.1 Age-sex pyramids of Aboriginal estimated resident population in the East Kimberley Region and total population of Western Australia, 2020



Source: ABS 2019

The current (pre-crisis) Aboriginal population is estimated to be 6,254, 53% of these are female and 47% male. The proportion of females is higher at older ages – 54% among 20-49 year olds, and 58% among those aged over 50 years.

These age and sex data have significance in the context of what is known so far about the age and sex distribution of COVID-19 infections and fatalities. In theory, anyone in the population can be infected with the virus since there is no immunity. However, select studies to date (Guan et al. 2020; Verity et al. 2020) and the advice from Australian government modelling provided by the Melbourne School of Population and Global Health (Moss et al. 2020) point to positive correlations between age and being

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male and the need for hospitalisation, ICU care, and probability of fatality. Accordingly, the current advice to Indigenous Australians from the Commonwealth is that people over the age of 50 years are at greater risk of more serious illness if they are infected with coronavirus. In the East Kimberley, over 1,100 Aboriginal people are over the age of 50 years (Table 10.1). This amounts to almost one-fifth of the population (18%), a proportion that has been steadily rising

Table 10.1 Aboriginal estimated resident population by select age groups: East Kimberley Region, 2020

Age group	Males	Females	Total
0-4	339	313	652
5-19	814	833	1,647
20-49	1,311	1,535	2,846
50+	465	644	1,109
Total	2,929	3,325	6,254

Source: ABS 2019

Of course, these ‘current’ population figures are simply the product of assumptions made by the ABS regarding how the components of population change would vary over time from 2016 onwards. One of these assumptions was that net migration recorded between 2011 and 2016 would remain the same. This serves to constrain population growth since, as the main report shows, net migration during this period was negative, especially at younger ages. One pandemic intervention that (obviously) could not have been foreseen in drawing up projection assumptions has been the assisted transportation via the Community Connectors program to repatriate Aboriginal residents of the region back to their home communities. Part of this activity has involved the return to the East Kimberley of many individuals, such as school children, who were absent elsewhere in WA. Unfortunately, separate data on this return migration are not available and while it is likely that it may involve more younger people this cannot be confirmed at this stage.

What is known, however, is that some redistribution of population has occurred within the East Kimberley due to the return of people from regional towns and larger communities back to country. The Department of Communities has begun to gather data on the numbers of people involved in the Community Connectors program and early returns indicate that this runs into the hundreds with the vast majority of these returning to remote, often isolated, communities. It is also reported that an unknown number of others have made their own way home. One observation in the section of the report on population distribution was of a steady shift in the residential location of people towards the three main towns of Kununurra, Wyndham and Halls Creek which in 2016 accounted for 53% of the Aboriginal population. Using the indications of repatriation to date from the Department of Communities, it is possible that at least 10% of these urban populations have now dispersed to remoter places and it is not inconceivable that this figure could be much higher, possibly up to 20%? While this issue will be revisited under the section on housing and infrastructure, this redistribution of people, together with high circular mobility, may complicate the task of tracking contacts in the event of community transmission.

The other unforeseen demographic shock (although this remains potential only) is the probability of higher regional mortality due to COVID-19. Such an outcome would be contrary to the three scenarios underlying official population projections each of which assumes (varying) levels of increased survival. Although this does not affect the use of

projections for estimating the current 2020 population, it may well impact on future post-2021 census projections depending on what exactly happens with the pandemic. A worst-case scenario could see growth of the regional Aboriginal population brought to an abrupt halt with the greatest reduction in numbers among older people.

Further impact would arise if there is increased out-migration of the region of non-Aboriginal residents. In 2016, non-Aboriginal people accounted for 45% of the region's resident population with the vast majority of these (82%) located in Kununurra and Halls Creek. For the most part, these individuals originate from outside of the East Kimberley (43% of those resident in 2016 lived elsewhere in Australia or overseas in 2011) and their main reason for being there is employment. While data are not yet available on the impact of the pandemic on economic activity in the East Kimberley, it is clear from evidence elsewhere that this could be substantial leading to widespread job losses. In this event, heightened out-migration of non-Aboriginal people back to their places of origin may well have occurred, much in the same way that a migration of Aboriginal people back to the region has taken place. Of course, the outcome from these countervailing migration streams would be an increase in the Aboriginal share of the regional population which presently stands at around 55%. Even a 10% gain in Aboriginal population and a 10% loss of non-Aboriginal population would see a rise in the Aboriginal share of population to 60%. A related impact would be a potential loss of skilled and professional workers and reduced populations in both Kununurra and Halls Creek.

Obviously, there is a good deal of uncertainty regarding the region's immediate and future demography. However, as noted in the main report, this much is nothing new for the East Kimberley, especially with regard to Aboriginal numbers. Given the quite reasonable prognosis that we are just at the beginning of a prolonged period of pandemic disruption, it is likely that by the time the 2021 census is completed in just over 12 month's time, the population of the East Kimberley will be quite different from what it is today and there will be a need to obtain a precise fix on whatever changes are wrought. One recommendation in the main report was that much closer collaboration is required between the ABS and Aboriginal Community Organisations in both the lead up to and conduct of the national census if data quality is to improve. The intervening pandemic makes this requirement especially urgent.

Labour market

While the usual labour market response in times of economic downturn is for casual and low-skilled workers to be retrenched first (Dinku 2020), the depth and global nature of the COVID-19 pandemic has meant that almost no employment sector or occupational level has been left unaffected. Nonetheless, it remains the case that those in casualised work, in work-placement programs, and in lower-skilled jobs requiring minimal qualification, are likely to be shed first and they are also the least likely to resume normal duties once the crisis is over (Hunter 2009; Dinku 2020). To the extent that Aboriginal people in the East Kimberley are over-represented in these categories of employment, as demonstrated in the regional labour market analysis, the impact of regional economic downturn could be substantial and long-lasting for individuals and households alike. An unknown component of this impact is the extent to which Aboriginal workers have been able to access the federal government's 'JobKeeper' scheme. Given eligibility rules requiring continuous employment with the same employer for the past 12 months it seems likely that this will be the exception rather than the rule.

One positive observation, though, is that Aboriginal workers, especially female workers, are over-represented in service-sector jobs such as education and training, and health care and social assistance – jobs that are likely to be in constant, if not expanded, demand under pandemic conditions. There is also potential to support an expanded role for Aboriginal Community Controlled Organisations as employers given their widespread community networks but, as the main report noted, there is an urgent need for data to understand their current status and to start contemplating what this could eventually be in a pandemic recovery phase. Models for thinking this through are already underway under the auspices of regional Aboriginal organisations while the Aboriginal Peak Organisations of the Northern Territory has also developed a detailed set of plausible options (APONT 2017).

The converse of low Aboriginal labour force participation is high participation in CDP and Work for the Dole programs. Policy changes here are also likely to impact on outcomes. In order to comply with social distancing and restricted mobility decrees, face to face services with CDP providers have been suspended as have group-based Work for the Dole activities along with job seeker compliance actions such as financial penalties. The stated purpose of CDP is to support job seekers in remote areas to build skills, address barriers to employment and contribute to their communities through a range of activities. In the main report it was estimated that around 15% of Aboriginal people in jobs in the East Kimberley were in CDP job placements. If we also consider that these placements are part of the almost two-thirds of Aboriginal adults in the region who make up the CDP caseload, then, using the program's own logic, the administrative changes announced could have widespread implications for job readiness and community activity if they lead to a diminution of support services and/or participation. Such disruption would strengthen arguments made in favour of more community-controlled work programs (APONT 2017).

Income

One of the starkest findings from the main report was that the rate of Aboriginal household poverty in the East Kimberley was as high as 53% in 2016 having risen from 50% in 2011. In Halls Creek LGA, as much as 67% of the Aboriginal population was estimated to live in low-income households; in Wyndham-East Kimberley it was 47%. These findings, of course, reflect in large part the widespread reliance of people on social security payments as opposed to wages and, to that extent, any alteration to social security payments can affect much of the population. One significant development, then, has been the effective doubling (for a six-month period) of the rate of the Jobseeker payment (formerly Newstart Allowance) to around \$1,100 per fortnight via the Coronavirus Supplement. Recipients of other payments such as Parenting Payments and Youth Allowance also receive the same supplement.

While this boost to income is no doubt welcome (albeit temporarily) a quick calculation indicates that it will have little impact on poverty levels since the initial Newstart payment had fallen so far behind other incomes based on wages and was way behind the national minimum wage. It is also worth recalling that part of the reason for increased poverty in the first place was the withdrawal of top-up income from the CDEP scheme due to previous administrative changes, plus the fact that welfare incomes had remained essentially unchanged in real terms for the past two decades. This newly instituted 'top-up' is therefore to incomes that had already been depressed in a region that has persistently recorded amongst the highest prices for goods and services in

Western Australia (based on town prices). Quite what the pandemic means for prices in the region remains to be measured but there are reports from across the country of price gouging and the need for constant surveillance will be essential. Meanwhile, the cost of goods in community stores, that people will be increasingly reliant upon due to travel restrictions, are well known to be excessive even before the pandemic. Travel restrictions and population dispersion also raise the question of how people in some localities will even access food supplies with many, no doubt, relying on food drops. Added to this are likely disruptions to supply chains and product hoarding. These sorts of pandemic-driven market distortions mean that, more than ever, meaningful assessment of income adequacy will need to take into account both purchasing power and physical ability to access goods and services.

One issue that the temporary social security arrangements raise is what to do after the six-month period is over? The federal government has used the term ‘hibernation’ to describe current arrangements with the implication that the economy and associated structures will revert to pre-pandemic settings once the immediate crisis is over. There was vigorous debate already underway regarding a need to raise the level of Newstart Allowance closer to the minimum wage and this is likely to be given added impetus by the new *de facto* adjustment. Winding this back would, at a stroke, return many Aboriginal individuals and households in the East Kimberley back into deeper poverty. While such a potential action is still some way off, it is worth beginning to contemplate the social and economic implications of this for any post-pandemic recovery.

Schooling

At the time of writing, the directive from the WA Department of Education regarding schooling was that schools would remain open for students whose parents felt they needed to use them. In general, however, families are encouraged to keep their children at home. Catholic schools have advised the same. As for school attendance out of region, this is now prohibited without official exemption. In any case, as we have seen, a substantial effort has gone into repatriating school students back to the region. From Term 2 of 2020, the main delivery mode will be distance schooling using a combination of hard copy packs and online.

An immediate issue, then, is to what extent do people in the region have home access to the internet using any of the standard devices and types of connection? From the 2016 census we know that for non-Aboriginal households in the East Kimberley, this is almost universal with people in as much as 85% of dwellings having internet access. For Aboriginal households, on the other hand, accessibility is less than half of this with people in only 40% of dwellings accessing the internet from home, and the majority of these (70%) located in Kununurra, Halls Creek and Wyndham. While these figures provide a fairly crude measure of actual internet access, they nonetheless raise questions about the feasibility of online teaching especially for children and parents in locations away from the three main towns, which, as we have seen, now have inflated populations due to repatriation. Institutionalised online access might provide one solution but this would seem to contravene the whole idea of online schooling as an exercise in social distancing, although this proposition might be questionable anyway in crowded dwellings and highly mobile and extended family situations.

Housing and infrastructure

Aside from messaging around personal hygiene, the need for minimal contact with others via social distancing has been the mainstay of measures devised in the initial containment phase of pandemic control. Both of these measures have implications for housing and infrastructure. As pointed out in the main report, the idea of 'Housing for Health' has long underpinned thinking around the appropriate provision of remote community housing and associated environmental health hardware (Pholeros et al. 1993) and this has formed the primary consideration of Indigenous housing service delivery since the early years of ATSIC. Fundamental concepts involved here include minimising crowding in dwellings and ensuring functional washing, sanitation, cooking and storage facilities with appropriate maintenance backup. In ATSIC days, these criteria were applied wherever Aboriginal people chose to live. In order to ensure that needs were measured, addressed and monitored ATSIC instituted the Community Housing and Infrastructure Needs Survey (CHINS) that became an adjunct to the 5-yearly national census. This regular detailed survey of the functionality of housing and infrastructure in all discrete Indigenous communities across Australia, including estimates of population and mobility, at even the smallest of locations even if not currently occupied, as well as inventories of services accessed or provided, was unfortunately lost for community planning following the demise of ATSIC.

I say unfortunate with some irony, because it is interesting to observe that part of the request now to community leaders by the Department of Communities in order to inform Local Pandemic Action Plans is for data on items that were once routinely gathered by CHINS. This includes information on numbers of people, older people and children, and people with specific needs; whether the location has a health clinic or nurses and where health services are accessed; how food supplies are accessed and who is responsible for providing power, water and wastewater services?; whether there is an airstrip and access roads, are they functional? How is the community supplied? What telecommunications exist? What service providers visit? Leaving aside that all of these data (and much more) were once gathered for every locality, it seems surprising to say the least that a Department whose portfolio responsibility is for 'communities' would not already know the answer to such questions. As with a number of facets of the pandemic crisis, the need for urgent action has usefully served to expose areas of public policy where data standards have either dropped or been found wanting.

As outlined in the main report, the area of Aboriginal housing and infrastructure is perhaps the prime example of this, not just in the East Kimberley but generally across Australia, especially in remote areas. In the absence of adequate coverage and reporting by State or Commonwealth agencies, the primary source now available to comprehensively assess Aboriginal housing conditions and needs is the national census and this, quite simply, is not up to, or even designed for, the task. Even basic measures such as overcrowding, that would seem well-suited to census analysis and are crucial during an infectious disease pandemic, are substantially comprised in regions like the East Kimberley by undercounting of both people and dwellings. Of particular concern, given the exodus of people back to the bush, is the lack of real knowledge about the environmental health conditions that they are returning to as epitomised by the search for basic data to inform Local Pandemic Action Plans. In the main report it was observed that there were no systematic data available for as many as 68 mostly small outstation localities across the region that no longer receive housing services. This is part of what Smith (2020) refers to as a growing information and communications gap which, in turn, betrays a self-governance gap that Aboriginal community-controlled

organisations are best-suited to fill. Once again, the pandemic is exposing weaknesses in post-ATSIC governance arrangements.

Health status

The Australian Government has advised that a number of chronic health conditions are of concern in the context of COVID-19 treatment and disease progression. These include chronic renal failure, chronic heart disease, chronic lung disease, poorly controlled diabetes and poorly controlled hypertension. Concern for the presence of these conditions is heightened for Aboriginal and Torres Strait Islander people aged over 50 years. Evidence from countries with large numbers of cases tends to support these concerns as the presence and number of the same underlying health conditions and comorbidities has been shown to be associated with increased hospitalisation, ICU admission and clinical outcomes of COVID-19 (CDC COVID-19 Response Team 2020; Guan et al. 2020; Yang et al. 2020). Heighted risk with age is also indicated (Verity et al. 2020) and this forms a key variable in Australian government modelling as provided by the Melbourne School of Population and Global Health (Moss et al. 2020).

With this advice, it is relevant to note that all of the above chronic conditions are highly prevalent in the Aboriginal population of the East Kimberley. In particular, diseases of the circulatory system remain the leading cause of mortality for Aboriginal people as, indeed, they do for the population generally in Western Australia. However, the Aboriginal age-standardised mortality rate for these diseases in the East Kimberley in 2016 (393 per 100,000) is more than twice that of non-Aboriginal people in Western Australia (151 per 100,000) (AIHW 2017: 28). As for morbidity, the main report shows that influenza and pneumonia and acute respiratory disease are the first and third leading causes of hospitalisation (net of dialysis) for Aboriginal residents of the East Kimberley and that age-standardised rates of these have both risen over the past 15 years. In 2012-16, Aboriginal rates of hospitalisation for these conditions were respectively 9 times and 5 times higher than local non-Aboriginal rates.

Also worth noting is the much earlier onset of mortality and morbidity in the Aboriginal population. This is especially so among males. Hospitalisation rates for Aboriginal males aged 20-24 are double that of other males in the same age group, four times higher among those 25-44, and as much as seven times higher among those aged 45-49. Similar differentials are evident from early age between Aboriginal and non-Aboriginal females but not to the same extent. If hospitalisations for dialysis treatment are also included, however, rates multiply especially among females and those aged 55 years onwards.

One of the concerns facing governments as they seek to manage the COVID-19 pandemic is the potential for rapid overload of health care systems in the event of a virus breakout, particularly hospital bed and ICU capacity. From the above data, we can infer that frequent and substantial interaction with the health care system is already a common feature of Aboriginal life in the East Kimberley. This places a burden not only on local hospital and primary care units and outreach but also on regional and long-distance patient transport either because many people live far-removed from regional services or higher order facilities are only available outside of the region. While data on the adequacy of current resourcing for health care infrastructure in the East Kimberley did not form part of the main report it is likely that systems are already stretched under normal circumstances. They may now be even further stretched as many people have moved back to home communities. No doubt contingency planning is

already underway, but two potentially hidden components of any assessment of needs and adequacy may also be worthy of consideration. The first of these concerns the high rate of disability within the Aboriginal population. The second concerns the large number of Aboriginal people who work as (often unpaid) carers of the former.

Aboriginal people have consistently accounted for more than three quarters of those in the region with a disability despite comprising just over half of the population. In 2016, the census indicated an estimate of 311 Aboriginal persons with a disability compared to the much higher figure of 637 Aboriginal adults in receipt of a Disability Support Pension. This discrepancy is likely due to the wider DSS net around disability as it includes moderate and mild disabilities compared to the census question which is focused on the more severe end of the spectrum. As might be expected, the prevalence of disability increases with age and in the East Kimberley 71% of Aboriginal people with a disability based on the census definition were over the age of 50 years, the very group that is considered most vulnerable if they acquire COVID-19. Once again, no doubt existing health care systems factor in costs and special needs of caring for sick persons with a disability but whether these are adequate in the face of extra demand is a moot point.

The census also asks whether individuals spend time providing unpaid assistance to family members or others because of a disability, a long-term health condition, or problems related to old age. Unfortunately, no estimate of how much time spent in caring is acquired via this question, although the chronic nature of health conditions referred to suggests that such care is ongoing. There are others too who receive Carer Payments or Carer Allowance from DSS. Altogether, the number of Aboriginal paid and unpaid carers is estimated to be around 830 which represents one-fifth of Aboriginal adults in the East Kimberley with most falling in the latter unpaid category. This is a very substantial level of home-based carer support that could be very quickly and substantially compromised in the event of any outbreak of community transmitted COVID-19.

Justice system

Excluding healthcare settings where appropriate Personal Protective Equipment is used and precautions are adhered to, the AHPPC considers that, given the transmission characteristics of the virus, people in correctional and detention facilities are at higher risk of exposure to the COVID-19 disease. To that extent, on a per capita basis, Aboriginal people are far more exposed than most in Western Australia. In 2016, Aboriginal people in WA accounted for fully 38% of the State's prison population despite comprising just 3% of all adults above the age of 18 years. In turn, Aboriginal people from the East Kimberley accounted for 8% of these Aboriginal detainees despite accounting for 6% of the State's Aboriginal adults.

Those received into detention simply represent the apex of a criminal justice system that involves many more Aboriginal people and within which they are substantially over-represented at every stage. Some of the statistics for the East Kimberley are stark even if somewhat imprecise due to administrative uncertainty around usual residence. For example, it is possible that as much as 40% of all Aboriginal males were arrested in 2016 (among those aged 18-29 this could be as much as 54%); more than 1,100 Aboriginal people were admitted to police lock-ups in the region in 2016; just about every criminal case brought to the Children's Court each year refers to an Aboriginal defendant; the Aboriginal share of Magistrates Court cases is lower but still extremely

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high at around 92%; more than 300 individuals were subject to a Community based Order or Juvenile Justice Team Referral in 2016/17. If we put all of this together, the scale of engagement with the criminal justice system represents a situation that can only be described as abnormal for most Western Australians. In the context of pandemic control, it brings a substantial proportion of the population (and by association many family members) into compulsory confinement in institutional settings that involve a good deal of personal interaction.

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