Sustainable Health Review

Interim Report: Feedback

Following the Sustainable Health Review Interim Report feedback was sought. Open feedback provided by the organisation or individual is detailed below.

Your Personal Details	
1. **Title**	Mr ☐ Miss ☐ Mrs ☐ Ms ☐ Dr ☐ Other ☐
2. First Name(s)	
3. Surname	
4. Contact Details	
5. Organisation	Child and Adolescent Health Service
6. Location	☐ Metropolitan ☐ Regional WA ☐ Outside WA
7. Are you providing a response on behalf of your group/organisation or as an individual? **(Required)**	☒ Group/organisation ☐ Individual ☐ Other, please specify_____
Q8. Do you consent to your feedback being published, in summaries or in the Final Report? (Required)	
☒ I consent to my feedback being published ☐ I consent to my feedback being published anonymously ☐ I do not consent to my feedback being published	

Government of **Western Australia**
Child and Adolescent Health Service

Sustainable Health Review

Response to Interim Report

30 April 2018

Child and Adolescent Community Health

General comments

CAHS supports the 12 Directions put forward in the Sustainable Health Review Interim Report and would like to provide further comment in relation to Directions 1, 2, 4, 6 and 8 as outlined below.

Direction 1: Keep people healthy and get serious about prevention and health promotion

Key message: There is mounting evidence in support of disease origin during foetal life and early childhood. Prevention needs to focus on this period to maximise health gains. The aetiology of childhood obesity is multi-factorial and will require a coordinated, multi-sectoral approach, based on a social determinants of health framework.

While medical advances have delivered significant gains in life expectancy, Australians now spend an average of 10.9 years of life in ill-health, more than any other OECD country.[1] With an estimated 45% of Australians having three or more long term conditions,[2] shifting the focus to preventing rather than managing chronic disease is long overdue.

Despite the unequivocal economic benefits of preventing the onset and progression of preventable diseases, expansion of preventive health care has been limited by the high cost of acute care. To date, efforts to contain health expenditure have largely focussed on more efficient management of funds in the acute sector, rather than focussing on the preventive end of the healthcare spectrum. Activity based funding will arguably improve technical efficiency (cost reduction) in the acute sector, but may have little impact on equity and health outcomes. The most significant healthcare savings will be achieved through keeping people out of hospitals in the first place and funding needs to be realigned to incentivise more effective prevention and ultimately reduce reliance on the acute sector.

Prioritising prevention will require upstream redistribution of healthcare resources to strengthen existing preventive health services, or even further upstream, to mitigate the social determinants of poor health outcomes. In a recent review of factors affecting Australia's productivity, the Productivity Commission identified ill-health as a major barrier, recommending redesign of hospital funding to create incentives to avoid hospitalisations.[3]

The growing momentum around the Developmental Origins of Health and Disease (DOHaD) approach suggests that maximum benefits can be realised by prioritising investment in preventive health before birth and in early childhood. [4] Beyond the impact on adult health, there is also clear evidence of the broader economic benefits of investing in child health.[5]

In recognition of the critical role of early childhood preventive interventions for vulnerable children, a 2015 review of community child health services in Western Australia made recommendations aimed at improving equity and health outcomes through a model of 'progressive universalism', whereby support is provided for all children and families with more support for those who need it most. The new child health service delivery model was implemented across WA on 1 July 2017 and provides a universal platform of health promotion,

anticipatory guidance and early intervention; a targeted service with brief structured interventions for families in transient need of additional support; and more intensive, sustained support for children and families in need of ongoing support.

CAHS is uniquely positioned amongst metropolitan Health Service Providers, with one quarter of its workforce focussed on providing community based prevention and/or health promotion for children, adolescents and their families. With a highly skilled workforce trained in delivering preventive healthcare, an established presence within local communities and a well-established reputation as a trusted and accessible first point of contact with the broader health system, CAHS is well placed to assume a lead role in a realigned health system.

Preventing childhood obesity

Growth surveillance

Growth is an important indicator of overall health, development and wellbeing. Poor growth in-utero and early childhood is associated with short and long term effects including increased rate of childhood infection and the development of life- style diseases including coronary heart disease, high blood pressure and diabetes.[6] [7] Over-nutrition and obesity are also linked to poorer health outcomes.[8] Both body size during the early years of life and infant growth velocity are associated with a risk of later overweight and obesity in childhood and adulthood.[9]

Child Health Nurses monitor growth during the early years, capturing height and weight at each Universal health contact and at additional contacts as indicated. Serial measurements are captured in an electronic client record (CDIS). At the two year Universal contact and at school entry, Body Mass Index (BMI) is derived from height and weight measurements and referenced to Centre for Disease Control (CDC) BMI percentiles. Whilst BMI is used as a screening tool to identify individual children who may require an intervention, preliminary analysis of data suggests that across metropolitan Perth, almost 12% of 2-3 year olds above the healthy weight range, increasing to more than 19% by school entry (Table 1).[1]

Table 1. Proportion of children by weight category at Universal 2yr Child Health Check and School Entry Health Assessment

Age category	Underweight	Healthy weight	Overweight	Obese
Universal 2yr Child Health Check	6.0%	82.5%	8.0%	3.5%

[1] BMI is an individual screening tool and is *not diagnostic* of weight status however contributes to an overall clinical impression. The National Health and Medical Research Council (NHMRC) recommends the use of BMI scores plotted on the BMI-for-Age Percentile charts as an initial (first level) assessment to assist in identifying children who *may* be overweight or obese. Aggregate BMI rates should be regarded as indicative only. Participation rates at the two year contact are relatively low. Aggregate BMI rates at this age represent a highly engaged family cohort, which may under-represent rates across the two year old population.
A BMI (adjusted for age and sex) below the 5th percentile is indicative of a child who is underweight; a BMI between the 5th to below the 85th percentile is within the healthy weight range; a BMI between the 85th to below the 95th percentile is indicative of a child who is overweight; a BMI above the 95th percentile is indicative of a child who is obese.

(2-3 years)*	(193)	(2,664)	(259)	(114)
School Entry Health Assessment (4-5 years)^	3.0% (672)	77.8% (17,641)	12.8% (2,908)	6.3% (1,435)

** Average age 2 years 4 months; ^ Average age 4 years 6 months*

There is variability across metropolitan regions, with indicative prevalence of overweight and obesity at school entry estimated at 16 and 11 percent respectively in one region.

In addition to growth surveillance, CAHS community health services undertakes a number of primary preventive and targeted intervention activities around childhood overweight and obesity.

Breastfeeding promotion and support

The protective effect of breastfeeding on childhood obesity is well-established.[10] Child Health Nurses play a pivotal role in:

- providing education and health promotion around the benefits of breastfeeding
- supporting mothers to develop breastfeeding confidence
- identifying and assisting with breastfeeding concerns or problems and referring to specialist breastfeeding support where required.

Breastfeeding assessments are routinely completed at Universal child health checks and captured in CDIS. Analysis of breastfeeding rates across metropolitan Perth in 2016 identified variability by geographic location and demographic characteristics. The investigation also found that almost one third of infants had been introduced to formula within a week of birth and breastfeeding rates fell substantially during the first two weeks after birth.

Nutrition education and health promotion

Child Health Nurses play an integral role in promoting healthy eating habits, providing age appropriate education and parental guidance around nutrition at each child health check, as well as assisting parents to develop and implement strategies where nutritional concerns are identified. Staff are guided by the Child and Adolescent Nutrition (CAN) manual, a comprehensive reference developed by CAHS community health services and sourced from current evidence and national and international nutrition guidelines.

Developmental delay and obesity

The metropolitan Child Development Service (CDS) is a specialist developmental service providing community-based early intervention services for children with developmental delay.

Children with developmental delay are at significantly higher risk of obesity than their peers, with evidence suggesting that obesity rates in children with developmental delay are 1.5 to 2 times higher than for other children.[11] This increased risk of obesity is attributed to a range of factors, including motor coordination difficulties, sensory processing differences, and behavioural and social difficulties. These can all impact upon the ability of children to build positive mealtime routines and food preferences in early childhood, and to participate in physical activity.

CDS provides a range of targeted services to address these issues, including developmental Paediatric assessment and management, allied health therapy services and a targeted Mealtime Management program for children under five years of age.

Childhood obesity has a complex, multi-factorial aetiology. Obesity represents a health inequality in Western countries; and while prevalence rates are concerning across all sociodemographic bands, it is now most common in the most disadvantaged groups. The foundations of health inequality go beyond behavioural (healthy food habits and physical activity) and genetic (parental obesity) factors to socioeconomic and environmental factors that cannot be addressed by health services in isolation.

A coordinated, cross-sectoral approach, based on a social determinants of health framework, will be required to address childhood obesity.

Opportunities to build on existing health programs and services

Although CAHS has played a significant role in developing and implementing prevention and health promotion strategies to tackle childhood obesity, there are opportunities to build on existing programs.

Increased support for breastfeeding establishment during the first weeks after birth: with many mothers discharged from hospital before breastfeeding is successfully established, continued breastfeeding support following hospital discharge is critical to ensuring high breastfeeding rates. There is varied support provided by birthing hospital for breastfeeding mothers following discharge from hospital and for a proportion of mothers, lack of access to breastfeeding support in the period between discharge and initial contact with the Child Health Nurse may result in cessation of breastfeeding.

Delayed introduction of infant formula: The introduction of formula feeds decreases the frequency of breastfeeding and increases the risk of early breastfeeding cessation. CAHS community health services data indicates that almost one-third of infants are introduced to formula within a week of birth, suggesting that a more concerted effort may be required during the antenatal and early postnatal period to increase awareness around the risks of early introduction of formula amongst parents and health professionals providing antenatal/perinatal care.

Targeted early intervention for at risk children and families: A recent Australian Institute of Health and Welfare investigation reported a significant increase in overweight and obesity amongst children and adolescents in 2014-15 compared with their counterparts 20 years previously.[12] CAHS community health services captures comprehensive information on birth history, family circumstances and clinical contacts across community health services in CDIS. During 2017 CAHS was able to use information on

perinatal and family risk factors known to be predictive of poor developmental outcomes to model child health nursing workforce allocation on the basis of community risk profile. The information in the CDIS database has enormous potential to be used to identify children and/or communities at risk of overweight and obesity, allowing for targeted early interventions.

Clear referral pathways and targeted interventions for children above a healthy weight range: While CAHS community health services are able to provide brief intervention to support families in making healthier lifestyle choices, there are some families who require more intensive support, but do not meet eligibility criteria for services at PMH. There are alternative referrals such as dietician and GP, however the accessibility and low intensity of these services often make them unsuitable. An intensive support program, Lifestyle Triple P, which aims to improve children's nutritional intake and activity level by increasing parents' skills and confidence to manage children's lifestyle behaviour, was piloted in Western Australia during 2010 and produced very encouraging results, but funding was not available for program expansion.

Other high value preventive interventions

Whilst concerted action is required on childhood obesity, continued effort is required to maintain and improve health outcomes in relation to other high value preventive interventions, including the following:

- **Vaccine preventable illness:** Savings in direct health care costs and in indirect (societal) costs due to immunisation are unequivocal.[13] While there has been a steady improvement in recent years, childhood vaccination rates in Western Australia, particularly in metropolitan Perth, are consistently below vaccination rates in other states and territories. General Practitioners (GPs) are the majority provider of vaccinations, particularly in metropolitan Perth, where they provide an estimated 75-80% of vaccinations. Strategies to improve childhood immunisation coverage must involve significant engagement of GPs.
- **Skin cancer and adolescents**: Melanoma is the most common cancer in young Australians. Whilst the national SunSmart program has proven to be highly cost effective and delivered enormous health gains, despite adequate knowledge of the risks, a significant majority of adolescents do not use adequate sun protection.[14] Approaches that go beyond conventional health promotion strategies are needed to change adolescent behaviours around sun protection.
- **Tobacco use amongst adolescents:** The 2014 Australian Secondary Students' Alcohol and Drug survey reported prevalence of smoking was at its lowest since surveys began in 1984, with an estimated 5.4% of 12-17 year old males and 4.9% of 12-17 year old females identified as current smokers.[15] The myriad population health programs targeting smoking have delivered significant cost savings.[16] As most adults who smoke commence when they are teenagers, preventing tobacco use amongst young people is critical to reducing the prevalence of smoking across the adult population. Again, approaches that go beyond conventional health promotion strategies may be required to deter young people from smoking.

Direction 2: Focus on person-centred services

Key message: As well as better integration of services, person centred care requires genuine partnering with health consumers in planning and delivery of care. Significant structural reforms and attitudinal change by clinicians and health consumers will be required to achieve person-centred services.

It is notable that the Committee uses the term *person-centred care*, rather than the more widely used patient-centred care, reflecting an acknowledgement that persons accessing health services are more than passive recipients of care. However, discussion around this issue in the interim report focuses on realignment of health and other services to provide more integrated care, remaining silent on need for genuine partnership with health consumers in planning, developing and monitoring care to ensure it meets their needs. Whilst the right of health care consumers to be informed is well accepted, further work is needed to ensure it becomes embedded in the healthcare continuum.

The Productivity Commission in its recent investigation of factors affecting Australia's productivity noted that while patient-centred health care has been a policy objective in all Australian jurisdictions since 1995, progress towards *a genuinely integrated patient-centred system has been poor, with significant structural reforms and attitudinal changes by clinicians and patients required.*[17]

Partnering with consumers to improve person-centred care

All CAHS community health services are delivered in accordance with the principles of family-centred practice, whereby the role of health professionals is to support families in identifying and addressing their own concerns and work in partnership with families to address the issues of most concern to them. The simultaneous use of both relational and participatory practices by professionals is what distinguishes the family-centred approach from other approaches to working with families.[18] Staff are encouraged to regularly reflect on their practice using validated tools such as the Family-Centred Practices Scale[19] or the Measures of Processes of Care for Service Providers.[20]

Child Health Nurses also play an important informal 'navigator function', routinely providing information or linking families to other health and social support services, as well as connecting new parents in local areas with one another to encourage the formation of social support networks, thereby reducing social isolation, allowing parents to share their knowledge and skills, and giving children an opportunity to develop social skills.[21]

More recently, Child Development Service achievements in the area of partnering with consumers were recognised through receipt of the *2017 WA Health Award* in the *Engaging with Consumers, Carers and the Community* category. Arising from feedback provided by over 1,000 families as part of the CDS Voice of Consumers Project, CDS embarked on a major service redesign initiative during 2016 and 2017. The reforms have delivered significant improvements in client care through engaging consumers earlier in the client journey, partnering with families to plan services for their child, and providing a range of flexible service delivery options in order to better meet the individual needs of clients.

Partnering with consumers in place based services

Evidence about the importance of integrated working is increasing including the importance of 'place based', child and parent centre based approaches. In its National Framework for Universal Child and Family Services, the Australian Health Ministers' Advisory Council acknowledged that integrated service delivery is increasingly recognised both nationally and internationally as the optimal way of meeting the needs of children and families.

There is also community support for better integration of early childhood services. In a 2012 review of community child health services by the Telethon Kids Institute, parents indicated that services could be improved if child health services were 'part of 'one stop shops' in metropolitan locations where parents and their children can access a range of other health and social support services.'

Opportunities to build on existing strengths

Improving service integration through co-location of community based services

CAHS community child and adolescent health services in the Perth metropolitan area have a critical role to play in achieving a sustainable health system. Many facilities are at or beyond capacity and do not adequately support the provision of family centred, quality and cost effective services to the community. CAHS has identified that a limiting factor to achieving this is inadequate community health infrastructure.

In 2004, Western Australia began a journey in health reform that emphasised care in the most appropriate setting through better relationships between community-based care and the hospital system. In the intervening period, there has been unprecedented investment in new hospitals and technology. Unlike planning for hospital infrastructure, there has been little strategic planning or investment in community health infrastructure.

Planning and analyses over the last two years has highlighted emerging service gaps, with facilities concentrated in inner metropolitan suburbs and population growth greatest in outer metropolitan regions. Modelling indicates a requirement for up to 12 integrated service hubs within the four major metropolitan growth corridors to maximise access for children and families. Hubs will integrate child and school health services, immunisation, specialist Child Development Service, and community-based Tier 3 and Tier 4 specialist CAMHS services.

Direction 4: Facilitate effective interaction between acute and community-based mental health services to deliver mental health reforms across the WA health system

Key message: the greatest improvements in mental health outcomes will be achieved through prevention and early intervention around maternal, child and adolescent mental health.

A focus on mental health of children and young people should be central to any service redesign initiatives aimed at improving mental health outcomes at a population level. Both transient and enduring mental health problems during childhood and/or adolescence can have a significant impact on wellbeing, school attainments, school completion and suicide risk, with potentially devastating impacts for the life course.[22]

The 2011 Australian Burden of Disease study estimated that *Mental and Substance Use Disorders* accounted for 12% of total disease burden, third behind *Cancer* and *Cardiovascular Diseases*. Approximately half of the disease burden due to *Mental and Substance Use Disorders* was attributed to anxiety and depressive disorders.[23]

CAHS community health services plays a pivotal role in health promotion, screening, early identification, health counselling, primary health care and referral for new parents, infants, children and adolescents in relation to mental health and wellbeing.

Maternal, infant and child mental health and wellbeing

Maternal and child mental health has long been an integral component of community child health services: with the Edinburgh Postnatal Depression Scale, (EPDS) being offered to mothers and other caregivers during universal contacts for more than a decade. Maternal and child mental health was identified in the recent review of WA child health services as one of five high impact areas in which Child Health Nurses could have the most significant impact on health, wellbeing and longer term outcomes for children, families and communities. 24

The review highlighted the long term social, emotional and educational risks to children of mothers with mental health issues, including postnatal depression, and recommended the extension of maternal postnatal depression screening to 12 months postpartum and the parallel introduction of universal social and emotional screening of infants and children at specified time points on the universal child health schedule.

From 1 July 2017, all caregivers (mothers, fathers and other primary caregivers) attending scheduled child health checks at 8 weeks, 4 months and 12 months have been offered postnatal depression screening (Edinburgh Postnatal Depression Scale, EPDS) and, where indicated screening for anxiety (Perinatal Anxiety Screening Scale, PASS). Universal screening of social and emotional wellbeing of infants and children (via the Ages and Stages Questionnaire – Social Emotional, ASQ-SE) was concurrently introduced at the 4 month, 12 month and 2 year child health contacts and at additional contacts where indicated.

Enhancements to the CAHS community health service electronic client record system to support the new child health service delivery model included enhanced functionality to capture

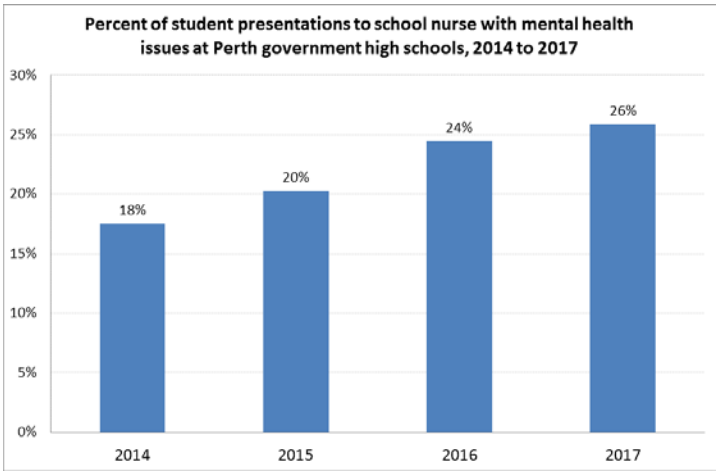
information on the reasons for provision of additional support and/or referral for children and families. A preliminary analysis of data during the first nine months since implementation of the new service delivery model found caregiver mental health to be the most commonly cited reason for caregivers requiring additional support from their Child Health Nurse, accounting for 36% of all child health contacts where a need for additional caregiver support was identified. Caregiver mental health was the third most commonly cited reason for families (either child or caregiver) requiring additional support, accounting for 13% of all contacts where a need for additional family support was identified.

Mental health and wellbeing of school aged children

CAHS community school health services encompass a range of early intervention, health promotion and specialist expertise for school children, adolescents and school communities. These services are offered to all public and private primary schools and public secondary schools. Nurses working in schools, particularly secondary schools, play an important primary health care role in identifying, supporting and referring young people for mental health problems.

Schools play a major role in supporting young people with emotional and behavioural problems and are often where symptoms of mental disorders are first identified.[25]

In the primary school setting, the ASQ-SE is administered at school entry or in older children when a concern has been identified by a parent or teacher. Community Health Nurses in the primary school setting also facilitate assessment and provide primary health care for individual children where a concern has been identified by the parent or teacher and work closely with school communities and families to identify, assess and provide targeted services for children most at risk of poor health and educational outcomes.



Adolescence is the peak period for the onset of psychiatric disorders[26], with up to 50% of lifetime mental health disorders emerging before 14 years of age and 75% before 25 years of age[27]. The second Australian Child and Adolescent Survey of Mental Health and Wellbeing found that almost one in seven 4-17 years olds were assessed as having a mental disorder in the previous 12 months.[28]

In the secondary school setting, CAHS community health service activity data mirrors anecdotal evidence from nursing staff around the increasing role for school health nurses in primary mental health care, with the proportion of mental health related student presentations to school health nurses increasing progressively in the four years to 2017 and now accounting for more than one in every four encounters. Around 40% of mental health presentations relate to anxiety/depression or stress/altered mood. In 2017, mental health presentations averaged more than 170 per week across metropolitan public high schools.

Opportunities to build on existing programs and strategies

Colocation of Child and Adolescent Community Health and Child and Adolescent Mental Health Services. Evidence about the importance of integrated working is increasing including the importance of hub and spoke, 'place based', child and parent centre based approaches. Integration of service delivery results in: enhanced access to services; wider choice for consumers; and reduction in the use of inappropriate or unnecessary services and improved health outcomes.

Review of school health services. A review of community school health services across Western Australia commenced in late 2017. The review, which aims to ensure that school health services continue to meet the needs of the community into the future, also presents an opportunity to ensure that services are aligned with the directions of the Sustainable Health Review, particularly in relation to an increased focus on child and adolescent mental health and better integration of school based mental health services with other community and acute sector mental health services.

Direction 6: Develop partnerships for Aboriginal health outcomes

Key message: Improving health outcomes for Aboriginal people will require a multi-sectoral response based on a social determinants of health framework. The greatest improvements in long term health outcomes will be achieved by investing in early childhood.

Whilst better coordination of care between Commonwealth, State and local government agencies and a collaborative approach to funding may deliver more effective and accessible health services for Aboriginal people, the focus must be on preventing continued health inequities through collaboration between health and other sectors aimed at addressing the social determinants of health. There is broad recognition that on average, Aboriginal Australians continue to experience higher levels of social disadvantage than non-Aboriginal Australians and that unfavourable social circumstances continue to predispose Aboriginal people to poor health outcomes.

Central to 'Closing the Gap' is the recognition that good health is not determined solely by the presence or absence of pathogens and the failure of bodily functions (that is, clinical illness); it is more holistic and is also closely associated with the social and behavioural determinants of health, as well as the performance of health systems.[29]

The 2016 Census of Population and Housing provides a stark reminder of the continuing gap in social circumstances for Aboriginal people:

- Aboriginal people were more than twice as likely as non-Aboriginal people to live in overcrowded housing (10% compared to 3.5%)
- Aboriginal people were seven times as likely as non-Aboriginal people to be homeless (361 per 10,0000 compared to 50 per 10,0000) on census night.
- Fewer Aboriginal people aged 20-24 had completed Year 12 or equivalent (47% compared to 75%)

- Aboriginal people were half as likely as non-Aboriginal people to live in a household with a weekly income of $1000 or more (20% compared to 41%)
- Aboriginal people aged 15 to 64 years were less likely than non-Aboriginal people to be employed (47% compared with 72%).

Although per capita health expenditure on Aboriginal Australians continues to exceed health expenditure on non-Aboriginal Australians[30], the most recent national survey of Aboriginal Health and Welfare highlighted the continuing gap in health and welfare:

- 42% of Aboriginal people aged 15 and over smoked daily, 2.6 times the rate of their non-Aboriginal counterparts
- 37% of Aboriginal people aged 15 and over were obese, 1.6 times the rate of non-Aboriginal Australians aged 15 years and over
- 30% of Aboriginal adults were assessed as having high or very high levels of psychological distress, 2.7 times the rate of non-Aboriginal adults
- One in four Aboriginal households reported they had run out of food in the previous 12 months and could not afford to buy more. [31]

The significant gap in health and welfare outcomes for Aboriginal people begins before birth:

- Babies born to Aboriginal mothers were more than twice as likely as babies born to non-Aboriginal mothers to be of low birthweight (<2,500 grams) (12.6% and 6.0%, respectively).
- Aboriginal children aged 4 months or under were significantly less likely than all Australian children at that age to be currently receiving breastmilk
- 10.2% of Indigenous children aged 2–14 were obese, 1.6 times the rate of their non-Aboriginal counterparts; and
- Aboriginal children were 7 times more likely than non-Aboriginal children to be the subject of substantiated child protection notifications (38.1 and 5.7 per 1,000 children, respectively).[32]

Opportunities for closing the gap can be maximised by prioritising investment in preventive health before birth and in early childhood.

CAHS Aboriginal Community Child Health Services

CAHS community health services provide a range of services to Aboriginal families during early childhood and school years. In addition to universal child health services, culturally secure Aboriginal Child Health services are offered to families who do not engage with Universal services or who prefer for cultural reasons to receive services targeted toward Aboriginal families. Whilst monitoring social and environmental circumstances is a core component for all community child health services, the Aboriginal Health Team provides a more intensive service (Enhanced Aboriginal Child Health Schedule, EACHS) which provides for more frequent contacts between birth and school entry, as well as a holistic approach to

managing family health and social needs, aimed at assisting the family to improve their social and environmental circumstances. To ensure that transport to child health and other appointments is not a barrier to access, families are offered services in the home and/or transport assistance. Advocacy/liaison with other agencies on behalf of the family is also a core part of AHT services.

The intensity of services provided to Aboriginal families with more complex needs is resource intense. The ratio of clients to health professionals for families receiving services with the Aboriginal Health Team is 16-fold lower than for families accessing Universal child health services, in recognition of the intensive level of support required for families with complex needs.

In addition to targeted, intensive child health services, CAHS community health services have established culturally secure Aboriginal immunisation clinics and more recently commenced a targeted school ear health screening program. The Aboriginal Health Team works closely with community Child and School Health staff to improve coordination of care for Aboriginal families.

Opportunities to build on existing programs and services

Expansion and realignment of targeted services: Approximately one in four Aboriginal families currently access child health services via the , CAHS community health Aboriginal Health Team, with some families failing to engage with child health services (AHT or Universal) and the remainder accessing Universal child health services. Aboriginal families are less likely than non-Aboriginal families to engage with child health services beyond the initial contact. It is not clear whether these families access services elsewhere (e.g. via Aboriginal Medical Services) or whether they not to access any services. Increased investment in a culturally secure, holistic child health service for Aboriginal families would enable the expansion of existing Aboriginal Child Health Services to provide support a greater number of Aboriginal families. Improved information sharing and coordination of care between CAHS and Aboriginal Community Controlled organisations may also lead to improvements in health outcomes for Aboriginal children.

Preventable hospitalisations: Preventable hospital admissions. Epidemiological data on paediatric ED presentations and preventable hospitalisations are readily available. Aboriginal children aged 0-14 years are significantly more likely than non-Aboriginal children to present to hospital emergency departments or be hospitalised for respiratory illnesses; diseases of the ear, nose and throat; and skin diseases, many of which are preventable. Targeted strategies aimed at partnering with families to reduce the social and environmental risks that lead to these preventable conditions, as well as more accessible treatment in the community, are required.

Direction 8: Greater use of technology, data and innovation to support consumers, clinicians and drive change.

Preventive healthcare is fundamental to healthcare transformation and sustainability. Greater use of technology and healthcare data will be a pivotal driver of change, allowing for:

- Proactive healthcare, whereby at-risk individuals are categorised based on known algorithms and targeted preventive action is taken to intervene before the onset of symptoms.
- Predictive healthcare goes a step further, whereby at-risk individuals are not only categorised according to risk, but risk is predicted and intervention occurs even further upstream. Continued learnings from research into the Developmental Origins of Health and Disease, coupled with an integrated health record across the life-course, will be instrumental to this approach.

The development of an integrated health record is broadly recognised as a key element of an integrated system of care. The potential to collect, link, and analyse health data across the life course offers enormous potential to build a vast evidence base from which to drive health improvements through predictive analytics.

Given the complexities around establishing an electronic health record across all health services concurrently, and recognising the importance of early life events on long term health outcomes, there is a clear argument in favour of commencing with an electronic child health record. There are also synergies with national endeavours in this arena, with the Australian Digital Health Agency recently approving seed funding for five initiatives put forward by the National Collaborative Network for Child Health Informatics and the program now moving into design and implementation, with all states and territories actively involved. CAHS is well placed to assume a lead role in this area, having undertaken significant preparatory work toward the development of a whole of CAHS integrated health system.

Within CAHS community health services, the existing electronic client record system (CDIS) provides enormous potential for data capture and analysis of health behaviours and clinical and family/environmental risk profiles, as well as enabling ongoing population surveillance around prevalence of identified health and developmental conditions.

Predicting developmental outcome from perinatal and family circumstancesCAHS community health services has historically modelled child health nursing allocation on the basis of population projections with a weighting for sociodemographic indicators as a predictor of variable needs. During 2017, data captured in CDIS was used to model developmental risk profiles within communities (18 community health regions) based on perinatal and family circumstances. Child Health Nursing workforce was allocated on the basis of community developmental risk profile, ensuring resource allocation on the basis of predicted community need. The use of client level data on demographic and clinical risks will ensure allocation of

resources supports the provision of a more comprehensive service to vulnerable Perth children and families, leading to improved population health outcomes and more equitable access to services.

Opportunities for short term technological improvements

Electronic communication with families. A significant volume of communication with families currently occurs through written correspondence via standard post. Email communication with families offers numerous advantages over traditional mail: it is cost effective, both in terms of transmission cost (free versus $1 per standard item), and in terms of staffing cost (the CDIS electronic client record system supports direct email transmission of communications, which requires less time than printing and posting); and electronic communication is preferred by parents (staff surveys consistently show that the majority of parents prefer email or SMS communication over standard mail). WA Health Information Security Policy prohibits email transmission of patient-identifiable information, instead requiring transmission via secure document transmission systems. These systems are cumbersome for parents (requires registration and login and therefore may create a barrier to service access) and may require separate record management systems. Whilst maintaining client confidentiality is paramount, the inflexibility of the current WA Health Information Security Policy represents a significant impediment to efficient, sustainable, person-centred service delivery and a more flexible approach to electronic communication is urgently required.

Use of online assessment tools. A number of paediatric health and developmental assessment tools are currently available in online format. They are cost effective to administer (zero transmission costs compared to 2 x $1 for standard post) and offer greater convenience for parents (able to be completed by computer or any mobile device and data capture is instantaneous) compared to paper-based tools. Online assessment tools also present an opportunity for universal screening to occur without face to face contact, freeing up resources to focus on families with higher needs. The majority of tools have been developed with integrated cloud-based storage capability, which are not currently approved for use by WA Health, thereby precluding their use. Again, the inflexibility of the current WA Health Information Security Policy represents a significant impediment to sustainable, person-centred service delivery.

Use of Apps. There are many apps available that can support parents, families, young people to make positive changes that aim to improve their health and wellbeing. These will be explored to identify how the health service can best review and utilise suitable apps.

One such app is the HEADSS e-tool (iPad app) a psycho-social wellbeing tool used with adolescents by nurses in secondary school settings. This has had positive research suggesting greater disclosure of sensitive issues when used in conjunction with a follow-up face to face clinician appointment than occur through a face to face contact alone.

Endnotes

1 Productivity Commission, Shifting the Dial: 5 Year Productivity Review, Report No. 84. Canberra, 2017.
2 *Ibid.*
3 Productivity Commission, *Shifting the Dial: 5 Year Productivity Review*, Report No. 84, Canberra, 2017
4 Gluckman PD and Hanson MA, The developmental origins of health and disease: an overview, Cambridge University Press, 2006.
5 Bell, PC and Olivier A, *The Economic Benefits of Investing in Child Health*, The international Bank for Reconstruction and Development, 2003.
6 K Bruce, M Hanson. The development origins, mechanisms, and implications of metabolic syndrome. The Journal of Nutrition. 2010;140(3):648-52.
7 C Victora, et al. Maternal and child undernutrition: consequences for adult health and human capital. The Lancet. 2008;371:340–57.
8 S Daniels. American Heart Association Childhood Obesity Summit. Circulation. 2009;119(15):2114-23.
9 E Chiocca. Advanced Pediatric Assessment. Baltimore: Lippincott Williams & Wilkins; 2011.
10 S Arenz, R Ruckerl, B Koletzko and R von Kries. Breast-feeding and childhood obesity – a systematic review
11 E Emerson. Overweight and obesity in 3- to 5-year-old children with and without developmental delay. Public Health Vol 123:2, pp130-133, 2009
12 Australian Institute of Health and Welfare. Overweight and obesity in Australia: a birth cohort analysis. Cat. no. PHE 215. Canberra: AIHW 2017.
13 Whitney CG, Zhou F, Singleton J, Schuchat A. Benefits from Immunization During the Vaccines for Children Program Era — United States, 1994–2013,Morbidity and Mortality Weekly Report 2014: 63(16): 352-355.
14 Cancer Council, Trends in sun protection behaviours, https://wiki.cancer.org.au/skincancerstats/Trends_in_sun_protection_behaviours, 20/04/18
15 Tobacco Control Taskforce, Australian Secondary school students' use of tobacco in 2014, Cancer Council of Victoria, 2015
16 Tobacco in Australia, Facts & Issues, Economic evaluations of tobacco control interventions. http://www.tobaccoinaustralia.org.au/chapter-17-economics/17-4-economic-evaluations-of-tobacco-control-interventions
17 Productivity Commission, *Shifting the Dial: 5 Year Productivity Review*, Report No. 84, Canberra, 2017
18 CJ Dunst. *Family-Centred Practices: Birth through high school*. The Journal of Special Education.2002; 36: 139-147.
19 CJ Dunst, C Trivette, D Hamby. Technical manual for measuring and evaluating family support program quality and benefits. Asheville, North Carolina: Winterberry Press; 2006.
20 J Woodside *et al*. The Measure of Processes of Care for Service Providers (MPOC-SP). CanChild Centre for Childhood Disability Research, McMaster University; 1998.
21 Telethon Institute for Child Health Research, *Parent Attitudes to Child Health Nursing Services in Western Australia, An interim report on the results of metropolitan area focus group research*, 2012.
22 S Bowman, C McKinstry, P McGorry. Youth mental ill health and secondary school completion in Australia: time to act. Early Interv Psychiatry. 2017;11(4):277-89.
23 Australian Institute of Health and Welfare 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series No 3. BOD 4. Canberra: AIHW
24 K Edmond, The Western Australian Birth To School Entry Universal Health Service Delivery Model. Review of evidence with recommendations for an improved service delivery model, 2015
25 D Lawrence et al (2015). The Mental Health of Children and Adolescents. Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Australian Government, Canberra.
26 JN Giedd, M Keshavan M, T Paus. Why do many psychiatric disorders emerge during adolescence? Nat Rev Neurosci. 2008;9(12):947.
27 RC Kessler, et al. Age of onset of mental disorders: A review of recent literature. Curr Opin Psychiatry. 2007;20(4):359.
28 Australian Institute of Health and Welfare 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series No 3. BOD 4. Canberra: AIHW
29 Australian Institute of Health and Welfare. *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015*. Cat. no. IHW 147. Canberra: AIHW, 2015.
30 Australian Health Ministers' Advisory Council, *Aboriginal and Torres Strait Islander Health Performance Framework 2017 Report*, AHMAC, Canberra, 2017
31 Australian Institute of Health and Welfare. *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015*. Cat. no. IHW 147. Canberra: AIHW, 2015.

[32] Australian Institute of Health and Welfare. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147. Canberra: AIHW, 2015.