

The First 1000 Days

A South Island report for the Hauora Alliance

Appendices

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Appendix 1: What do we know about the first 1000 days in the South Island? Data tables

Wider determinants

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Cultural connections	Te Reo Māori speakers	In 2013 the percentage of Māori who reported they speak Te Reo fairly well in Canterbury was 9.1%, which is similar to the rest of the South Island (9.3%).	Te Kupenga 2013 Stats NZ http://archive.stats.govt.nz/browse_for_stats/people_and_communities/maori/TeKupenga_HOTP13/Data%20Quality.aspx	Available for Canterbury region and aggregated for the rest of South Island.	2013 survey; repeated in 2018.	Minimal difference between age categories across New Zealand. Due to small numbers sampling error is between 30 to 50% for those who reported they spoke Te Reo fairly well.
	Whānau wellbeing	<p>In 2013 74.5% of Canterbury respondents and 72.2% of the rest of the South Island respondents reported their whānau as doing well, 12.6% and 8.8% respectively reported extremely well. Across NZ this was slightly higher for younger age groups.</p> <p>Canterbury respondents reported that getting whānau support was easy (31.7%) or very easy (49.9%) the rest of South Island reported 35.3% and 41.2% respectively.</p> <p>Minimal difference between age categories in New Zealand.</p>				

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Cultural connections	Importance of being engaged in Māori culture	In 2013 32.4% of Canterbury respondents reported they felt it was very/quite important to be engaged in Māori culture. This was 38.1% for the rest of the South Island.	Te Kupenga 2013 Stats NZ	Available for Canterbury region and aggregated for the rest of South Island.	2013 survey; repeated in 2018	Minimal difference between age categories across New Zealand.
	Connected to ancestral marae as tūrangawaewae	In 2013 53.6% of respondents in Canterbury and 61% in the rest of the South Island reported they were strongly or very strongly connected to their ancestral marae as tūrangawaewae. In New Zealand this percentage is slightly higher for older Māori.	Te Kupenga 2013 Stats NZ	Available for Canterbury region and aggregated for the rest of South Island.	2013 survey; repeated in 2018	Interpretation/validity of this question may vary by region.
Adult wellbeing	Percentage of people that reported their life was worthwhile, reporting between 7 and 10 out of 10 (10 being the highest) on scale of life being worthwhile	In 2016 87.6% of respondents in Canterbury, 88.6% in the rest of the South Island reported their life was between 7 and 10 out of 10 on a scale of life being worthwhile. This percentage was 88.3, 82.3, 86.8, 86.8 for European, Māori, Pacific people and Asian, respectively.	General Social Survey Stats NZ http://archive.stats.govt.nz/browse_for_stats/people_and_communities/Households/	Data available for Canterbury and rest of South Island. New Zealand data broken down by life stage 15-24, 24-44, 45-64 and 65+ years but not life stage and region	Survey conducted every 2 years. Last data collection took place from April 2016 to April 2017. Published 20 July 2017	Self-reported data. Sample frame 12,000 households, response rate 72%
	Percentage of people that reported that their family was doing well, reporting between 7 and 10 out of 10 (10 being the highest)	In 2016 83.8% in Canterbury and 82.9% in the rest of the South Island reported that their family was doing well, reporting between 7 and 10 out of 10 (10 being the highest) on a scale of how well their family is doing. In New Zealand this percentage was, 82.4, 76.7, 86.3, 85.6 for European, Māori, Pacific people and Asian, respectively.				

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Safety and security	Percentage of people reporting feeling safe when walking alone in the neighbourhood after dark.	In 2016, 60.9% of respondents in Canterbury reported they felt safe when walking alone in the neighbourhood after dark and 69.9% of respondents in the rest of the South Island.	General Social Survey	Data available for Canterbury and rest of South Island.	Survey conducted every 2 years. Last data collection took place from April 2016 to April 2017. Published 20 July 2017.	
Economic security	Percentage of respondents that reported that they did not have enough money to meet everyday needs	The percentage of respondents to the General Social Survey in 2016 that reported that they did not have enough money to meet everyday needs in Canterbury was 8.4%, which is similar to the rest of the South Island, at 8.9%. In New Zealand this percentage was, 8.5, 20.9, 24.2 and 11.3 for European, Māori, Pacific people and Asian, respectively.	General Social Survey	Data available for Canterbury and rest of South Island.	Survey conducted every 2 years. Last data collection took place from April 2016 to April 2017. Published 20 July 2017	Published 20 July 2017 New Zealand data broken down by life stage 15-24, 24-44, 45-64 and 65+ years but not life stage and region.
Housing	Percentage of respondents who reported their house was always or often colder than they would like	In 2016 the percent of respondents who reported their house was always or often colder than they would like it to be was 15.7% in Canterbury and 19% in the rest of the South Island.	General Social Survey	Data available for Canterbury and rest of South Island.	Survey conducted every 2 years. Last data collection took place from April 2016 to April 2017. Published 20 July 2017	Note that a housing quality question was included in the 2018 Census.
	Percentage of people living in crowded households.	Children are over represented in crowded households. People of European ethnicity are less likely to live in a crowded household (4%) compared to Pacific people (38%), Māori (20%), and Asian (18%) people.	The NZ Census 2013 analysis of housing data	Census information	Data collected March 2013, next data due 2018.	

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Family employment occupation	Percentage of adults unemployed	In the 2013 Census the percentage of adults over 15 years who were unemployed (excluding those whose work and labour force status were unidentified) was similarly low across South Island DHBs, ranging from 2.6 – 3.6%.	Stats NZ 2013 Census DHB tables http://archive.stats.govt.nz/Census/2013-census/data-tables/dhb-tables.aspx	2013 Census DHB tables include ethnicity breakdowns.	Data collected March 2013, Next data due 2018.	
Physical activity and environment	The percentage of children (5-14 years) who usually use active transport (walk, bike, skate or similar) to and from school	For 2014-2017 the percentage of children (5-14 years) who usually use active transport (walk, bike, skate or similar) to and from school was highest in Nelson/Marlborough (55% in total, 59.8% for Māori) and lowest in South Canterbury (38.8% in total, 30% for Māori).	New Zealand Health Survey regional data tables	Age-standardised rates used but age unadjusted also available. Data are available for ethnicity and deprivation quintile.	Pooled data for 2014-2017	Self-reported data Children aged 5-14 years. May give an indication of transport patterns for families but limited to the school setting.
Air quality	Monitored sites that exceeded the WHO annual PM10 guideline (of 20 µg/m ³)	In 2013 monitored sites that exceeded the WHO annual guideline included Timaru which had the highest annual PM10 level (26.9µg/m ³), followed by Alexandra (24.9µg/m ³), Christchurch (24.4µg/m ³), Tahunanui in Nelson (21.8 µg/m ³), Invercargill (21.7µg/m ³), and (21.7 Gore µg/m ³).	Environmental Health Indicators http://www.ehinz.ac.nz/indicators/air-quality/particulate-matter/	Data available by air zones or air sheds	Reported yearly. Most recent data available are from 2013.	Particulate matter (PM10) can lead to premature death, and hospitalisations for cardiovascular (heart) and respiratory (lung) disease. Both long-term and short-term exposure to PM10 can affect health.
Water quality	Proportion of people receiving drinking water which met bacteriological and chemical standards	In New Zealand between July 2016 and June 2017 96.2 percent received drinking-water which met bacteriological standards. 97.2 percent received drinking water which met the chemical standards. Chemical standards are important as infants and pregnant women are especially susceptible to the effects of nitrates.	Ministry of Health Annual report on drinking water quality 2016-2017 https://www.health.govt.nz/publication/annual-report-drinking-water-quality-2016-2017	Bacterial, protozoal, chemical standards, implementation of water safety plans and meeting all DWS are available for all registered networked drinking-water supplies.	1 July 2016 to 30 June 2017. Reported yearly.	Only reports on water supplies that serve more than 100 people

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Travel	Most common method of transport used by age.	Children under 5 years old spend most of their travel time as car/van passengers (85%), followed by walking (11%).	New Zealand Household Travel Survey https://www.transport.govt.nz/assets/Uploads/Research/Documents/Household-Travel-Survey-intro-Dec2017.pdf	Data available aggregated for New Zealand. Some data available for main urban areas. Not available by DHB.	Data collected between October 2015 and August 2017. Reported December 2017.	Survey of approx. 1900 households regarding their last 7 days of travel. The 2015-2017 household travel survey uses a different methodology to previous surveys thus results are not comparable.

Preconception

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Neural tube defect	Incidence of neural tube defects	Hospital discharge data are available for birth defects, but not associated with births, or birth rate so not possible to calculate incidence. Need to take into account multiple discharges for the same person.	Hospital event data and stats. https://www.health.govt.nz/nz-health-statistics/data-sets/hospital-event-data-and-stats	Not available by region.		Folic acid supplementation rates may be an indicator of access to maternal care
Reproductive choices	Percentage of pregnancies under the age of 20 years by ethnicity.	In 2015 in New Zealand the percentage of Māori women giving birth under 20 years was 11.5%, Pacific 6.3%, Asian (incl. Indian) 0.7%, European/ Other 2.4%. In 2015, a larger proportion of women giving birth aged under 20 years were from deprivation quintile 5 (most deprived).	National Maternity Collection (MAT) Report on Maternity 2015	Regional data not available. Ethnicity available. Deprivation quintile available.	Yearly. Latest data reported for 2015	Control of reproductive choices are important for health. There is a need to further explore cultural aspects of this indicator (e.g. cultural bias).
Alcohol use in population of reproductive age (15-44 yrs)	Percentage of past-year drinkers (had alcoholic drink in the past 12 months) in population of reproductive age	From the New Zealand Health Survey in 2016-2017 the percentage of 15-24 year olds that reported they have had a drink containing alcohol in the past year was 76%. The percentage for 25-44 year olds was 82.4%.	New Zealand Health Survey	Age -standardised data. Data for age groups are not available for all ethnicities (only Māori, Pacific and Asian).	Yearly Reporting data for 2016-2017	Hazardous drinking data are not available for age groups. Preconception parental health is important for fetal and child health.
Smoking in population of reproductive age (15-44 yrs)	Percentage of current smokers in population of reproductive age	In 2016-2017 pooled for 2014-17 the percentage of 15-24 year olds that reported they were current smokers was 16.7%. The percentage for 25-44 year olds was 20.6%. Data are not available for all ethnicities (only Māori, Pacific and Asian).	New Zealand Health Survey	Data are available by DHB but not cross-referenced with age unless requested.	Pooled data for 2014-17.	Current smoker is defined as has smoked more than 100 cigarettes in lifetime and currently smokes at least once a month.

Pregnancy

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Access to antenatal care	Percentage of women giving birth registered with an LMC.	In 2015 Nelson/Marlborough had a slightly lower percentage (87.2%) of women registered with an LMC compared to the other SI DHBs, which all had high percentages (96.4-99.8%) of registrations with an LMC.	National Maternity Collection (MAT) Report on Maternity 2015 https://www.health.govt.nz/publication/report-maternity-2015	DHB of residence, prioritised ethnicity. Aggregated for NZ for age group, ethnic group, deprivation quintile	Yearly. Latest data reported for 2015	Better Public Services target is by 2021, 90% of pregnant women are registered with a LMC in the first trimester.
Access to antenatal care	Percentage of women giving birth registered with an LMC in the first trimester.	The West Coast had the lowest percentage (52.1%) of women registered with an LMC in the first trimester in 2015 compared to other SI DHBs (70.1-76.7%) in 2015. In 2015 groups with the lowest percentage of women registered with an LMC in the first trimester aggregated for NZ were under 20 years old, Pacific ethnicity, and deprivation quintile 5 (most deprived).	National Maternity Collection (MAT) Report on Maternity 2015 https://www.health.govt.nz/publication/report-maternity-2015	Aggregated data at national level for trimester 2, 3 and postnatal.	Yearly. Latest data reported for 2015	Customised datasets or summary reports are available on request, e.g. request TA level data. Some clinical indicator data is available for 2016 but only for women registered with an LMC. It provides time trends for individual DHBs. It is more complicated to compare DHB using clinical indicator data. The denominator used for percentage calculations is usually the total for each variable where the information was recorded and excludes 'Unknown' categories

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Fertility	Birth rate (per 1000 women of reproductive age)	In 2015, birth rates per 1000 women of reproductive age were similar across SI DHBs (60-69 per 1000 women of reproductive age) although, slightly lower in Southern DHB (54.2). Birth rates were higher for Māori and Pacific ethnicities, particularly in South Canterbury.	National Maternity Collection (MAT) Report on Maternity 2015	Can cross-reference DHB with age, ethnicity, NZ dep	Yearly Latest data reported for 2015	Birth rate and total birth numbers may be useful for planning.
Maternal Smoking	The percentage of women identified as smokers at first registration with their primary maternity care provider	In 2015 the percentage of women identified as smokers at first registration with their primary maternity care provider in 2015 was slightly higher in the West Coast (19.1%) and slightly lower in Canterbury (11.6%). In New Zealand the percentage of women identified as smokers at first registration was 36.7% for Māori, 10.3% for Pacific and 8.1% for European or Other.	National Maternity Collection (MAT) Report on Maternity 2015	DHB Aggregated for NZ for age group, ethnic group, deprivation quintile	Yearly Latest data reported - 2015	Smoking data are only available for women registered with a maternity provider. Excludes women giving birth with unknown smoking status.
Smoking cessation during pregnancy)	Percentage of women who were smoking at first registration with their primary maternity care provider and were still smoking at two weeks after birth.	In 2015 South Canterbury had the greatest reduction in the percentage of women who were smoking at first registration and who were still smoking two weeks after birth, with only 53.1% still smoking at two weeks after birth compared to 78.8, 86.4, 82.2 and 76.7 for NMDHB, WCDHB, CDHB, and SDHB respectively.				
Maternal obesity Pregnancy weight	Percentage of women giving birth, by BMI category at first registration with their primary maternity care provider	In 2015 South Canterbury has the lowest percentage of women giving birth, who registered with a BMI between 19 and 24 and the highest percentage of women who had a BMI over 30 when they registered.	National Maternity Collection (MAT) Report on Maternity 2015	DHB of residence Aggregated for NZ for age group, ethnic group, deprivation quintile.	Yearly Latest data reported - 2015	

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Maternal mortality	<p>Maternal mortality ratio</p> <p>Number of maternal deaths during pregnancy or within 42 days of termination of pregnancy</p> <p>Number of maternal suicides</p>	<p>The maternal mortality ratio for the triennium 2014–2016 was 9.42/100,000 births at 20 weeks or beyond.</p> <p>In 2016 there were two maternal deaths in NZ, and five coincidental deaths.</p> <p>Maternal suicide is the leading cause of maternal mortality in New Zealand. Between 2006 and 2016, 16 of the 28 women who died by suicide in pregnancy or within six weeks of pregnancy (57 percent) were Māori.</p>	<p>The Perinatal and Maternal Mortality Review Committee (PMMRC)</p> <p>https://www.hqsc.govt.nz/our-programmes/mrc/pmmrc/</p>	<p>Annually at New Zealand level</p>	<p>Latest report June 2018 reporting data from 2016</p>	<p>Small absolute numbers</p>

Early years (0-2 years)

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Breastfeeding Two weeks	The percentage of babies breastfed exclusively/fully at two weeks after birth	<p>In 2017 rates for fully/exclusive breastfeeding at 2 weeks are fairly similar, ranging from South Canterbury (73%) to West Coast (89%).</p> <p>Rates for 2017 were similar across ethnicity and deprivation quintile although Pacific people and Māori in West Coast DHB had the highest breastfeeding rates of 100% and 94% respectively.</p>	WCTO indicator 4 March 2018	WCTO cross reference DHB with ethnicity and deprivation quintile 5.	WCTO reports 6 monthly However WCTO reports are based on MAT data for the January to June 2017 period	<p>Information for the July-Dec 2017 period are still incomplete in the system. As a result, data for the previous January to June 2017 period are used for this measure, which is different from breastfeeding at 3 months data.</p> <p>Breastfeeding data is only available for babies of women registered with an LMC or DHB primary maternity service.</p> <p>Excludes unknown breastfeeding status.</p> <p>Data also available from National Maternity Collection (MAT) Report on Maternity 2015.</p>
Breastfeeding Three months	The percentage of babies breastfed exclusively/fully at three months after birth	Breastfeeding rates at 3 months in 2017 were similar for all South Island DHBs (57-61%) and slightly lower for Māori and Deprivation quintile 5.	WCTO indicator 6 March 2018	WCTO cross reference DHB with ethnicity and deprivation quintile 5.	WCTO reports 6 monthly Based on WCTO data collated for the July to December 2017 period.	

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Postnatal care	The percentage of newborns who have received their first WCTO core contact before they turn 50 days old.	Nelson Marlborough has the highest percentage (95%) of children born between January and June 2017 who have received their first WCTO core contact by the time they are 50 days old, with Canterbury (85%) and Southern (89%) below the national target of 90%. This was similar or slightly lower for Māori.	WCTO quality improvement framework Indicator 2 Sept 2017 https://nsfl.health.govt.nz/dhb-planning-package/well-child-tamariki-ora-quality-improvement-framework	WCTO cross reference DHB with ethnicity and deprivation quintile 5	Reports generated 6 monthly. Based on WCTO data collated for the January to June 2017 period.	Number of records this reporting period is about 15%-20% fewer than previous periods due to issues with data migration to new IT systems for some providers. Be aware of data quality issues. Infants receive a referral to a WCTO provider by 28 days of age. If the WCTO core contact 1 is made on time, infants are more likely to receive the other core contacts.
	The percentage of newborns who have received all five WCTO core contacts before they turn 1 year old.	Between January 2016 and December 2017 88% of children in West Coast DHB received all WCTO core contacts by one year of age, followed by Nelson Marlborough, Southern, South Canterbury and Canterbury DHBs with 79, 76, 75 and 68% respectively. This percentage was slightly lower for Māori and Pacific.	WCTO quality improvement framework Indicator 3 March 2018 https://nsfl.health.govt.nz/dhb-planning-package/well-child-tamariki-ora-quality-improvement-framework	WCTO cross reference DHB with ethnicity and deprivation quintile 5	WCTO reports are generated 6 monthly Based on WCTO data collated for the January 2016 to December 2017 period. South Island totals available.	By receiving all WCTO core contacts in their first year, infants are more likely to have health and developmental issues identified in a timely way.

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Primary care	Percentage of newborns enrolled with a general practice by three months.	Newborn enrolment with a general practice by three months ranged from 69% in Southern, to 81% in South Canterbury. Enrolment was slightly higher for Māori in Canterbury, Southern and West Coast, and slightly lower in Nelson Marlborough and South Canterbury DHBs.	WCTO indicator 10 Sept 17	DHB cross referenced with ethnicity, but not deprivation quintile 5.	Reports generated 6 monthly. Data based on 2016/17 quarter 4 Ministry of Health newborn enrolment with general practice reporting.	The numerator and denominator come from two separate data sources (PHO register and NIR) without data linking.
Primary care Unmet need	Percentage of children reportedly experienced one or more types of unmet need for primary health care in the past 12 months (0-14 years)	For 2014-2017 unmet need for primary health care reported over the past 12 months for children aged 0- 14 years was highest in West Coast (23% in total, 31.4% for Māori) followed by Nelson/Marlborough (19.8% in total, 22.6% for Māori), Southern (19.2% in total 26.2% for Māori), South Canterbury (18.2% in total 26.4% for Māori) and Canterbury (18.2% in total 22.7% for Māori).	NZ Health Survey	Age-standardised rates used but age unadjusted also available. Data are available for ethnicity and deprivation quintile	Pooled data for 2014-17.	Self-reported Limited by sample size (confidence intervals provided). Unmet need due to cost, transport, or being unable to arrange childcare for other children.
Immunisation Immunisation rates, timeliness, and coverage	Immunisation The percentage of children who turned the milestone age of 24 months and who have completed their age appropriate immunisations by the time they turned the milestone age.	Between 01-Apr-2017 and 31-Mar-2018 the main outlier is for dep 9 and 10 in the West Coast DHB only 48.9% immunised at 24 months, and 53% immunised at 8 months. This picture is largely due to a West Coast community that declines vaccination. This is well below the Ministry of Health health target of “95% of infants aged eight months will have completed their primary course of immunisation on time”. In the WCDHB the ethnicity with the lowest rates is “Other”.	National Immunisation Register (NIR) https://www.health.govt.nz/our-work/preventative-health-wellness/immunisation/immunisation-coverage/national-and-dhb-immunisation-data	DHB Deprivation Ethnicity Age 6, 8, 12, 15, 24 months and 5yrs	3 monthly and yearly reporting available Last reported 11 April 2018	Immunisation of pregnant women stats for Pertussis and Influenza – not available. TA level data may be available on request. Consider also hospitalisation rates for vaccine preventable disease.

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SUDI sudden unexpected death in infancy (SUDI) in those aged <1 year	SUDI rates per 1000 live births.	SUDI rates for 2010-2014 for New Zealand were highest for Māori, Deprivation decile 5 (most deprived), and mothers under the age of 20. Rates were similar between SI DHBs although confidence intervals are wide/ data are imprecise for small DHBs. SUDI rates in NZ in 2014 are lower than in 2000.	Ministry of Health (MOH) Fetal Infant Deaths 2014 https://www.health.govt.nz/publication/fetal-and-infant-deaths-2014	Data are available but not cross referenced for sex, ethnic group, maternal age group, deprivation quintile, gestational age, birthweight and DHB.	2014 data reported in Oct 2017. Data reported yearly. Due to small absolute numbers analysis is of aggregate period 2010–2014. Due to small numbers data will lack precision.	Delay in official mortality stats. Coronial process delays death registrations. Numerator based on Ministry of Health's Mortality Collection (MORT) on 24 July 2017. Denominator: Birth Registration Dataset (live births only).
Infant mortality	Infant mortality rate – Live-born infant dying before the first year of life is completed per 1000 live births.	In New Zealand from 2009-2014, infant mortality was higher for infants from Māori and Pacific ethnicities, mothers under the age of 20 and families in deprivation quintile 5 (most deprived). Confidence intervals are wide (data imprecise) and comparison between DHBs is not meaningful.	Ministry of Health (MOH) Fetal Infant Deaths 2014 https://www.health.govt.nz/publication/fetal-and-infant-deaths-2014	Data are available but not cross referenced for sex, ethnic group, maternal age group, deprivation quintile, gestational age, birthweight and DHB	2014 data reported in Oct 2017. Data reported yearly. Due to small absolute numbers analysis is of aggregate period 2009–2013 and 2014.	Due to small numbers data will lack precision. Delay in official mortality stats. Outcome measure for a range of interacting factors from preconception, pregnancy and wider determinants.

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Premature births	Incidence of liveborn babies born under 37 weeks gestation	The yearly percentage of babies born under 37 weeks for each DHB are small, aggregating the years 2011 - 2015 the percentage babies born under 37 weeks gestation was similar between DHBs.	National Maternity Collection (MAT) Report on Maternity 2015	DHB, NZ aggregated data available for maternal age, baby ethnicity and baby NZ dep.	Yearly Most recent data reported for 2015	
Low birth weight	Percentage of babies born with birthweight of less than 2.5kg at any gestation	The yearly percentage of low birthweight babies for each DHB are small, aggregating the years 2011 - 2015 the percentage babies born with a birthweight of less than 2.5kg at any gestation was similar between DHBs.	National Maternity Collection (MAT) Report on Maternity 2015	DHB NZ aggregated data available for maternal age, baby ethnicity and baby NZ dep.	Yearly Most recent data reported for 2015	
Parental information	All families are provided SUDI prevention information at a WCTO core contact before 50 days of age	In 2017 100% of families were provided with SUDI prevention information at a WCTO core contact before 50 days of age in all SI DHBs except West Coast which was 99%. Coverage was similar across ethnicity and deprivation quintile 5.	WCTO indicator 9 Sept 17	WCTO cross reference DHB with ethnicity and deprivation quintile 5.	Based on WCTO data collated for the January to June 2017 period.	Only includes parents who have a WCTO contact.
Safety	All women are screened for family violence at least three times during baby's first year of life	Percentage of children born between January and June 2016 whose mothers have been checked at least 3 times for family violence before the children turn 1 year old ranged from 59% in Canterbury, 60% in Southern, 66% in West Coast 69% in Nelson/Marlborough to 76% in South Canterbury. This was similar or slightly lower for Māori, Pacific and deprivation quintile 5, particularly for Southern DHB.	WCTO indicator 8 Sept 17	DHB and ethnicity and data are cross referenced.	Based on WCTO data collated for the January 2016 to June 2017 period.	Limited to mothers who have a WCTO contact within the first year of birth. Does not include fathers. Does not include pregnancy. Number of records this reporting period is about 15%-20% fewer than previous periods due to issues with data migration to new IT systems for some providers. Be aware of data quality issues.

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Avoidable hospital admissions	Ambulatory care-sensitive hospitalisations of children aged 29 days to 4 years	In 2017 - 2018 combined ASH rates were highest in Canterbury and West Coast DHBs (6033 and 6031) followed by Southern DHB (5756). In Canterbury DHB ASH rates are higher for Pacific people (11790) compared to Māori (5635) and Other ethnicity (5761). In West Coast DHB, ASH rates are higher for Māori (9070) compared to Other (5166). ASH rates were lowest in Nelson/ Marlborough (3495) and South Canterbury (3633). ASH rates were lower for Māori than Other in Canterbury and South Canterbury.	Nationwide Service Framework Library https://nsfl.health.govt.nz/accountability/performance-and-monitoring/data-quarterly-reports-and-reporting/ambulatory-sensitive which is based on NMDS NZCYES SI report also presents this data for 2012-2016 by DHB and ASH conditions	Data available for all combined total of all ASH conditions by DHB and PHO. Ethnicity data are available for Other and Māori for all SI DHB. Pacific only for Canterbury (due to small numbers)	Reported quarterly Last report – a year of data up to March 2018.	“ASH conditions are a subset of all health conditions that are believed to be relatively amenable to out-of-hospital management. ASH rates are undoubtedly impacted by the quality of primary care services, but also by high quality population health care, and the interfaces between population health, primary/community care, and secondary/hospital care” For children 0-4 years, not specific to first 1000 days. Age-standardised rates not available for 0-4 years. Denominator has changed recently. Population estimates are from Census data now rather than PHO enrolment data. Ministry of Health Better Public Services Result 3: Keeping kids healthy. Data are based on the DHB of domicile population, so all ASH admissions will be captured regardless of which hospital people are admitted to.
Smokefree households	The percentage of babies living in a smokefree home at 6 weeks of age	For July 2017 - Dec 2017 the highest percentage of babies living in a smokefree home was in Canterbury DHB (82.5%), followed by Nelson Marlborough (79.4%), South Canterbury (70.5%), Southern (77.3%), West Coast (65.2%). In New Zealand smokefree rates were higher in deprivation quintile one (least deprived). The ethnicity with the highest rate of smokefree homes was Other 86.7%, followed by Pacific, 63.6%, and Māori 52.8%.	https://nsfl.health.govt.nz/dhb-planning-package/system-level-measures-framework/data-support-system-level-measures/babies	Data are available for DHB, ethnicity, gender and deprivation quintile	Reported 6 monthly Data up to Dec 2017 Report generated July 2018	

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
CYFS notifications Oranga Tamariki (CYFS)	Total children and young people with notifications (including Police family violence referrals)	From June 2016 to June 2017 the total number of children and young people with notifications (including Police family violence referrals) in the Upper South Island was 5692. In Canterbury region 15716, and in Otago/Southland 8010.	Ministry of Social Development Notifications https://www.msdc.govt.nz/about-msdc-and-our-work/publications-resources/statistics/cyf/notifications.html	DHB level data not available, only operational area. Not able to cross-reference age or ethnicity with region.	Reported yearly at end of financial year.	Total notifications are available, but not as a proportion of the population Notifications comprise “reports of concern” and “Police family violence referrals”
Children and young people in care	Children and young people in the custody of the Chief Executive	Between June 2016 and June 2017, there were 148 children in care in the Upper South Island, 570 in Canterbury and 341 in Otago/Southland.	Ministry of Social Development Kids in Care https://www.msdc.govt.nz/about-msdc-and-our-work/publications-resources/statistics/cyf/kids-in-care.html	DHB level data not available. Not able to cross-reference age or ethnicity with region.	Reported yearly at end of financial year.	Data includes children and young people of all ages. There is no denominator provided (number of children living in regions).
Children’s wellbeing, mental health and resilience is supported	The percentage of children that have low behavioural screening questionnaire (SDQ-P) scores. SDQ-P is a screening questionnaire answered by parents on their child’s strengths and difficulties. Low score is an indication that children are happy, confident and developing well.	Between January and June 2017 the percentage of children with low SDQ-P score was similarly high across SI DHBs and ethnicities (95-96%). The percentage of children who have high SDQ-P scores (>=17) and who are referred to a specialist, excluding those that are already under the care of a specialist, was 100% for all SI DHBs and ethnicities except Southern (97% total referrals).	WCTO indicator 17 and 18 Sept 17	DHB cross referenced with ethnicity and deprivation quintile 5.	Based on the B4 School Check data for the January to June 2017 period. Reports generated 6 monthly	Strengths and difficulties questionnaire for 3-14 years. Difficult to assess for under 2 year olds. Many caveats with SDQ-P. SDQ-P is a screening test. Uses normal distribution rather than clinical significance to identify children at risk of difficulties. Questionnaire asks about strengths and difficulties but does not report on strengths. NZ Health Survey also reports SDQ but a smaller sample than B4 School Check data.

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats		
Child weight Child obesity	Percentage of children with a BMI between the 2nd and 91st percentile at their B4 School Check.	The percentage of children with a BMI between the 2nd and 91st percentile at their B4 School Check between July to December 2017, ranging from 88% in South Canterbury and the West Coast to 94% in Nelson Marlborough DHB. This percentage was similar for Māori across South Island DHBs ranging from 88% in the South Canterbury DHB to 93% in the Southern and Nelson Marlborough DHB and slightly lower for Pacific people ranging from 70% in South Canterbury to 86% in Southern DHB.	WCTO indicator 15 March 18	DHB cross referenced with ethnicity and deprivation quintile 5	Based on the B4 School Check data for the January to June 2017 period.			
Nutrition	Percentage that reportedly had fizzy drink at least three times in past week	For 2014-17, children 2-14 years, Nelson/Marlborough (8.7%) had the lowest, and Southern (16.4%) the highest percentage of children aged 2-14 drinking at least three fizzy drinks in the past week.	New Zealand Health Survey https://minhealthnz.shinyapps.io/nz-health-survey-2014-17-regional-	Age-standardised rates used but age unadjusted also available. Data are available for ethnicity and deprivation quintile.	Data pooled over 2014-2017	Self-reported data Children aged 2-14 years Limited by sample size (confidence intervals provided)		
	Percentage of children that reportedly had fast food three or more times in past week	For 2014-2017, children 2-14 years, West Coast (9.3%) had the highest and Nelson/Marlborough had the lowest (2.2%) percentage of children eating fast food three times in the past week. However the confidence interval for West Coast data is very wide (due to small numbers).						
	Percentage of children reportedly given solid food before 4 months	For 2014-2017, the percentage of children given solid food before 4 months was lowest in Nelson/Marlborough (6.7%) and Canterbury (7.2%) and highest in Southern (9.8%), West Coast (10.2%) and South Canterbury (10.4%) DHBs, there were insufficient data to breakdown by ethnicity.						Self-reported data Children aged 4 months -5 years
	Vegetable and fruit intake percentage of children 2-14 years who reportedly ate at least 2-3 servings of vegetables and 2 servings of fruit per day	For 2014-2017, the percentage of children 2-14 years who ate at least 2-3 servings of vegetables and 2 servings of fruit per day was lowest in Nelson Marlborough (54.2%) and highest in South Canterbury DHB (71%).		Age-standardised rates used but age unadjusted also available Data is available for ethnicity and deprivation quintile but difficult to compare easily		Data pooled over 2014-2017	Self-reported data Children aged 2-14 years	

Focus area	Indicator definition, specific details/ measure	Key findings	Data source	Detail available (geographical boundaries and breakdowns)	Data frequency & time period	Issues, comments, caveats
Nutrition	Percent of children that reportedly ate breakfast at home less than 5 days a week.	For 2014-1027, the percentage of children aged 2-14 years who ate breakfast at home less than 5 days in the last week were similar across SI DHBs ranging from South Canterbury (5.4% total, 6% Māori) to West Coast (6.8% total 7.5% Māori), however Canterbury Māori (15.6%) had the highest proportion.	New Zealand Health Survey	Age-standardised rates used but age unadjusted also available. Data are available for ethnicity and deprivation quintile but difficult to compare easily.	Data pooled over 2014-2017.	Self-reported data. Children aged 2-14 years
Oral health Health outcomes	Percentage of children caries free at five years old.	Percentage of children caries free at five years old was similar across SI DHBs and ranged from 60% in Nelson/Marlborough to 70% in Southern in 2016. Percentages were considerably lower for Māori for all SI DHBs 31, 37, 38, 46, 59% for South Canterbury, Nelson/Marlborough, West Coast, Canterbury, Southern DHB. Percentages were also lower for Pacific people for all SI DHBs. Sizeable ethnic inequities evident.	WCTO indicator 12A March 18 https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/oral-health-data-and-stats/age-5-and-year-8-oral-health-data-community-oral-health-service	DHB cross-referenced with ethnicity, not deprivation quintile 5	Based on 2016 calendar year data as provided by DHBs during their 2016/17 Q3 reporting.	Data cross-referencing DHBs with fluoridation status are available for Southern, and Canterbury and will be confounded by deprivation. Fluoridation of drinking-water covers the greatest population in Southern DHB. Southern has the smallest difference in results by ethnicity but the lowest enrolment in dental care for Māori. http://www.drinkingwater.esr.cri.nz/supplies/priority2plantsfordet.asp?detcode=129 Data also available from Ministry of Health, oral health data and stats for 2016.
Oral health Access to dental care	Children aged 0-4 years are enrolled with the Community Oral Health Service.	Canterbury (62%) has much lower enrolment with Community Oral Health Service than other SI DHBs, which have 80, 83, 85, 97% for Southern, Nelson/Marlborough, South Canterbury and West Coast, respectively. Enrolment is slightly lower for Māori at 42% in South Canterbury and 88% West Coast.	WCTO indicator 11 March 2018	DHB cross-referenced with ethnicity not deprivation quintile 5	Based on 2016 calendar year data as provided by DHBs during their 2016/17 Q3 reporting.	Percentage may be greater than 100% because numerators and denominators come from 2 different sources. Numerator sourced from the DHB reporting for the 2016 calendar year. Denominator based on Statistics NZ population projection. Oral health data for 1-14 year olds also available from NZ Health Survey data.

Indicators and focus areas which were investigated but for which suitable data were not readily availableⁱ included:

Wider determinants

- Household crowding – available by DHB on request
- Families' transport use
- Access to green space
- Crime statistics – difficult to assign specifically to first 1000 days
- Supporting people living with disabilities – e.g. accessibility, needs met adequately regarding support services provided, are not well covered in Statistics NZ Disability Survey 2013.
- Persistent poverty – New Zealand does not collect longitudinal income data from households to determine persistent poverty.

Preconception

- Unmet need for contraceptive services – service level and self-reported data required
- Hazardous drinking – available by age and DHB on request.

ⁱ Either not available at all or not available online by DHB boundary.

Pregnancy

- Percentage of women who took folic acid and iodine supplements in pregnancy
- Percentage of women drinking alcohol in pregnancy
- Measures of maternal mental health.

Early years

- Incidence of neural tube defects
- Incidence of fetal alcohol syndrome
- Measure of child wellbeing suitable for under twos, as the SDQ-P is only validated for older children and does not record positive wellbeing
- Measures of positive parental mental health
- Measures of secure attachment and loving family relationships
- Opportunities to learn through play – there are Ministry of Health guidelines on active play for under five year olds, but there are no data specific to the first 1000 days
- Baby friendly services environments, such as hospitals and cafés
- Accessibility of social workers, e.g. full time equivalent social workers per 1,000 children aged 0-17 years or measure unmet need
- Level of qualification, and wages, of early childhood education centre workers.

Appendix 2: What is being done to support the first 1000 days in the South Island?

In order to promote early childhood health and development, and prevent negative short- and long-term outcomes, initiatives that provide services, resources, and support to whānau with young children in the community have been developed. Some examples of community-based initiatives to support young children (up to at least 2 years of age) and their whānau in the South Island are described in the following sections. This list is not exhaustive, and the reach or level of engagement with each initiative is not presented, as it was not readily established for the purpose of this overview. Broader initiatives, not specifically focused on the early years of life, such as income and housing support are also not included.

Wider determinants

Universal health care services

Primary health care

Visits to most general practices and after-hours health care services, and medical prescriptions are free for children until they are 13 years old (1). Visits for those 14 years of age and older usually incur a cost to users. Specific youth- and family-planning-related services are also available in many parts of New Zealand.

Addiction services

Smoking

Quitlineⁱⁱ and Stop Smoking Service Providersⁱⁱⁱ in each region provide specialised smoking cessation support for pregnant women. For example, Te Hā – Waitaha offers a specific smokefree pregnancy service in Canterbury, where intensive smoking cessation support is available for all pregnant women and their whānau, including home visits, telephone follow-up, incentives, and subsidised nicotine replacement therapy.

In addition, other providers in the South Island regions (including Nelson Marlborough, Southern District, and on the West Coast) offer incentives for pregnant women who engage with their services and become smokefree (2). An evaluation of an incentives-based pilot recruiting pregnant Māori and Pacific women from Manurewa suggests higher referral and quit rates in the incentives programme (up to \$450 in vouchers over 12 weeks) than the standard (non-incentivised) smoking cessation services offered previously (3).

ⁱⁱ www.quit.org.nz

ⁱⁱⁱ www.smokefree.org.nz/help-advice/stop-smoking-services

Alcohol and other drugs

DHBs, primary care organisations, and non-governmental organisations provide alcohol and other drug support services across the country.

Service co-ordination and provision

Early Years Service Hubs

Early Years Service Hubs operate in 13 national sites (including Te Puna Oraka – Shirley HUB in Christchurch and The Early Years Hub in Dunedin) and provide whānau with easy access to a range of integrated services focused on children’s needs from pre-birth until school-entry age. The hubs are a central point where whānau can access education, health, and social services for their children. Some of the services offered include pregnancy and parenting education classes, Well Child Tamariki Ora services, cooking and nutrition classes, parenting information, education and support, supported referrals to off-site services, and outreach.

Strengthening Families

Strengthening Families^{iv} provides a way for whānau to get coordinated access to services through cooperation between community organisations, social services, and government agencies. Strengthening Families is available for any whānau in New Zealand when more than one community support organisation or government service is, or could be, required. It is free and voluntary, and involves working out what services and support is needed, and making a plan of action. Eleven New Zealand government agencies are actively involved with Strengthening Families, along with hundreds of community-based services. In South Canterbury, for example, the Strengthening Families coordination service is provided by Family Works.^v

Family Works

Seven Presbyterian Support organisations provide child and whānau services as Family Works^{vi} in multiple centres nationwide (including the South Island). Family Works supports people experiencing challenging times to help them make positive changes in their lives using the strengths and resources they already have. Some examples of Family Works services are: social work support and coordination, counselling and therapy, parenting programmes, children’s programmes, family dispute resolution service, mentoring and support for young people, family violence prevention, restorative justice, community reintegration, and connection to community supports, groups and networks.

Family Support

Family Support – South Canterbury is an independent, community-based family support agency. It works with families under stress or in crisis to enable them to remain intact and capable of functioning independently, or with a small amount of appropriate ongoing support.

iv www.strengtheningfamilies.govt.nz

v <http://pssc.org.nz/family-works/family/strengthening-families-coordination-service>

vi <https://familyworks.org.nz>

Whānau Ora

Whānau Ora^{vii} is an inclusive approach to providing services and opportunities to increase wellbeing to all families in need across New Zealand. Jointly implemented by Te Puni Kōkiri and the Ministries of Social Development and Health, it requires multiple government agencies to work together with whānau to provide them with appropriate services and support. Whānau Ora navigators work with whānau to identify their needs, help develop a plan to address those needs, and broker their access to a range of health and social services. Te Pūtahitanga o Te Waipounamu^{viii} is the Whānau Ora commissioning agency for the South Island.

LinKIDS

LinKIDS is a child health coordination service implemented by the Canterbury DHB to manage newborn enrolments, manage patient flow in and out of the DHB, and provide a support service to link parents with child health services. In the third trimester of pregnancy, LMCs are asked to share the newborn enrolment information with parents, which sees all newborns enrolled in a suite of health services including the universal newborn hearing screening programme, community dental services, National Immunisation Register,^x and Well Child Tamariki Ora initial notification. Families can choose to opt out of any of the services.

Maternity Care Wellbeing and Child Protection multi-agency groups

Maternal Care Wellbeing and Maternal Care Wellbeing and Child Protection (MCWCP) multi-agency groups within DHBs coordinate care for women identified as having additional needs (e.g. around mental health or family violence) during the maternity care period (during pregnancy to six weeks post-partum). The group facilitates the transition between primary and secondary support/care providers, and works collaboratively to engage

support agencies to work with the mother and her whānau in a culturally safe manner. Many of the referrals to the MCWCP multi-agency group are initiated by the Police Family Violence Interagency Response System team.

Education

Teen Parent Units^x provide education (based on the New Zealand NCEA curriculum) to secondary school-age parents. Early childcare centres are provided onsite as well as wrap-around support, and links with health and social services. In the South Island, units include including Nelson Young Parents' School, Karanga Mai Young Parents' College (Christchurch), Kimihia Parents' College (Christchurch), and Murihiku Young Persons' Learning Centre (Invercargill).

Pregnancy

Universal health care services

Maternity care

Maternity care^{xi} from a Lead Maternity Carer (midwife or specialist doctor) is free for New Zealand citizens and permanent residents (1). Lead Maternity Carers are responsible for care throughout pregnancy, labour and birth, and up until the infant is 6 weeks old.

vii www.tpk.govt.nz/en/whakamahia/whanau-ora

viii www.teputahitanga.org/whanau-ora

ix www.health.govt.nz/our-work/preventative-health-wellness/immunisation/national-immunisation-register

x <http://teenparentschoools.org.nz/>

xi www.health.govt.nz/your-health/pregnancy-and-kids/services-and-support-during-pregnancy/maternity-care

Maternal mental health services

DHBs offer maternal mental health services throughout pregnancy and the postpartum period, where necessary.

Pregnancy and parenting education programmes

Pregnancy and parenting education programmes (also called antenatal classes, or childbirth education) provide first-time parents and their support people a range of information, and facilitate discussions, around pregnancy and childbirth. Topics covered often include the maternity system in New Zealand, staying healthy during pregnancy, pregnancy care, labour and birth, postnatal care, breastfeeding, safe sleeping, and early parenting. A variety of these classes are offered by individual DHBs, Plunket,^{xii} and parent/child-focused organisations (e.g. Parents Centre),^{xiii} funded by the Ministry of Health, and private providers.

Early years (0-2 years)

Universal health care services

Well Child Tamariki Ora

Well Child Tamariki Ora^{xiv} is a free service provided by the Ministry of Health for all children from 6 months to 5 years (1). The universal package includes 12 core contacts as well as a general practitioner check at 6 weeks of age, linked to the 6-week immunisations. Well Child Tamariki Ora services aim to help families/whānau improve and protect their children's health. They also serve as a link to targeted and specialist health, education, and social services for children and families/whānau with additional needs.

Immunisations

Children are eligible for publicly-funded vaccinations on the National Immunisations Schedule^{xv} from their family general practice (1).

Community Oral Health Service

Children are entitled to free basic oral health care through the Community Oral Health Service^{xvi} from birth to school Year 8 (1). For children up to 8 years old, dental services are provided through check-ups in purpose-built community dental clinics (some of which are mobile) and schools.

Universal Newborn Hearing Screening Programme

The Universal Newborn Hearing Screening Programme^{xvii} aims to identify newborns with hearing loss early so they can get the help they need as soon as possible to help their language, learning and social development. The core goals are based on international programme measures and are described as '1-3-6' goals:

- babies to be screened by 1 month of age
- audiology assessment completed by 3 months of age, and
- starting appropriate medical and audiological services, and early intervention education services, by 6 months of age.

xii www.plunketppe.org.nz/class-information

xiii www.parentscentre.org.nz/childbirtheducation/default.asp

xiv www.wellchild.org.nz

xv www.health.govt.nz/our-work/preventative-health-wellness/immunisation/new-zealand-immunisation-schedule

xvi www.healthysmiles.org.nz/health-professionals/oral-health-contacts/child-oral-health-services

xvii www.nsu.govt.nz/pregnancy-newborn-screening/universal-newborn-hearing-screening-programme

Through the Universal Newborn Hearing Screening Programme the Ministry of Education provides Advisors on Deaf Children. Advisors work alongside children identified as deaf and hard of hearing and their whānau from birth to school Year 3. They provide advice and guidance on communication and language development, and resources and programmes to support the developmental and educational needs of the child and their whānau.

Postnatal and home-visiting services

Family Start

Family Start^{xviii} is an intensive home-visiting programme that works with whānau to improve their child's health, learning, relationships, family circumstance, environment, and safety. The targeted programme is voluntary, and works with families and whānau who are struggling with challenges that make it more difficult for them to care for their child(ren). Family Start visits can start in the early stages of pregnancy, and may continue until the child is school-aged, if needed. Family Start is provided around New Zealand through Oranga Tamariki (Ministry for Children). A recent evaluation provides evidence of positive outcomes for families taking part in Family Start, including reduced post-neonatal infant mortality, increased family use of some health services, and greater participation in early childhood education (4).

Early Start

Early Start^{xix} is a research-based long-term and intensive home-visiting support service aimed at vulnerable Christchurch families caring for children under 5 years of age. Early Start began in 1995, and uses a planned approach to enable families to develop new skills and practices,

and discover personal strengths and abilities. It also delivers and supports several family-focused programmes and groups, including Listen Love Play (also called Partners in Parenting Education, PIPE),^{xx} Triple P Positive Parenting Program^{xxi} (see later section in this report), Getting Ready For School^{xxii} (home-based programme designed to help caregivers prepare their child for starting school), Te Māhuri Breastfeeding Group (a support group for young parents), and Te Puna Oraka – Shirley HUB (where caregivers can access family services). Early Start has been evaluated using a randomised controlled trial which recruited 443 families who were followed up over a 9-year period. Findings indicate beneficial effects on multiple child health, preschool education, and service use outcomes (5, 6). Early Start is contracted to, and receives funding from, the Ministry of Social Development, Canterbury DHB, and Oranga Tamariki.

New Start

New Start,^{xxiii} run by Family Help Trust, is a home-based support service for families in Christchurch where repeat criminal offending is an issue. A social worker provides individualised support, education, and assistance accessing other services. Evaluations of New Start indicate some positive outcomes in terms of parenting behaviours and measures to increase the health and safety of children in the household (7, 8).

xviii <https://mvcot.govt.nz/working-with-children/programme-and-forums/programmes>

xix www.earlystart.co.nz

xx www.howtoreadyourbaby.org/pipe

xxi www.triplep-parenting.net.nz/nz-uken/triple-p

xxii www.earlystart.co.nz/programmes/getting-ready-for-school

xxiii www.familyhelptrust.org.nz/new-start.html

Family Centres

Plunket operates Family Centres^{xxiv} in some areas of the South Island. Family Centres are staffed by Plunket nurses, community karitane, Plunket kaiāwhina, and volunteers, and offer support and information on different parenting issues, including breastfeeding, infant nutrition, sleeping, child behaviour, and parent/family needs.

Safer Families

Safer Families,^{xxv} also run by Family Help Trust, is a home-based support service for pregnant women and mothers of young children in Christchurch who are exposed to multiple risks (such as violence, addiction, young age, or previous involvement with child welfare services). A social worker provides individualised support, education, and assistance accessing other services.

Postnatal Adjustment Programme

Plunket offers the Postnatal Adjustment Programme^{xxvi} in Canterbury for mothers experiencing distress or depression following their baby's birth. The service includes at-home assessments, follow-up telephone support, and group programmes. Oranga Whakamomori Programme for Māori whānau in the Christchurch urban area is also offered, which uses a kaupapa Māori approach.

Plunket Parent and Infant Relationship Service

Plunket Parent and Infant Relationship Service (PPAIRS)^{xxvii} in Canterbury provides two programmes (Getting to Know You and Circle of Security® Parenting™)^{xxviii} to support parents to communicate with their young child by interpreting their child's cues and behaviour, and respond in an appropriate way to their needs. It is open to all whānau, and caregivers can refer themselves or be referred by other agencies.

Giving People Support

Giving People Support (GPS), operated by Plunket in some parts of New Zealand (such as Timaru), is a home-visiting service for families with children under 5 years that matches trained volunteers with families to provide practical, everyday support. Families set goals that they want to achieve, and the GPS volunteers (under Plunket guidance) help them achieve those goals. Goals could include areas such as budgeting, cooking, computer skills, and learning English.

1000 Days Trust

The 1000 Days Trust provided a postnatal service for families in Southland to support nurturing parent-baby relationships. The model consisted of a referral and assessment process, working with existing social and health service providers. Parents and babies who met certain criteria were eligible for a 5-day stay in the 1000 Days residence, which provided access to a specialist-led residential plan including opportunities for education on parent/baby relationships, feeding and sleeping support, and whānau and self-care. Home visits linking with other community-based agencies were arranged for ongoing support. The support services and residential pilot programme families were wrapped up on 31 May 2017 due to uncertainty over funding. Evaluation has been conducted, main findings here:

www.ihl.co.nz/what-we-do/womens-center/

xxiv www.plunket.org.nz/what-we-do/what-we-offer/family-centres

xxv www.familyhelptrust.org.nz/safer-families.html

xxvi www.plunket.org.nz/plunket/show/plunket-postnatal-adjustment-programme

xxvii www.healthinfo.org.nz/patientinfo/ppairs-pamphlet.pdf

xxviii www.circleofsecurityinternational.com/for-parents

Early Intervention services

Early Intervention^{xxx} teams work with whānau and early childhood educators when they are concerned about the learning and development of a young child. These concerns may involve a child's developmental delay, disability, behaviour and/or communication difficulties. The service can work with children from birth until they start school. Teams work closely with specialists from the Ministry of Health, such as audiologists, physiotherapists, paediatricians, dieticians, and occupational therapists.

Early intervention services are mainly provided by the Ministry of Education, Special Education Learning Support but in some areas there are also other specialist early intervention service providers and local community support providers. Examples of providers contracted by the Ministry of Education to support families of children with disabilities in the South Island include CCS Disability Action,^{xxxi} Conductive Education Canterbury^{xxxii} and the Champion Centre.^{xxxiii} The service can work with children from birth until they start school. Referrals can be made by early childhood education providers, directly by caregivers, or through the Early Intervention Coordination Service.

Mokopuna Ora

Te Pūtahitanga o Te Waipounamu supports several initiatives focused on the 0-5 year age group and their whānau within the Mokopuna Ora fund. Partner organisations include Arowhenua Whanau Services (Te Muka and Invercargill), Kaikaiāwaro Charitable Trust, Nōku Te Ao, Aroha Kit Te Tamariki Trust, and Ārai Te Uru Whare Hauora Ltd.

Breastfeeding support

Breastfeeding support is offered by a variety of providers, including Lead Maternity Carers, Well Child Tamariki Ora, Plunket, and Lactation Consultants

(such as those based in DHBs, PHOs, and private clinics). Some DHBs (such as South Canterbury) have a dedicated Breastfeeding Advisor. There are also mother-to-mother/peer-to-peer support services and groups for breastfeeding women, some examples of which are described below.

La Leche League

La Leche League NZ^{xxxiv} helps mothers to breastfeed through mother-to-mother support, education, information, and encouragement. There are many groups across New Zealand, which hold regular informal discussion meetings for mothers. Meetings are based on the importance of mother-to-mother support and cover a wide range of breastfeeding-related topics including the benefits of breastfeeding, getting breastfeeding off to a good start, overcoming or avoiding challenges, night-time parenting and infant sleep, nutrition and weaning, and how to continue breastfeeding when returning to work.

The Breastfeeding Peer Counsellor Programme^{xxxv} is a La Leche League initiative that builds on community capacity to provide cost-effective breastfeeding peer support. The programme provides women from target populations with training and resources to offer skilled and knowledgeable help to other mothers (their peers). Training courses are held around New Zealand, including the South Island.

xxx www.kidshealth.org.nz/support-your-child-goes-school

xxxi www.ccsdisabilityaction.org.nz/services-and-advocacy/services/early-intervention/

xxxii www.cecanterbury.org/

xxxiii www.championcentre.org.nz/What-We-Do/family-support-team

xxxiv www.lalecheleague.org.nz

xxxv www.pcp.org.nz

Breastfeeding SOS

Breastfeeding Support Otago and Southland (SOS)^{xxxvi} is a free service offering one-to-one support, phone/text/email help, informal group drop-in sessions, and home visits to pregnant and breastfeeding mothers. Trained volunteer Breastfeeding Peer Supporters/Counsellors provide breastfeeding support and information on general breastfeeding, and overcoming common barriers and challenges. Breastfeeding SOS is an initiative set up and maintained by WellSouth Primary Health Network's Health Promotion Team.

Mother4Mother

The Mother4Mother Breastfeeding Peer Support Programme^{xxxvii} provides support for pregnant women and breastfeeding mothers through facilitated group sessions and one-to-one support. The Canterbury-wide service, run by Canterbury PHO, also trains mothers with breastfeeding experience to become Breastfeeding Peer Supporters to support and encourage other breastfeeding mothers.

Breastfeeding Works

Breastfeeding Works mother-to-mother support groups meet around South Canterbury (including Timaru, Waimate, Geraldine/Orari, and Fairlie), and also host a group specifically for young parents up to 24 years of age.

Human Donor Milk Bank

The Canterbury DHB operates a Human Donor Milk Bank^{xxxviii} which receives and pasteurises breast milk from screened donors in the community. Caregivers of infants in the Neonatal Intensive Care Unit are given the option to receive the pasteurised donated breast milk, and provide informed consent if they agree to their child being a recipient.

Parenting programmes

PEPE

Developed by Plunket, PEPE^{xxxix} (Parenting Education Programme) is a national universal programme which consists of a series of five courses, aimed at supporting parents in their parenting role through the different stages of their child's early development from birth to starting school. PEPE courses are designed to build parent confidence, and connect parents with other parents and local support and resources in their area. PEPE is provided through community and volunteer funding, and is supported by the Ministry of Health and KPS Ltd (formerly Karitane Products Society, a trust to support Plunket initiatives). In some areas, a course specifically for fathers (Dads4Dads) is available. This course is designed for fathers of children under 1 year old, facilitated by fathers, and covers key issues that relate to parenting and fatherhood.

Toolbox

The Parenting Place provides Toolbox^{xl} courses for parents, caregivers and grandparents in communities throughout New Zealand. Toolbox includes four developmental stage-related courses designed to support caregivers by giving them practical strategies, support and encouragement. The Early Years course is for caregivers of children up to 6 years old. The courses have fees, however some subsidies are available, and the courses are provided free of charge to all grandparents raising grandchildren, foster carers, whānau caregivers, home for life parents, and adopters.

x xxxvi www.breastfeedingsos.co.nz

xxxvii www.rcpho.org.nz/services/baby-feeding-service/mother-for-mother-peer-support

xxxviii www.cdhb.health.nz/Hospitals-Services/Specialist-Care/Canterbury-Neonatal-Service/Human-Donor-Milk-Bank/Pages/default.aspx

xxxix www.plunket.org.nz/what-we-do/what-we-offer/parenting-education/parenting-education-programme-pepe

xl www.theparentingplace.com/toolbox-parenting-courses

Supporting Parents Alongside Children's Education

SPACE NZ^{xli} Trust partners with organisations nationwide to provide group sessions supporting first-time parents through the first year of their child's development. Topics covered include sleeping and crying, brain development and early experiences, communication and language development, exploration of play, and socialisation. Current partners include faith-based, early childhood, and community organisations. There are SPACE NZ Trust partners in the Nelson, Canterbury, West Coast and Otago areas.

Triple P Positive Parenting Program

Triple P Positive Parenting Program^{xliii} courses are delivered in some parts of New Zealand (in Canterbury for the South Island) by trained providers, and a range of courses is available for families with different needs. Triple P focuses on providing parents with tools and strategies to raise their child in a positive environment, and the confidence and skills to build good relationships with their child and set boundaries and rules.

Parenting Through Separation Programme

The Parenting Through Separation Programme^{xliiii} is a free, 4-hour course for parents, caregivers and whānau that includes practical advice on managing the needs of children following separation. An evaluation of the Parenting Through Separation Programme found that attendance may have helped parents to minimise the impact of separation on their children, contributed to improvements in some self-reported parental behaviours and knowledge, and decreased children's distress and behaviour problems (9).

Parents Centre

The Parents Centre (NZ Inc) have 50 centres nationwide (including several in the South Island), and offer several parenting courses and one-off parenting sessions^{xliiv} on various topics for different stages of development.

These include parenting styles, boundaries and discipline, early parenthood, toilet training, child development, and music and movement.

Language, literacy, play, and social development initiatives

Early Reading Together®

Early Reading Together,^{xliv} delivered by the Biddulph Group, is a programme of workshops for caregivers/whānau of young children (babies to 5 and 6 year olds) to support their children's language and literacy development. It aims to help caregivers/whānau to read to and talk with their young children to build a love of reading and lay a sound language and literacy foundation for children subsequently learning to read themselves. The workshops are led by school teachers and/or early childhood educators. This programme is included by the Ministry of Education in the school- and community-initiated supplementary supports.

Books for Babies

Storytime Foundation^{xlvi} delivers the Books for Babies programme throughout Auckland, Northland, Waikato, Bay of Plenty, Tairāwhiti, Hawkes Bay, Taranaki, and Canterbury. The agency delivers free books and information to the homes of vulnerable children and their whānau through Well Child Tamariki Ora providers, with the aim of enhancing early attachment, build cohesive whānau, and improve social outcomes.

xli www.space.org.nz

xlii www.triplep-parenting.net.nz/nz-uk/en/triple-p

xliiii www.justice.govt.nz/family/care-of-children/parenting-through-separation

xliiv www.parentscentre.org.nz/parenteducation/default.asp

xlv www.readingtogether.net.nz/early-reading-together.html

xlvi <http://storytime.org.nz>

He aha tēnei?

Pāpapa^{xlvii} produce interactive mobile applications in Te Reo Māori, which aim to make a contribution to Te Reo Māori revitalisation. He aha tēnei? (What is this?) is one of these applications, developed for children up to 5 years of age and their caregivers, which offers a self-paced introduction to everyday Te Reo Māori words and pronunciation.

Playgroups

Playgroups are certificated groups that meet on a regular basis to facilitate play and social experiences for children 0-5 years of age (and their caregivers). Playgroups include Puna Kōhungahunga, cultural playgroups, and community language playgroups. There are requirements and standards of education and care that a playgroup must meet in order to be certificated and be eligible to receive Ministry of Education funding and support. Playgroups are run by a variety of community groups and organisations nationwide (e.g. Plunket^{xlviii} in South Canterbury).

Let's Play Southland

Let's Play Southland brings together community champions and leaders to build and develop opportunities for pre-school children (0-5 years old) to learn and develop through quality play experiences. The Let's Play Southland network identified the need to develop low cost whānau-led physical activity programmes and initiatives and provide quality professional development for early childhood education teachers and whānau.

One of the initiatives is He Pī Ka Rere,^{xlix} which has been developed as a kaupapa Māori physical activity and nutrition initiative to nurture tamariki in Kōhanga Reo. It is based on traditional techniques and helps supply tamariki with the abilities, skills, and awareness to lead a lifelong relationship with kori (movement) and kai (nutrition). He Pī Ka Rere wānanga will be offered to the community by Toi Tangata in partnership with Te Runaka o Waihopai and supported by Let's Play Southland in July 2018.

xlvii www.papapa.co.nz

xlviii www.plunket.org.nz/what-we-do/what-we-offer/play-groups

xlix <https://toitangata.co.nz/our-mahi/he-pi-ka-rere/>

Appendix 3: List of reports, resources, and further reading

There are numerous reports, reviews, and policy statements highlighting the importance of the early childhood years for multiple health and social outcomes, and recommending strategies for improvement. A selection of these resources from Aotearoa New Zealand and overseas is listed in this section, along with a brief description of the content, using excerpts from the documents. Reports were obtained from local and international government departments, health and welfare organisations, universities, and general web searches. Specific detail on interventions and outcomes in these summary documents is limited. Reports which focused only on evidence from low-income countries were not included. Reference lists of relevant documents were hand-searched to identify further grey literature. Further bibliographic details and links to electronic copies of the resources can be found in the References section of this report.

Aotearoa New Zealand literature

The best start in life: Achieving effective action on child health and wellbeing (10)

This report from the Public Health Advisory Committee to the Minister of Health identifies options for improving child health and wellbeing (from birth to 6 years). A public health approach is used, which focuses on the prevention of disease, the promotion and protection of health, and populations rather than individuals. This approach recognises that good health is determined by factors wider than just health care delivery, and that

child health and wellbeing include physical, emotional, economic and social wellbeing, and overlap with childhood development.

The report provides an overview of the poor child health status in New Zealand, makes international comparisons indicating New Zealand ranks very unfavourably compared with other OECD countries, and describes the importance of the early years on outcomes in later life. Rather than focusing on specific health issues, it explores the reasons for the an overall lack of progress in improving health outcomes for New Zealand children and makes four recommendations to improve these outcomes: Strengthen leadership to champion child health; Develop an effective whole-of-government approach for children; Establish an integrated approach to service delivery for children; and Monitor child health using an agreed set of indicators.

Improving the transition: Reducing social and psychological morbidity during adolescence (11)

Given that the experiences of infancy and childhood have a major impact on adolescent outcomes, this review from the Office of the Prime Minister's Science Advisory Committee highlights the importance of a life-course perspective to understanding adolescence. Extensive evidence suggests that adverse prenatal, infant, and childhood experiences contribute to a range of poor health and social outcomes in adolescence and adulthood, including crime, substance abuse, and mental health problems.

This report argues that prevention and intervention strategies applied early in life are more effective in altering outcomes and provide more economic returns over the life course than do prevention and intervention (or punitive) strategies applied later. In many instances it can be demonstrated from overseas studies that the financial benefits of early investment are greater than the costs of the interventions themselves, and good early-life interventions can provide even better value for money because of their multiple positive consequences.

Inquiry into improving child health outcomes and preventing child abuse, with a focus on pre-conception until three years of age (12)

The principal focus of this report of the Health Select Committee presented to the New Zealand House of Representatives is on health promotion and disease prevention to improve outcomes from preconception to 3 years of age and beyond. The major recommendations of the inquiry ask the government to put more focus on, and investment into, the preconception period to 3 years of age, and take a proactive, health-promotion, disease-prevention approach (based on scientific evidence) to improve children's outcomes and diminish child abuse. The authors argue that such policy is not only backed by science, equity, and ethics, but also makes sound economic sense. An investment approach will result in more children leading healthy lives and progressing to meaningful jobs. Productivity will be increased and money will be saved.

A long-term aim of the inquiry is that parents should be as healthy as possible prior to conception, so New Zealand's next cohort of children are given the best possible start in their first few years, and can achieve their full potential. For this ideal to become a reality, New Zealand must have best-practice evidence-based policies and services: prior to conception, in reproductive health, education, and nutrition; in maternity and postnatal care, with rigorous on-going follow-up to allow the early detection of

problems in the preschool and school years; in early childhood education, health, housing, and social services. Such an approach requires commitment and accountability at all levels, with leadership from the top. Primary and secondary health services need to be well integrated into the community, and a whole-of-government approach taken to integrate health services with education, housing, social services, and justice. The report highlights that great effort must be made to ensure that Māori and Pacific people have access to services that are culturally centred. The socioeconomic determinants of health (including child poverty), and economic growth directed to benefit all sectors of society, are recognised as important factors.

Opportunities to make a positive impact in the first 1000 days of a child's life (13)

This report from the Centre for Social Impact (a philanthropic organisation that works with grant-makers to support strategic investment in social change initiatives) discusses findings from a literature review about what is effective in addressing vulnerability in the first 1000 days of life. It concludes that the odds of favourable developmental outcomes for babies born into vulnerable families can be increased through planned, evidence-based, and culturally appropriate interventions during infancy and early childhood. This early investment is noted to be extremely cost-effective. There are also a number of broad philosophies that are associated with positive outcomes: Intervene early, using the best available evidence, in the lives of those who are the most vulnerable; Develop innovative learning programmes on 'baby friendly' environments and the importance of the first 1000 days; Use a strengths-based philosophy that is inclusive and culturally responsive at every stage, and that is based and developed in people's own communities; Reward success and excellence; and Focus on initiatives that include both parents and babies.

The Centre for Social Impact has also prepared a strategic review of early years investment (14, 15), and a summary of the ‘ecosystem’ of early years interventions in New Zealand covering a spectrum of services that range from universal services (such as health care and early childhood education), to prevention, early intervention for vulnerable children, high risk mitigation for children with multiple and complex needs, and crisis response for children with acute needs (16).

First 1000 days of life (17)

The New Zealand College of Public Health Medicine states that improving the circumstances in which a child is conceived and raised will result in significant public health gains, reduced inequities in health and social wellbeing, and reduced costs in both health care and society. This policy statement provides a brief summary of the importance of the first 1000 days in a child’s life for child development, health and wellbeing.

The New Zealand College of Public Health Medicine recommends and supports: Investment in evidence-based approaches focused on reducing exposure to key modifiable risk factors for poor child health and wellbeing; Integration of cross-sector activity and legislation regarding the first 1000 days of life; Universal approaches to improving preconception circumstances that integrate reproductive planning and health promotion into women’s primary health care; Strategies to improve equitable access to long-term reversible contraception options; Evidence-based strategies to improve early engagement with antenatal care; and A system to monitor engagement with early childhood services including Well Child Tamariki Ora, immunisation, oral health, early childhood education, and hearing and vision screening.

1000 days to get it right for every child: The effectiveness of public investment in New Zealand children (18)

This report prepared by Infometrics (an organisation that provides economic analysis and consultancy) was commissioned by He Mana tō ia Tamati / Every Child Counts (a coalition of organisations and individuals led by Barnardos, Plunket, Unicef, Save the Children, and Te Kahui Mana Ririki). It notes that effective public investment in the early years of childhood produces measurable improvements in lifetime outcomes for children. Resulting reductions in the demand for remedial government services (for example, education, health, criminal justice) and improvements in labour productivity mean that effective public investment in the early years of childhood represents a sound form of public investment. This report finds that compared to other OECD countries, New Zealand has one of the lowest, and least effective, rates of public investment in children. Further, it provides an estimate of the economic cost of the low public investment rates to poor child outcomes – approximately 3 percent of gross domestic product (≈NZD\$6 billion). This amount represents potentially avoidable expenditure on public health, welfare, remedial education, low productivity, crime, and justice.

The authors state that countries that have lower levels of child deprivation and better child outcomes deliver support to at-risk children without compromising parental employment. An effective public investment portfolio in New Zealand children would involve both increased and more effective spending. The effectiveness of child assistance programmes will be influenced by the interaction of a wide range of government policies and agencies. The authors recommend several New Zealand-specific initiatives that would support the OECD key policy foundations for improving child wellbeing, including setting targets, monitoring the impact of policies, and resourcing programmes for long-term implementation where they are shown to deliver change.

Choose kids: Why investing in children benefits all New Zealanders (19)

This brief report from the Office of the Children's Commissioner reviews the case for strategic investment in young and disadvantaged children, and outlines why all New Zealanders benefit if we invest better in children so they can succeed. It describes how New Zealand needs every single child to thrive in order to support a future of high productivity, innovation, economic growth, and improved social cohesion. Currently there is a significant proportion of children who are not getting what they need to thrive. It also presents the link between improved child development outcomes and how to: address skilled labour shortages in the face of aging population trends, improve productivity and economic growth, and reduce expenditure on the 'costs' of child poverty.

White Paper for vulnerable children (20)

The White Paper for vulnerable children describes how a minority of children in New Zealand are at significant risk of harm because of the environment in which they are being raised and, in some cases, their own complex needs. The concept of vulnerability provides a way of thinking about children that recognises that their needs do not always fit neatly into the service categories of government agencies, and that their wellbeing depends on the actions of their parents, their wider families and whānau, their communities, and government. The factors that make children more or less vulnerable are often multiple and interrelated in complex ways. Addressing those factors requires co-ordinated action across the social sector, with families, communities and government working together.

The White Paper highlights the importance of addressing vulnerability in the early years, sets out what the Government was doing to address the factors that place children at risk of becoming vulnerable, and the major changes to the way in which children at risk of, or experiencing, maltreatment were identified and have their needs responded to.

Solutions to child poverty in New Zealand: Evidence for action (21)

This report was prepared by the Children's Commissioner's Expert Advisory Group on Solutions to Child Poverty, and notes how poverty is a key determinant of health and wellbeing, and an unacceptable number of New Zealand children are living in poverty. The impacts of child poverty include lower educational achievement, worse health outcomes, and social exclusion in the short-term, as well as reduced employment prospects, lower earnings, poorer health, and higher rates of criminal offending in adulthood.

There is overwhelming evidence that the early years of a child's life matter most for their future life course, and investments made during this time generate the greatest marginal benefits. This report includes 78 separate recommendations to address various aspects of child poverty, including investing in pregnancy and early years services to prevent negative child and adult outcomes and their associated costs.

Child poverty and mental health (22)

This literature review was prepared on behalf of the New Zealand Psychological Society (a professional association for psychologists in New Zealand) and Child Poverty Action Group (an independent charity). It discusses the relationship between poverty experienced during childhood and the impact on the mental health of a child, young person, or adult. The evidence provided in the review strongly suggests that the incidence of mental health problems throughout the lifespan could be reduced through addressing the causes of child poverty and associated factors (such as poor nutrition, inadequate housing, and living in poor neighbourhoods), particularly during the early years of a child's life. The review concludes that any mental health strategy for children should sit alongside a comprehensive programme to alleviate poverty. Strategies aimed at addressing child poverty among Māori and Pacific communities

are more likely to be effective if these are well-resourced at an early stage and developed in a genuine partnership with local communities.

The health status of children and young people in New Zealand (23)

The New Zealand Child and Youth Epidemiology Service at the University of Otago publishes national, regional/DHB, Māori, and Pacific reports¹ on a 3-yearly cycle with three basic themes: health determinants, health status, and chronic conditions and disability. The purpose of the reports is to provide the New Zealand health sector with up-to-date data on the health of children and young people, highlight inequities in health outcomes and/or service provision, and contribute to the evidence base for policy development.

The aim of this report is to provide an overview of the health status of children and young people in New Zealand. It also provides lists of local policy documents and evidence-based reviews to assist those working to improve child and youth health to use all of the available evidence when developing programmes and interventions to address child and youth health needs.

The New Zealand Child and Youth Epidemiology Service has recently released a report specifically on the health and wellbeing of children under 5 years of age in the South Island (24).

The determinants of health for children and young people in New Zealand (25)

This report prepared by the New Zealand Child and Youth Epidemiology Service at the University of Otago provides an overview of the underlying determinants of health for children and young people in New Zealand. It also aims to assist those working in the health sector to consider some of the other agencies influencing child and youth health.

The report suggests that an inter-agency approach is necessary as addressing the large burden of avoidable morbidity and mortality experienced by children and young people locally remains a formidable task if attempted in isolation. Two in-depth topics are also presented:

- I. Better health for the new generation:* getting it right from the start, explores the complex ways in which maternal health and wellbeing during pregnancy and even before conception can affect child health. Service and intervention strategies are reviewed, followed by a discussion of the evidence gaps and new approaches in response to a recognition of the challenges involved in supporting healthy development right from the start.
- II. The effectiveness of integrated services (health, educational and social),* explores the effectiveness of integrated services and how such programmes should be delivered to provide optimal benefit for children and their families. The evidence for the effectiveness of integrated service delivery models is discussed and factors that are needed for integrated services to be effective are identified. Consideration is given to how effective integrated services might be implemented in New Zealand.

The report concludes that the implementation of some of the integrated policy responses outlined in the report may result in significant health gains for children and their families. Finally, while addressing the underlying drivers of New Zealand's high child poverty rates remains beyond of the reach of the health sector alone, the authors state that this should not preclude the sector from being involved in ongoing advocacy with the intention of ensuring that every child in New Zealand grows up to reach their full potential.

¹ www.otago.ac.nz/nzcyes/reports-by-category/index.html

International literature

The first thousand days: An evidence paper (26, 27)

This report from the Melbourne-based Centre for Community Child Health examines the influences on the development of children from conception to age 2 years. It examines the process by which genes, experiences and environments interact to influence the development of a child in the first 1000 days, and focuses on health and wellbeing, mental health, social functioning, and cognitive development.

The accompanying policy brief explains the importance of the first 1000 days as the period when child development has the greatest plasticity, although noting this does not mean that later developmental stages are not important. The importance of parental socioeconomic status, family relationships, and environment are highlighted. The brief recommends that policy focuses on empowering individuals and families, providing family services, and cultivating environments that support the first 1000 days. It suggests the following factors are important for child development: Green spaces, safe communities, opportunities to learn through play, nutritious food, toxin-free environments, loving responsive relationships, and secure housing.

The foundations of lifelong health are built in early childhood (28)

This report from the Center on the Developing Child at Harvard University describes how health in the earliest years—beginning with the future mother's health before pregnancy—lays the groundwork for a lifetime of wellbeing. It provides discussion of the health implications of a broad range of policies and programmes in the public and private sectors to enhance the three foundations of child health - stable and responsive relationships,

safe and supportive environments, and sound nutrition. It covers a range of informal family supports, voluntary community efforts, private sector actions, and publicly-funded policies and programmes, and discusses the evidence and implications of each.

Health and early years, children and young people (29)

This report from the Glasgow Centre for Population Health (a partnership between National Health Service (NHS) Greater Glasgow and Clyde, Glasgow City Council, and the University of Glasgow, funded by the Scottish Government) provides a synthesis of the factors that influence the health of babies, children, and young people, and how improving circumstances during this life stage can help improve health and tackle health inequalities. It outlines evidence about the importance of early years and childhood experiences for healthy development and for health and wellbeing throughout the life course. The report outlines evidence about the different 'spheres' of influence impacting on children's health and wellbeing: family and parent environment, learning environment, neighbourhood environment, and socioeconomic context.

Interacting with all of these, and having their own effect, are the services, interventions and approaches undertaken to improve outcomes.

This review explores how the whole of society, as well as effective universal services and targeted interventions, can support and nurture all children during this critical life stage. A number of consistent and important themes emerge from the evidence: Emotional attachment - strong bonds and positive relationships within families, in schools and in neighbourhoods are crucial to children's healthy development and underpin their future development of good relationships and good parenting; Safety - not feeling safe at home, school or in the community can have damaging

long-lasting impacts for children into adulthood; Healing approaches - through changing circumstances, nurturing approaches, and supporting resilience through family support, schools, communities and services; Understanding different circumstances - approaches and service delivery to understand and respond to differences in personal circumstances; and Involvement in decision-making – involving children and young people in decisions affecting their lives within their family environments, schools and neighbourhoods.

Early childhood is critical to health equity (30)

This report, produced by the Robert Johnson Wood Foundation in partnership with the University of California, examines some of the barriers to health equity that begin early in life, and promising strategies for overcoming them. It outlines how poverty and structural racism limit children's and families' options for healthy living conditions and impacts on physical, cognitive, and social emotional development. It describes how early care and education can help reduce inequities, and how improving health equity in early childhood requires reducing poverty in households with children.

Early years, family and education (31)

In this review prepared by the task group on early years, childhood and family for the WHO Regional Office for Europe, interventions, strategies and approaches are identified that policymakers and practitioners in the European region can use in the childhood years to improve and equalise health outcomes throughout the life course. The review found that high-quality perinatal care available to all is the essential bedrock of early years services. Adequate paid parental leave is potentially beneficial to promoting

parents' wellbeing and facilitating attachment, which is essential for infant mental health and breastfeeding. High quality, flexible and affordable early childhood education and care completes the fundamental infrastructure of good early years systems. Given its proven benefits, preschool experience for all children should be available whether parents are working or not. Family support, parenting programmes, and health and wellbeing support based in early years settings are valued additions and help to ensure the widest possible usage of services by priority groups.

Early intervention: The next steps (32)

This report to Her Majesty's Government considers how costly and damaging social problems for individuals can be eliminated or reduced. It examines how this could be done by giving children and parents the right type of evidence-based programmes, especially in the children's earliest years. It covers a range of tried-and-tested policies for the first 3 years of children's lives to give them the essential social and emotional security they need for the rest of their lives. This report describes a range of evidence-based interventions, provides a list of recommendations, and discusses how a move to successful early intervention requires new thinking about the relationship between central government and local providers.

Preconception care to reduce maternal and childhood mortality and morbidity (33, 34)

This report from a World Health Organization meeting to develop a global consensus on preconception care describes promotive, preventive and curative health interventions to reduce maternal and childhood mortality and morbidity.

Improving health and wellbeing outcomes in the early years: Research and practice (35)

This publication from the Institute of Public Health in Ireland and the Centre for Effective Services focuses on the research and practice of improving health and wellbeing outcomes in the early years. It summarises the most important recent policy developments in this area across Ireland, and presents case studies of selected interventions to improve health outcomes. The interventions target the development of healthy behaviours and social and emotional competence in children, positive parenting skills and practices, and support professionals to improve the quality of their work with children and families. They illustrate some of the issues involved and the lessons that can be learned for practice with children in different contexts.

Early years interventions to address health inequalities in London - the economic case (36)

This report prepared by GLA Economics (a unit funded by the Greater London Authority, Transport for London, and the London Development Agency, that provides economic advice and analysis) provides evidence for investment in early years interventions to address health inequalities in London. This report notes that reviews of child and family interventions show the potential to give returns to society that are larger than the resources invested, and considers the cost to society of failing to prevent poor health outcomes. In the most part, public expenditure is directed towards addressing the consequences of poor development early in life, rather than on preventative programmes in the early years. The authors conclude that this is unlikely to be the most efficient use of public sector resources, when the life-long returns on early years interventions are so high.

The report identifies that one of the main barriers to an effective level of early years spending is that benefits accrue to many different stakeholders over a long time period. As a result no single agency has the incentive or

available funding to invest the upfront costs of early years interventions, when they will only receive part of the benefit in the short-term. This report considers the general findings about the value of early years interventions, and presents the evidence (primarily in terms of cost benefit analysis) around the effectiveness of particular early interventions to inform which type of interventions are likely to be the most effective for London.

Early years: Promoting health and wellbeing in under 5s (37)

This quality standard from the UK National Institute for Health and Care Excellence covers services to support the health, and social and emotional wellbeing of children under 5 years, including vulnerable children who may need extra support. It includes health visitor services, childcare and early years education, and early intervention services in children's social care. It describes high-quality care in priority areas for improvement.

Interventions to support parents, their infants and children in the early years (38)

This review published by NHS Health Scotland (a national Health Board) focuses on the effectiveness of public health interventions to support parents, their infants, and children in the early years (pregnancy to 5 years). Evidence summaries are presented related to: Health-led parenting interventions in pregnancy and the early years; Postnatal parental education for optimising infant general health and parent-infant relationships; Interventions for promoting early childhood development for health; Group-based parenting programmes for improving the emotional and behavioural adjustment of children aged 3 and under; Factors relating to risk of children experiencing social and emotional difficulties and cognitive difficulties; and Promoting the social and emotional wellbeing of vulnerable preschool children (0–5 years).

From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families (39)

This report from the Center on the Developing Child at Harvard University describes five key characteristics of policies and programmes consistently associated with positive outcomes for young children and their families that have been identified from the literature: Help adults—parents, teachers, child care staff— to strengthen their skills so they can support the healthy development of the children in their care; Tailor interventions to address sources of significant stress for families, such as homelessness, violence, children’s special needs, or parental depression; Support the health and nutrition of children and mothers before, during, and after pregnancy; Improve the quality of the broader caregiving environment and increase economically disadvantaged families’ access to higher-quality care; and Establish clearly defined goals and implement a curriculum or intervention plan that is designed to achieve those goals. The report notes that these five characteristics can guide continuous improvement in the quality of a wide array of policies and programmes. This report argues that the absence of a science-based ‘research and development platform’ in the early childhood field threatens the future of all children, families, and communities whose challenges are not being addressed adequately by existing policies and programmes. It states that greater impacts will require changes in the way new strategies are designed, tested, evaluated, and scaled.

Closing the gap in a generation: Health equity through action on the social determinants of health (40-42)

These influential documents from the WHO Commission on Social Determinants of Health describe a social gradient in health outcomes, which is associated with the unfair distribution of the social determinants of health.

Early child development is an important foundation for health in later life, but poor beginnings are not insurmountable - policies and programmes to support parents and caregivers can make a difference to child development outcomes. These documents highlight the need for action on the social determinants of health in order to address health inequalities.

Social determinants of mental health (43)

This report on the social determinants of mental health from the WHO describes how mental health is shaped to a great extent by the social, economic, and physical environments in which people live. Taking action to improve the conditions of daily life from before birth, during early childhood, at school age, during family-building and working ages, and at older ages provides opportunities both to improve population mental health and to reduce the risk of those mental disorders that are associated with social inequalities. The report suggests that while comprehensive action across the life course is needed, scientific consensus is considerable that giving every child the best possible start will generate the greatest societal and mental health benefits.

This report highlights effective actions to reduce the risk of mental disorders throughout the life course, at the community and country level, including environmental, structural, and local interventions. Inequalities in early years’ development due to lower socioeconomic conditions are potentially remediable through family and parenting support, maternal care, and child care and education. Wider family and strong communities can also act as buffers and sources of support to ameliorate impact. The authors conclude that action needs to be universal: across the whole of society, and proportionate to need in order to level the social gradient in health outcomes.

The first 1,000 days: Nourishing America's future (44)

This report from 1,000 Days (a non-profit advocacy organisation) describes how good nutrition during pregnancy and the first years of a child's life provides the essential building blocks for brain development, healthy growth, and a strong immune system. In addition, the foundations for lifelong health - including predispositions to obesity and certain chronic diseases - are largely set during the first 1000 days. The authors note that the quality of a child's nutrition is shaped not only by decisions made by parents and caregivers, but also by broader social and economic factors.

This report identifies a set of 10 'wins' that can have a transformative impact on the first 1000 days and the future wellbeing of all babies and toddlers in America: Empower parents and caregivers with early nutrition knowledge of best practices for infant and young child feeding; Educate and train medical and health care professionals, child care workers and others working with expectant mothers, babies and toddlers on the importance of early nutrition and optimal feeding practices; Establish evidence-based dietary guidelines for pregnant women and children under 2 years; Invest in the research, monitoring and surveillance of the nutritional status of pregnant women and children under 2 years; Support healthy pregnancies by ensuring access to high quality preconception and prenatal care, nutrition education, and obesity prevention programmes; Improve support for mothers to breastfeed by creating breastfeeding-friendly communities, workplaces and healthcare facilities; Invest in paid parental leave and family-friendly workplace policies to support parents; Encourage companies to follow the World Health Organization's International Code of Marketing of Breast Milk Substitutes; Strengthen programmes that reach low-income babies, toddlers and their families; Ensure that healthy, nutritious foods are the affordable, available and desired choice for all families.

Report of the Commission on Ending Childhood Obesity (45)

This report from the WHO Commission on Ending Childhood Obesity describes how the prevalence of infant, childhood and adolescent obesity is rising around the world. Obesity can affect a child's immediate health, educational attainment, and quality of life, and children with obesity are likely to remain obese as adults and are at greater risk of chronic illness. The authors note that no single intervention can decrease the prevalence of obesity, and addressing childhood obesity requires consideration of the environmental context and three critical time periods in the life course: preconception and pregnancy; infancy and early childhood; and older childhood and adolescence.

Many of the recommendations to address childhood obesity in this report recognise the importance of the early years of development, including: Focus on appropriate nutrition in guidance and advice for both prospective mothers and fathers before conception and during pregnancy; Promote breast-feeding; Improve the nutrition literacy and skills of parents and caregivers; Increase access to healthy foods in disadvantaged communities; and Engage whole-of-community support for caregivers and child care settings to promote healthy lifestyles for young children.

Appendix 4: Indicator-based reports and products

New Zealand indicator-based reports and products

New Zealand Child and Youth Epidemiology Service (NZCYES)^{li}

This service, initiated by the Paediatric Society of New Zealand and hosted by the University of Otago, provides child and youth health reports to DHBs. They are not specific to the first 1000 days, but these reports are extremely comprehensive and based on a detailed monitoring framework developed in 2006/2007. There is a useful indicator look-up webpage, which lists all the indicators the service monitors and directs readers to the appropriate NZCYES report in which the indicator and data are presented.

Health and wellbeing of under-five year olds in the South Island 2017 (24)

This report presents comprehensive data, gathered from Ministry of Health national data sets for a range of indicators relevant to early years, although not specifically the first 1000 days. It explains the rationale for each indicator and describes factors associated with prevention for some indicators. The indicators focus more on biomedical factors and slightly less on wider determinants of health. Data are presented by DHB for the South Island. Additional data enable detailed analysis of some indicators by ethnicity, NZDep2013 index of deprivation, maternal age, trimester, and trends over time. Note this is a draft report, without an executive summary.

The following indicators are presented:

- Registration for antenatal care
- Maternal smoking and weight
- Preterm births, birthweight, fetal death
- Infant mortality including SUDI (sudden unexplained death of infant)
- Under-five mortality, Child mortality (1–4 years)
- Proportion of children fully immunised at each milestone age
- Ambulatory sensitive hospitalisations of child, in particular hospitalisation for vaccine-preventable diseases and dental caries
- Children with a B4 School Check (B4SC) BMI-for-age value in the obese range
- Proportion of 5-year-olds free from dental caries.

Te Ohonga Ake: The Determinants of Health for Māori Children and Young People in New Zealand (46)

This report provides data for a range of indicators related to wider determinants of health for Māori compared to people of other ethnicities. There are similar NZCYES reports for Pacific children and young people. As with other NZCYES reports, this report provides a rationale and background for the indicators.

^{li} www.otago.ac.nz/nzcyes/indicator_framework/look-up/index.html

The report includes census population profiles to illustrate the distribution of Māori child and youth population births, and the number of Māori births. Many of the child poverty indicators are the same as those used in other NZCYES reports, such as, income poverty, material hardship, and poverty severity and persistence. The report provides macroeconomic indicators such as unemployment, income inequality, and children reliant on benefit recipients. It also presents data on household crowding, children in sole parent households, and early childhood education.

The report also considers Māori medium education, which includes education that enables learning experiences that reflect Māori knowledge, language and cultural values, delivered via Te Reo Māori immersion classes, Ngā Kōhanga Reo early childhood education services, Kura Kaupapa Māori schools and bilingual (English/Te Reo Māori) classes. In addition indicators of educational attendance such as participant and truancy rates are presented, as well as reporting on the Well Child Tamariki Ora indicators and also including smoking, alcohol, mortality, SUDI, hospitalisation, injury and family violence data.

Child Poverty Monitor (47)

The annual Child Poverty Monitor is a partnership project between the Children's Commissioner, the JR McKenzie Trust, and Otago University. The technical report explains in detail the indicators used to assess child poverty in New Zealand and the data used. Time trends are available but data are not provided at DHB level. The Child Poverty Monitor reports on income poverty and material hardship including child-specific factors of material hardship, using data from the New Zealand Household Economic Survey analysed using the New Zealand Ministry of Social Development DEP-17 material deprivation index. DEP-17 is an index of 17 items most New Zealanders consider essential or almost essential. Lacking seven or more

or nine or more items is indicative of material hardship and severe material hardship, respectively. The technical report also uses the 24-item material wellbeing index (MWI) to assess child poverty. Another indicator that is used to describe child poverty is the number of children reliant on a recipient of a benefit, which uses data from the Ministry of Social Development. Housing is an important factor in child poverty and house ownership, affordability, quality and crowding are relevant indicators. This report highlights that certain conditions and child hospitalisations and deaths are more prevalent in children who live in poverty, and stresses the importance of recording and addressing child maltreatment, neglect and assault. Indicators of child poverty included in the Child Poverty Monitor Technical Report:

- 0–17 year olds in households below the 60% income poverty threshold before housing costs
- 0–17 year olds in households experiencing material hardship
- 0–17 year olds in households living below 40% and 50% moving line income poverty thresholds
- 0–17 year olds in households experiencing 9 or more lacks on DEP-17
- 0–17 year olds in households experiencing both income poverty and material hardship
- 0–17 year olds exposed to persistent poverty using 60% gross median threshold (after housing costs)
- 0–11 year olds who were exposed to persistent poverty using 50% gross median threshold
- 0–17 year olds who were reliant on a recipient of a benefit
- Deaths from injuries arising from the assault, neglect, or maltreatment of 0–14 year olds
- Hospitalisations for injuries arising from the assault, neglect, or maltreatment of 0–14 year olds

- Housing tenure
- Households spending more than 30% of their income on housing costs
- Households which required one or more additional bedrooms using the Canadian National Occupancy Standard (CNOS)
- Major problem with damp or mould
- Major problem with heating or keeping house warm in winter
- Put up with feeling cold as a result of being forced to keep costs down to pay for other basics.

Examples of a child-specific material hardship checklist:

- Meal with meat, fish or chicken (or vegetarian equivalent) at least every second day
- Good access at home to a computer and internet for homework
- Unable to pay for school trip or other school event (“a lot”)
- Had to go without music, dance, kapa haka, art, swimming or other special interest lessons (“a lot”)
- Involvement in sport had to be limited (“a lot”)
- Two pairs of shoes in good condition and suitable for daily activities for each child
- Made do with very limited space for children to study or play
- Two sets of warm winter clothes for each child
- A waterproof coat for each child (because of the cost)
- Continue to wear shoes or clothes that are worn out or the wrong size
- A separate bed for each child
- Fresh fruit and vegetables daily.

NZCYES Indicator Handbook (48)

This handbook catalogues the monitoring framework developed in 2006/2007, which subsequent NZCYES reports are based on. Some of the data sources cited may now be out of date. The handbook recommends considering indicators in relation to life stages and groups indicators by Historical Economic and Policy Context, Socioeconomic and Cultural Determinants, Risk and Protective Factors, Individual and Whānau Health and Wellbeing. The historical context is explained in this report but there are no indicators that are specific to historical context. Indicators included in the report are as follows (*starred indicators are suggested top 20 child health indicators for DHBs):

Socioeconomic and cultural determinants

- Cultural identity
 - Enrolments in Kura Kaupapa Māori
- Economic standard of living
 - Restricted socioeconomic resources
 - Children reliant on benefit recipients
 - *Household crowding
 - Young people reliant on benefits
- Education: Knowledge and skills
 - Participation in early childhood education
 - *Educational attainment at school leaving
 - Senior secondary school retention rates
 - Stand-down/suspension/exclusion/expulsion.

Risk and protective factors

- Service provision and utilisation
 - *Primary health care provision and utilisation
- Nutrition, growth and physical activity
 - *Breastfeeding
 - *Overweight and obesity
 - Nutrition
 - Physical activity
- Substance use
 - *Exposure to cigarette smoke in the home
 - Tobacco use in young people
 - Alcohol-related harm.

Individual and whānau health and wellbeing

- *Most frequent admissions and mortality
- Family composition
- *Low birth weight - SGA and preterm birth
- *Infant mortality
- *Immunisation
- Hearing screening
- *Oral health
- Safety
 - *Total and unintentional injuries
 - *Injuries arising from assault
 - CYF notifications
 - Family violence

- Infectious disease
 - *Serious bacterial infections, meningococcal disease, rheumatic fever, Serious skin infections, tuberculosis, gastroenteritis
- Respiratory disease
 - *Lower respiratory morbidity and mortality, bronchiolitis, pertussis, pneumonia, bronchiectasis, asthma
- Chronic conditions
 - *Diabetes and epilepsy, cancer
- Disability
 - *Disability prevalence
 - Congenital anomalies evident at birth
 - Blindness and low vision
 - Permanent hearing loss
- Mental health
 - Callers to telephone counselling services
 - Mental health inpatient admissions
 - *Self harm and suicide
- Sexual and reproductive health
 - *Teenage pregnancy
 - Sexually transmitted infection.

Ministry of Health, Well Child Tamariki Ora Quality Improvement Framework^{lii}

Well Child Tamariki Ora is a free health service that covers from birth to five years. Quality indicators have been used to monitor and encourage quality improvement since 2013. Indicators were reviewed in March 2016 and were reduced in number from 27 to 18. Results are published 6-monthly, although data for some indicators (e.g. households are smokefree at 6 weeks postnatal and infants receive a referral to a Well Child Tamariki Ora (WCTO) provider by 28 days of age) are not yet available.

Data are broken down by DHB, ethnicity, and New Zealand Deprivation Index (NZDep) quintile. The rationale for each indicator has been documented in reports since 2016, but detailed evidence for the rationale for each indicator is not provided. Data source, reporting time frame, national targets where applicable, and caveats regarding the data are also included. Many of the indicators are highly relevant to the first 1000 days. Indicators reported on are listed below:

- Infants receive a referral to a WCTO provider by 28 days of age (provisional results)
- Infants receive WCTO core contact 1 before 50 days of age
- Infants receive all WCTO core contacts in their first year of life
- Infants are exclusively or fully breastfed at two weeks
- Infants are exclusively or fully breastfed at discharge from LMC
- Infants are exclusively or fully breastfed at three months
- Households are smokefree at six weeks postnatal (still in developmental phase)
- All women are screened for family violence at least three times during baby's first year of life

- All families are provided SUDI prevention information at a WCTO core contact before 50 days of age
- Newborns are enrolled with a general practice by three months
- Children aged 0-4 years are enrolled with the Community Oral Health Service
- Average number of decayed missing and filled teeth in five-year-old children with caries are reduced
- Children are fully immunised for age at five years of age
- B4SCs are started before children are 4½ years
- Children are at a healthy weight at four years
- Children with a BMI >98th percentile are referred
- Children's wellbeing and resilience is supported
- Children are referred when there is a concern for underlying mental health problems.

Ministry of Health - Health targets 2017/2018^{liii}

Ministry of Health targets are predominately service focused. Targets with the greatest relevance to the first 1000 days are increased immunisation and supporting smoking cessation.

- Shorter stays in emergency departments
- Improved access to elective surgery
- Faster cancer treatment
- Increased immunisation
 - 95% of 8-months-olds will have their primary course of immunisation (6 weeks, 3 months and 5 months immunisation events) on time.

lii <https://nsfl.health.govt.nz/dhb-planning-package/well-child-tamariki-ora-quality-improvement-framework>

liii www.health.govt.nz/new-zealand-health-system/health-targets

- Better help for smokers to quit
 - 90% of PHO enrolled patients who smoke have been offered help to quit smoking by a health care practitioner in the last 15 months.
 - 90% of pregnant women who identify as smokers upon registration with a DHB-employed midwife or Lead Maternity Carer are offered brief advice and support to quit smoking.
- Raising healthy kids
 - 95% of obese children identified in the B4 School Check programme will be offered a referral to a health professional for clinical assessment and family-based nutrition, activity and lifestyle interventions.

New Zealand Health Survey, child survey (ages 0 to 14 years)^{liv}

The child survey collects self-reported information regarding health behaviours, health conditions, and access to health services.

Comprehensive regional data tables are provided, both at DHB, regional council, and PHU level. Data are available age-standardised and unadjusted and are provided broken down by ethnicity and deprivation quintile. The regional data for the child survey includes:

- Parent-rated health
- Nutrition
- Physical activity
- Body size
- Physical punishment
- Physical health conditions
- Mental health and developmental disorders
- Primary health care use and patient experience
- Unmet need for primary health care

- Oral health
- Emergency department use
- Private health insurance.

Māori Health Profiles by DHB^{lv}

The Māori Health Profiles by DHB produced by the University of Otago, Wellington in 2015 are not specific to the first 1000 days and some of the data included for Canterbury uses combined data from Nelson Marlborough, West Coast and South Canterbury. Data are presented in the domains used in He Korowai Oranga, the Māori Health Strategy - Whānau ora, Waiora, and Mauri ora (healthy families, environments and individuals). The Māori Health Profiles by DHB also use some data from Te Kupenga.

Te Kupenga 2013 - Statistics New Zealand^{lvi}

Statistics New Zealand's first survey on Māori wellbeing followed the 2013 census. Survey questions include the importance of involvement in Māori culture, spirituality and tūrangawaewae. Te Kupenga is being repeated in 2018. Data are available for the Canterbury region and aggregated for the rest of South Island. Potential indicators related to Te Kupenga are:

- Te Reo Māori speakers
- Connections to a marae
- Engagement in modern cultural practices
- Connections with whānau.

liv www.health.govt.nz/publication/regional-results-2011-2014-new-zealand-health-survey

lv www.otago.ac.nz/wellington/departments/publichealth/research/erupomare/research/otago147631.html

lvi http://archive.stats.govt.nz/browse_for_stats/people_and_communities/maori/TeKupenga_HOTP13/Commentary.aspx?_ga=2.23716287.428966595.1525388107-1004879046.1524799490#maj

Vulnerable children and families 2012 (49)

The New Zealand Government used data from the New Zealand General Social Survey 2010 to identify households with at-risk children. Although not specific to the first 1000 days, living in households with these risk factors is likely to affect child development. The following indicators identify households in which children may be at risk:

- Cigarette smoking
- Being a victim of crime/discrimination in the previous 12 months
- Living in a high deprivation area
- Feeling isolated some/most of the time
- Poor physical or mental health
- Low economic standard of living
- More than one housing problem
- Living in an overcrowded house
- Limited access to facilities.

Environmental Health Indicators New Zealand (EHINZ)^{lvii}

The EHINZ are developed by the College of Health, Massey University, Wellington. They provide general information on how environmental issues affect health and overview statistics for New Zealand, for the following topics:

- Air quality
- Drinking water
- Recreational water
- Indoor environment (home heating, household crowding and second-hand smoke)

- UV exposure
- Hazardous substances
- Border health
- Climate change
- Transport.

Growing up in New Zealand^{lviii}

This website contains reports which detail the research findings from Auckland University's ongoing longitudinal study of child development from before birth until young adult. Although participants are from Auckland, it is likely that findings can be generalised, with some caution, within New Zealand.

International indicators-based reports and products

The Health of Canada's Children and Youth: A CICH Profile^{lix}

The Health of Canada's Children and Youth: A CICH Profile is a website that presents a range of instruments that can be used to assess the health and wellbeing of children in Canada. It presents a wide range of data for indicators for child and youth health up to age 24 years. Family and parental data are not cross-referenced with child development outcome data, to allow analysis of child development data by parental and family factors, although data for child development do include child gender and family income sub-analysis.

^{lvii} www.ehinz.ac.nz/indicators/

^{lviii} www.growingup.co.nz/en.html

^{lix} <https://cichprofile.ca/module/8/>

Some of the data presented are routinely-collected data, for example data on early child development are collected by all kindergarten teachers in the second half of the school year in Canada, using a questionnaire called the Early Development Index. Other data are sourced from a study or survey, for example The National Longitudinal Survey of Children and Youth (NLSCY) and Survey of Young Children (SYC) measures of family. Some international comparisons are included. The CICH profile includes the following data sets:

- Demographic
- Income and employment
 - Food insecurity, housing, social support and benefits, adult literacy, parental education
- Family context
 - Maternal health and health behaviours, family violence, child welfare
- Community context
- Green space, education, child care, neighbourhood cohesion, crime
- Births, deaths, hospitalisations, injury, physical activity, mental and physical health outcomes
- Health services
 - Prenatal postnatal care, access to health professionals, immunisations, dental care, screening
- Environmental risk
 - Air quality, toxins, climate change, contact with nature, health impacts of environmental hazards
- Early child development - <https://edi.offordcentre.com/about/what-is-the-edi/>

Public Health Wales Observatory Pregnancy and childhood surveillance tool (2017)^{ix}

An interactive surveillance tool that illustrates the following:

Childhood indicators

- Poverty and homelessness
- Children in need
- Overweight/obesity
- Teenage conceptions and live births
- Decayed, missing and filled teeth
- Emergency admissions for injury
- Social worker provision.

Pregnancy indicators

- Lifestyle in pregnancy
- Low birth weight
- Breastfeeding
- Healthy births
- Caesarean sections
- Initial assessment carried out by 10 weeks of pregnancy
- Mental health care plan in place.

^{ix} www.publichealthwalesobservatory.wales.nhs.uk/pregnancychildhood

Wellbeing indicators across the life cycle (50)

This report from the Sax Institute reviews and rates the useability of potential indicators related to wellbeing throughout the lifecycle. It assess indicators regarding their availability, frequency of use and evidence of reliability to measure wellbeing.

Center for the Study of Child Care Employment^{lxi}

Online index provides data for early childhood employment conditions and policies on a state-by-state basis in order to improve early childhood jobs by US state, including earnings and economic security, early childhood workforce policies for improving training for childcare workers, and family and income support policies across occupations.

International comparisons of health and wellbeing in early childhood (51)

This report considers indicators for the first 1000 days and compares countries. The indicators have a biomedical focus. Indicators include:

- Life expectancy
- Children aged 0–4 years as proportion of population
- Low birth weight (born at <2500 grams)
- Breastfeeding rates – exclusive breastfeeding up to 6 months
- Obesity
- Vaccine uptake
- Income poverty (OECD definition)
- Education to tertiary level

- Employment – children living in workless family
- Stillbirth
- Infant mortality
- Neonatal mortality
- Early childhood mortality (aged 1–4 years)
- Childhood cancer 5-year age-standardised survival
- Congenital heart disease incidence
- Neural tube defects incidence
- Death due to unintentional injury.

lxi <http://cscce.berkeley.edu/interactive-map/>

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