2014

ASH in the 0-4 Age Group in Whanganui

A report commissioned by Hauora a Iwi

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Whakauae Research for Māori Health & Development

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HAUORA A IWI'S COMMISSIONING OF ASH 0-4 YEARS RESEARCH

Hauora a Iwi[1] has known for some time that ASH (Ambulatory Sensitive Hospitalisation) rates for children aged 0-4 years in the Whanganui region are high, particularly for Māori[2]. During 2013, it was decided that more information was needed to help better understand the ASH 0-4 years picture locally and contribute to development of strategies to effect change.

Consequently, late in 2013, Hauora a Iwi took the initiative to ensure their concern with regard to ASH issues was followed up by commissioning research in the area. Whakauae Research for Māori Health and Development[3] was asked to further investigate ASH 0-4 years locally[4] on behalf of Hauora a Iwi. ASH research questions addressed included:

- What is ASH?
- Why are the Whanganui ASH 0-4 years rates so high?
- What is already being done which may help to bring these ASH rates down?
- What else needs to be done?

[1] Hauora a Iwi was established in 2002, by a confederation of six iwi, as the high-level strategic partner to the Whanganui District Health Board (Whanganui District Health Board, 2014).

[2] For example, using Ministry of Health filtered data, ASH in the WDHB region in the Māori 0 – 4 year age group was the highest of those across all DHBs nationally, at 12,174 per 100,000 per year, as at June 2013. This rate was more than twice that of the Board with the lowest rate (Gray, 2013).

[3] Whakauae was established in 2005 by Rangitikei iwi, Ngāti Hauiti.

[4] For both Māori and non-Māori in the 0-4 years age group.

ACKNOWLEDGEMENTS

We thank all participants for their valuable contributions of time and information to this ASH research. The information and insights offered by Whanganui District Health Board analyst, Warren Jackson and Whanganui Regional Health Network analyst, Phil Murphy are also acknowledged and much appreciated.

Finally, we thank Hauora a Iwi members for their commitment to identifying factors contributing to Whanganui 0-4 years rates and the Director Māori Health (Whanganui District Health Board) for supporting that commitment.

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ABBREVIATIONS USED IN THE REPORT

ASH	Ambulatory Sensitive Hospitalisation
ECE	Early Childhood Education
GP	General Practitioner
KI	Key Informant
MoH	Ministry of Health
PHO	Primary Health Organisation
WDHB	Whanganui District Health Board
WIPE	Whanganui Inter-Professional Education
WRHN	Whanganui Regional Health Network

REPORT FORMAT

This report is structured in two distinct sections. The first section (pages 5-25) has been written for a lay audience and is confined to high level findings. Appendices 1 and 2 (pages 26-70) provide more detailed discussion in relation to both study design and findings.

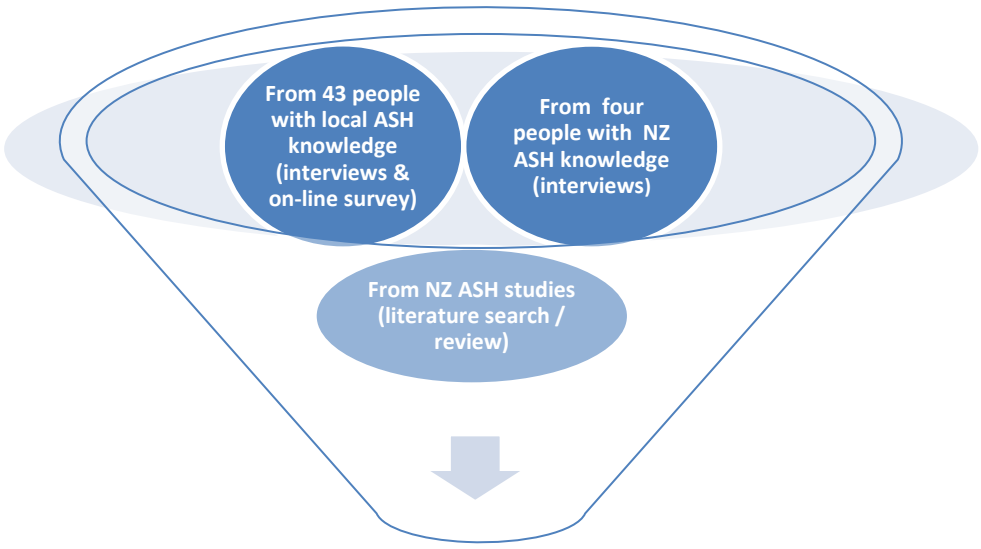
1. BACKGROUND

1.1 HOW THE STUDY WAS CARRIED OUT

To answer Hauora a Iwi's research questions, Whakauae looked at where to best get information about ASH. We spread our net wide and collected information from a number of different places. The idea was that we would get a fuller picture of ASH if we looked beyond one source. We would also be able to see what level of agreement there was, from different sources, around answers to the ASH questions.

Diagram 1 below shows where we got most of the information to answer the questions about ASH and how we went about getting that information (eg through interviews etc).

Diagram 1: Where & how we got ASH 0-4 years information



Most of the people we got ASH information from worked in health services - on the "frontline", as nurses or doctors for example, or in management. We also got information from the Whanganui Regional Health Network's data analyst, from a WDHB analyst, from a health services administrator and from other researchers working on ASH at a national level.

All information (from interviews, an on-line survey, reports and other written material and from the data analysts) was pulled together and reviewed. We used the combined data to help pinpoint the most important things likely to be shaping Whanganui's ASH 0-4 years rates. Our analysis of all this information also showed up some of the things that are already being done in Whanganui which may be helping to bring down ASH rates as well as areas for improvement. A detailed account of how the study was carried out is included here as Appendix 1 Background, Research Design and Methods.

1.3 GAPS IN THE STUDY

This was a small scale study done over a short eight month period. The study design was restricted by the resources we had available to answer Hauora A Iwi's ASH questions. Therefore there are some limitations to the study and to what we have been able to find out. One of the biggest gaps is that the study does not capture the voices of the whānau behind the ASH 0-4 numbers. We did not talk with whānau members about their experiences with their child's health care services in the community or about the things they believed led to their child ending up in hospital. Instead, we relied on hearing something of these stories from children's health care workers. The picture we have drawn of ASH 0-4 years in Whanganui is coloured by what these health care workers and managers have told us about what they see and how they deal with it. That picture would be more detailed if whānau stories were also included.

There are other limitations to the study. For example, looking beyond the views of workers in the health sector alone would help to more fully explain our rates of ASH in the 0-4 years age group. Talking with workers from other sectors across the community including iwi, social services, education services and local government, at all levels, would add another layer of understanding. Finding out more from this wider cross section of workers was however, beyond the scope of the current study. Study limitations are described in more detail in Appendix 1 Background, Research Design and Methods.

2. WHAT IS ASH?

ASH is a quick way of saying "Ambulatory Sensitive Hospitalisation". An Ambulatory Sensitive Hospitalisation (ASH) means a stay in hospital that could have been avoided. A child may end up in hospital when something could have been done earlier, outside hospital, to keep that child well and stop a hospital admission. A health issue a child started out with, such as a cough or cold, may have turned into something more serious like a chest infection and breathing problems.

The term ASH is used in New Zealand to talk about stays in hospital (care at a secondary health level) that probably would not have been needed if the "right" care had been given by someone like a GP or a practice nurse (at a primary health[5] level) in the community. Diagram 2 below shows how a child can end up in hospital when the health issue they had could have been dealt with outside of hospital.

DIAGRAM 2: AN EXAMPLE OF ASH

Child with chronic asthma

Lack of primary health care support

(eg no Asthma Management Plan in place, no Asthma Plan monitoring, no regular prevention and treatment medication, no ongoing relationship with a GP or practice nurse)

Acute asthma

[5] Primary health care is the care we get from GPs, practice nurses, pharmacists and other health professionals working in general medical practices in the community.

As well as the asthma example above, there are many other examples of health conditions that show up in our rates of ASH. They include upper respiratory tract / ear, nose and throat infections, dental conditions and gastroenteritis/ dehydration (vomiting and diarrhoea).

The rates of ASH in a community are often seen as a sign of how well primary health care services are working in that community. From this point of view, ASH rates will probably be low if primary care services are, for example, cheap, easy to get to and well delivered. "Good" primary care means that a child and her whānau will be more likely to get the care and support they need to manage health issues so that they do not turn in to health crises.

In Whanganui though, primary health care services seem to be only one part of explaining the ASH 0-4 years picture. Diagram 3, on the following page, suggests that there are likely to be many things which feed into ASH apart from what happens at a primary health care level. These things are highlighted in red in Diagram 3 overleaf.

DIAGRAM 3: AN EXAMPLE OF ASH – MORE THAN JUST PRIMARY HEALTH CARE

Child with chronic asthma

Poor primary health care support

(eg no Asthma Management Plan in place or monitored, poor access to medication and treatment, no ongoing relationship with a GP or nurse)

Living in a damp, cold house

With a caregiver who:

- Does not know how to best manage their child's asthma

- Does not know when to get help from the GP(the caregiver has low "health literacy")

- is a younger parent who feels anxious and unsure so seeks help from the hospital

- smokes inside the house and / or car

Acute asthma

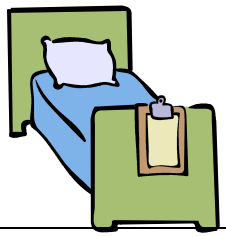


Diagram 3 highlights that things in this child's life could be changed to help keep their asthma under control and keep them well. For example:

- If he had an Asthma Management Plan and an ongoing relationship with his primary care team;

- If his caregiver understood, and followed, his Asthma Management Plan;

- If his caregiver was encouraged to smoke outside or was adequately supported to quit smoking;

- If his whānau had the opportunity to live in a dry, warm and well insulated healthy home; and,

- If appropriate parenting support services and programmes were readily available locally to his caregiver/s.

If all these things happened the chances are high that this child would not have shown up in the ASH rates at all.

Key messages about our ASH 0-4 years rates

Over the five year period 2009 - 2013:

- 1,301 children (Māori and non-Māori) showed up in our ASH hospital discharge rates (Jackson, 2014).

- There were however, 1800 ASH hospital discharges altogether. The difference in the number of children discharged and the number of actual discharges is because some children were treated for ASH related conditions more than once during the period 2009 – 2013; a small group of children were treated on multiple occasions. These discharges included children from the Whanganui District Health Board region who, for whatever reason, were treated by secondary services in other district health board regions (Jackson, 2014).

- ASH rates were high for Māori (and non-Māori) in the 0-4 year age group (when compared with other DHBs).

- The top six conditions included in our ASH 0-4 years discharge rates (combined Māori and non-Māori) were, in order, 1) upper respiratory tract / ear, nose and throat infections 2) dental conditions 3) asthma 4) gastroenteritis/ dehydration (diarrhoea and vomiting) 5) respiratory conditions – pneumonia and 6) cellulitis.

- The top three conditions for Māori were also 1) upper respiratory tract /ear, nose and throat infections 2) dental and 3) asthma. For non-Māori the top three conditions were 1) upper respiratory tract /ear, nose and throat infections 2) gastroenteritis/ dehydration (diarrhoea and vomiting) and 3) dental.

- Some areas within the Whanganui region appear to be over-represented in the ASH discharge rates. These areas are Marton, Raetihi, Castlecliff North and Gonville West (Jackson, 2014).

- The vast majority of ASH 0-4 patients discharged (both Māori and Non Māori) live in NZ Dep areas 8, 9, and 10 (the most deprived deciles).

- Over the last five years the ASH 0-4 discharge rate has dropped significantly for both Māori and non-Māori and the trend is downward (the biggest drop in rates took place in 2010-2011).

- The disparity gap in ASH 0-4 years discharge rates, between Māori and non-Māori, has progressively closed during the period 2009-2013.

- The numbers of repeat ASH related discharges have dropped for both Māori and non-Māori.

- Conditions that can most readily be managed with early intervention and without admission, such as asthma and both upper and lower respiratory infections, are those that have shown the most noticeable reduction in discharges and frequency of admission (multiple admission).

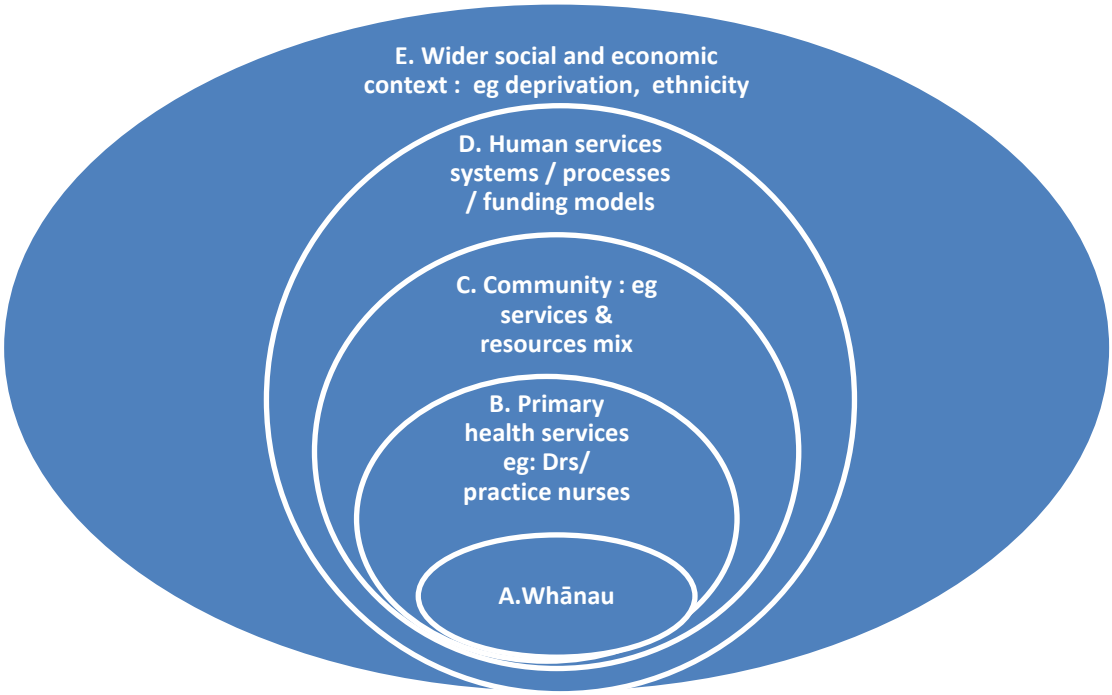
The next section of the report looks at primary care as well as at some of the other things likely to be shaping our ASH rates in Whanganui. ASH contributing factors are also discussed in more detail in Appendix 2: What is ASH and What Drives It?

3. WHAT INFLUENCES OUR ASH 0-4 YEARS RATES?

The study found a high level of agreement around many of the things thought to contribute to our high ASH 0-4 years rates in Whanganui. There was no one single factor however, identified as being the major cause of these high rates. Instead there were many things to take into account and the issues were viewed as complex.

Diagram 4 below represents the main areas of agreement around things contributing to ASH in Whanganui.

Diagram 4: Factors contributing to Whanganui ASH 0-4 years



Each of the main areas of agreement (sections A - E) included in Diagram 4 are outlined below.

A. Whānau

At this level, things thought to contribute to our ASH rates include caregiver lack of knowledge and understanding of how to manage their child's health issues (this is commonly known as lack of health "literacy"). Not knowing, or understanding, enough about how to manage things like a skin infection, vomiting and diarrhoea, coughs and colds or how to stop tooth decay happening can lead to these conditions becoming more serious health problems. These more serious health problems may mean that a child needs to be treated at a hospital.

Lifestyle factors such as poor diet as well as well as tobacco, alcohol and other drug use and family violence can impact on child health and wellbeing. For example, poor diet such as eating a lot of sugary food contributes to health problems like tooth decay. Smoking exposes children to second-hand smoke. Second-hand smoke in turn can make asthma and chest infections worse.

Caregivers dealing with many demands on their ability to cope, little support and few resources might be less likely to do the things they need to do to protect their child's health. They may be more likely to not notice, recognise or have time to deal with, a child's health needs until these become serious and need to be treated in hospital.

B. Primary health (GP / practice nurse) services

At this level, things thought to contribute to our ASH rates include not being able to easily get an appointment with a health worker when needed, regularly dealing with different health workers when going to the doctor instead of the same person or people, not understanding the advice given by health workers and the negative attitudes of reception staff. If whānau owe money at the practice this may make it hard for them to go back for more care as they may feel whakamā or embarrassed. Lack of transport, lack of childcare and limited access to after-hours services may also mean that sometimes health care is not sought until it is too late and hospital treatment is needed.

Services which do not meet the cultural needs of service users, taking into account the things which put them at ease, can also be a problem. Caregivers might just put off going to those services even when they know that their child probably does need to see a nurse or doctor. The end result can again be not getting care until the situation has reached a point where treatment in a hospital is required.

C. Community

The "right" mix of services and resources in the community are thought to contribute to keeping ASH rates down. The make-up of a community shapes the services and resources it needs to be healthy. For example, a community of mostly low income earners and with many young families will be likely to need things like plenty of safe outdoor play areas, frequent and reliable public transport links and a stock of healthy, well insulated houses for rent. It may also need a co-ordinated network of local social services agencies which include those that offer parenting

support and programmes. A community with a high number of Māori may want things like a well-co-ordinated local network of specifically Māori health, social services and education providers offering a full range of services designed and delivered with input from the community.

When communities do not have the "right" mix of services and resources to help keep their members well, it is more likely their ASH rates will be high. The services and resources needed by those communities will be much more than just health services.

D. Human services systems and processes and the ways they are funded

The way health, education, social and related services are structured and funded is seen to have an impact on our ASH rates. The way central government organises and funds its human services at the moment tends to lead to these services working as "stand-alone" organisations – not really "talking to each other". When services operate without close working relationships with other services there seem to be problems. People who need support end up missing out as they "fall between the cracks". Some of these challenges can be overcome, to at least some degree, in communities where services are willing to work together and put their clients first. However, having to work to rigid output focussed contracts can seriously undermine the efforts of services to work as cross-community teams.

At the systems and processes level something else seen to contribute to our ASH rates is lack of information sharing. In the health services, for example, patient information is only sometimes shared between primary (eg GPs, practice nurses) and secondary care (eg care given by a medical specialist and / or in a hospital). If a child goes to the Emergency Department (ED), health workers may only know a child's primary health history based on what they are told by whānau. That health history may or may not be accurate for whatever reason. An unclear primary health history may influence care given at secondary level.

Another factor which may contribute to our high ASH rates is the way that hospital diagnoses are counted and recorded by District Health Boards. A patient's diagnosis is given a code from a national set of codes. Some of these codes are included in the ASH data. It seems that coding though may not always be done in the same way by all DHBs. Differences in coding will contribute to the ASH rates posted for a DHB not really being able to be compared with the ASH rates from another DHB. Trying to do a comparison between DHBs would be like trying to compare apples with oranges instead of comparing apples with apples.

To complicate things further, the way that the Ministry of Health makes sense of the data it gets from DHBs also influences the final ASH rates reported for each DHB. The Ministry uses "filters" to make sense of the ASH data. This means that a picture of ASH is generated coloured by what the Ministry leaves in and what it takes out. In Whanganui's case, when the Ministry's filters (or "exclusions" are used, our ASH 0-4 years rates tend to be the highest in the country. When the filters are taken off, we drop from first place to fifth behind Tarawhiti, Hutt Valley, Bay of Plenty and Lakes DHBs[6].

E. Wider socio-economic context

Poverty and deprivation are big players at this level. Whanganui has more of its people living in areas of higher deprivation compared to most other District Health Board regions. People on low incomes are more likely to live in sub-standard housing which is cold and damp. In the Whanganui region much of the housing stock is older, un-insulated or inadequately insulated. In the colder months, members of a household may live and sleep in only one or two rooms to lower the cost of heating a poorly insulated home. Crowding into fewer rooms to keep warm can lead to illness spreading more easily.

Un-flued, portable gas heaters are commonly used in areas of high deprivation as they are one of the cheapest heat sources. Un-flued gas heaters are understood to contribute to dampness and they lower inside air quality[7]. These kinds of living situations can make many health conditions, including asthma and upper respiratory conditions, worse.

There are many other links between Whanganui's high ASH 0-4 years numbers and deprivation. Dental conditions, for example, are influenced by where and how people live. The large numbers of children we have living in areas of high deprivation contributes to us having so many children with serious dental conditions. In-patient hospital treatment for dental conditions makes up our second to largest group of overall ASH 0-4 years discharges. Ethnicity also appears to have an

[6] The Health Quality and Safety Commission (2013) has developed a modified version of the Ministry of Health ASH data. This version removes the filters and exclusions normally applied to ASH data by the Ministry. According to the Commission, removing the filters helps people to better grasp the idea that ASH is much more than just a primary health issue and is actually a "whole of system" issue.

[7] According to the Ministry of Health (2014), un-flued gas heaters produce pollutants that can harm health as well as producing water vapour that can increase the growth of moulds and dust mites indirectly affecting health. Particularly at risk are children with asthma, and other respiratory problems, and the elderly.

influence on our rate of ASH dental conditions. These make up the second to largest group of ASH condition discharges for Māori and the third largest for non-Māori[8].

Whanganui has had a big push on enrolling pre-schoolers in the dental service for a number of years to try and deal with the extent of poor oral health. Early enrolment in the service contributes to children getting followed up for monitoring and treatment more actively than in some other district health board regions. That follow-up however, may result in children being identified as in need of secondary dental health treatment. Our high rates for ASH 0-4 years due to dental conditions is, in a sense, a measure of the success we have in enrolling most of our children in the dental service and following up on their care. The good thing about this is that dental conditions do get identified and treated. The not so good thing is that so many of our pre-schoolers need such treatment in the first place.

The geography of our region is another contributor to our ASH 0-4 years rates with the population being spread out and many living in rural areas. For example, children from outlying rural areas coming into the Emergency Department at night, especially in winter and when the weather is poor, may be kept in even if concerns about their physical health are less than serious. A child in a similar state of health, but living locally will be much more likely to be sent home. If that child's health deteriorates overnight, it is generally easier for them to come back to the hospital. For a child from a rural area however, coming back quickly is not an option. In these kinds of situations the child is more likely to be kept in overnight.

There are other instances where children are kept in hospital despite their health condition being less than serious; that is for "social" rather than strictly health reasons. Another example of how "social" situations impact on our ASH 0-4 years rates is in relation to young parents; in particular single parents with apparently little family support and living in the most deprived areas in the region. If a parent in this situation also appears to lack confidence in their ability to care for their ill child, that child may be kept in if there is the space to allow this.

Appendix 2 to this report, What is ASH and What Drives It?, looks at what all our information sources had to say about the issues outlined above and how they contribute to ASH 0-4 years rates being high in Whanganui.

[8] Dental is the only ASH condition for which elective admissions to hospital (i.e. planned admissions) are included.

4. UNDERSTANDING THE ISSUES/RESULTS

In this section of the report, the significance of our ASH research findings is explored. The results from our interviews and survey, as well as from other recent New Zealand research, tell us that ASH is a complicated issue that is affected by many things including:

- how ASH data is collected, coded and understood;

- the arrangement and mix of services including things like health, education, and social services; and,

- Lastly but perhaps most importantly, the context of whānau lives (which includes things like employment, how well people did at school, types of housing, and how much money and other resources whānau have access to).

In this section, we summarise research results and make recommendations around interpreting ASH as well as influencing policy to help ensure better outcomes for the Māori and non-Māori 0-4 years population. Key findings are summarised under the following headings; ASH Data, Human Services, and Socio-economic Context.

ASH Quantitative Data

ASH data should be viewed only as an indicator and not as a precise tool which measures the performance of primary care. As policy makers and governors it is useful to keep in mind a number of issues when trying to interpret ASH data. The ASH data is influenced by a number of processes along the way such as:

- Clinicians working out what is wrong with a patient and deciding on a diagnosis;

- Clinical diagnosis information being passed on to coders within the DHB who code it according to a set of coding rules;

- DHB coded data being given to the Ministry of Health to further interpret and filter. The final data or numbers then come back to the DHB to use as an indicator of how well things are going.

At each step of the way people, values and policies of the day influence how ASH data is interpreted. It is important to remember that data is "only data". It is best used as a starting

point in asking a whole lot of other questions. For instance information provided in this report could prompt the following questions:

- Why are our ASH 0-4 years discharge rates trending down?
- What are we doing that might be influencing this?
- Using the NZ Dep and domicile data how might we better target our services and limited resources?
- What are we doing about specific conditions highlighted by the data?
- How should we use ASH data into the future?
- What should get reported to Hauora A Iwi about Whanganui ASH 0-4 years?

There is a lack of shared understanding among doctors, analysts, academics and policy makers about what ASH means; despite this, ASH data is being used to compare Whanganui DHB with other DHBs. This ASH rates comparison should be done very carefully though as the ASH rates are a fairly crude measure. Instead of comparing ASH rates **across** DHBs, we think it is much more useful to **compare** ASH rates **within** services or **within** a DHB region over time.

For instance primary care networks could measure ASH 0-4 years over a period of several years to look at trends and ask questions like "Are the rates changing"? "Who for"? "What are we doing that might have influenced those rates"? The DHB secondary services could also measure ASH rates internally over time to better understand what service delivery arrangements more broadly are influencing ASH rates and for whom.

Human Services

The range of services available and how easy they are to access, how they are working with other services and sectors, how they are funded and what kaupapa drives them all make a difference to our ASH rates.

There is still much to be done to get good cross sector collaboration to bring our ASH rates down. While there are examples of working across health, employment, justice, education and housing this is not "business as usual". To really make an impact on ASH, we have to address the wider social and economic contexts for whānau.

When whānau do want to access services there are a number of barriers including lack of appointments, workforce shortages and poor service coverage. There are too many examples of

competiveness between services, not sharing information that would benefit patients and whānau, services that privilege those already likely to have good outcomes and disadvantaging those most likely to have the poorest outcomes. Funding and contracts are also a problem as they do not tend to encourage integration or innovation and often measure outputs rather than outcomes.

While these are significant challenges for funders, policy makers, managers and service workers on the ground they are not new challenges. As Māori health leaders, we need to look for funding arrangements that shift how we do business now to integrated contracts that provide flexibility to work in innovative ways and an ability to measure real changes in whānau circumstances. At a grass roots service level, the focus needs to be on whānau and patients not on what serves the need of the service best. Personal and institutional values influence how we provide services to those most in need; examining our values and kaupapa are valuable tools for reducing institutional racism. Professional patch protection and service silos need to be discouraged and privacy or lack of IT capacity should not be used as an easy excuse to not share information for the benefit of patients and whānau. Having the right service, in the right place, at the right time is still a useful goal.

Socio-economic context

How people live and under what circumstances has a huge impact on a range of outcomes including health. The influences start early in life and continue through generations unless there are significant interventions. The types of things that contribute to poor health outcomes, in particular those that we see in our tamariki (and result in ASH admissions), are well known but difficult to shift and include housing issues; in particular damp, overcrowded and poorly insulated housing, poverty resulting in a range of access issues and family stress, poor health literacy or the ability to understand and interpret health information, and a range of lifestyle issues such as smoking, drug and alcohol use, and highly processed diets low in healthy nutrients.

It is easy when these issues present to focus our attention on the whānau and try and get change at this level; however, we also need to focus on changing the systems and organisations that contribute to keeping people in a state of disadvantage. For instance helping schools achieve greater pass rates for Māori whānau, insisting on better standards for housing (particularly rental housing), promoting the "livable wage" idea, and addressing tobacco, alcohol and nutrition through a policy approach that pushes for shifts at the retail and manufacturing end rather than the consumer end.

5. WHAT IS ALREADY BEING DONE?

Though Māori continue to be proportionately over-represented in the ASH 0-4 years rates that over-representation appears to be progressively declining as we have already noted above. There are a number of things happening in the Whanganui region which may be helping to keep our ASH 0-4 years rates in check. Some of the things key informants and survey respondents believed were contributing to making a difference are listed below. These include activities at primary health level, activities at secondary health level, cross-health sector activities and wider community activities across sectors which may also include the health sector.

A. Primary health (GP / practice nurse etc) services

- Free visits for under children under the age of six years;
- Free after-hours visits for children under the age of six years through Whanganui Accident and Medical (WAM). It is noted that in most rural areas, after-hours access is limited;
- Home insulation projects run by the Whanganui Regional Health Network or in partnership with the Network;
- The "drop in" acute clinic at Gonville Health which aims to improve access to care;
- Cultural training for frontline staff in a few GP practices;
- The use of a nurse practitioner by at least one GP practice;
- Free 24/7 Health Line telephone information service;
- Oral health initiatives such as "Lift the Lip" (which encourages GPs, Well Child Nurses and other frontline staff to do oral checks as part of their routine contact with children);
- Māori health provider participation in secondary services clinical training sessions around health issues (including health issues related to the prevention of ASH);
- A GP service operated under the Māori health provider (Te Oranganui) umbrella offering primary care choice for both Māori and non- Māori;
- The mobile dental service which helps to make access easier for whānau who have issues with transport.

B. Secondary health (hospital level care)

- Quality paediatric discharge information and follow up advice back to primary health care providers;

- A close working relationship between the DHB's Paediatric and Emergency Department Services helping to make sure that the health needs of 0-4 year olds are met;

- Access to a "next day" paediatric follow-up clinic for children sent home from the Emergency Department to help make sure, for example, that any remaining health concerns are taken care of and those caregivers understand any advice that has been given.

C. Across the health sector (public, primary, secondary)

- Development of Asthma and Eczema Pathways which make use of 'Map of Medicine' tools[9]. These Pathways are about services working together to better manage asthma and eczema in the community. Secondary services clinicians are also providing training and consultant support for primary care workers through forums such as the Whanganui Regional Health Network hosted Whanganui Inter-Professional Education (WIPE). Support includes secondary services clinicians making themselves available to offer telephone advice and support;

- The recent introduction of a new-born quadruple enrolment initiative in Whanganui (i.e. Well Child Tamariki Ora enrolment, oral health enrolment, PHO enrolment and enrolment on the National Immunisation Register);

- Whanganui Accident and Medical's sharing of reception and triage services with the hospital's Emergency Department;

- Secondary services staff providing training sessions for Māori health and community health workers throughout the region covering ASH related areas including family violence, child abuse and child protection;

[9] The initial United Kingdom initiated 'Map of Medicine' concept "was developed as a way to make hospital referral criteria more consistent and local"(Office of the Children's Commissioner, the Paediatrics Society of New Zealand & Ko Awatea – Centre for Health System Innovation and Improvement, 2013: 26).

- Key secondary services staff providing health related advice and information to Māori health and community health workers by telephone.

D. In the wider community

- The health, education and disability sectors (HEADs) multi-agency weekly forum which brings key people together to plan action around children referred to the forum. The focus is on taking a coordinated, team approach to cut down on the number of agencies whānau have to deal with and to speed up putting the "right" support in place for that whānau at the right time;

- A very broad range of intersectoral initiatives building working relationships across sectors including health (eg government agencies such as the Police and Child Youth & Family Services; the non-government sector such as Youth Services Trust, Family Planning, Te Oranganui Iwi Health Authority, Plunket, Ngā Tai o Te Awa, Te Ora Hou). Many of these initiatives are focussed on sharing information and support as well as taking planned action in areas such as family violence, child protection, alcohol and other drugs and housing.

6. WHAT ELSE COULD BE DONE?

After working through the interview and survey results, as well as the literature, we suggest that there are a number of other things which could be done, or done better, in Whanganui to get our ASH 0-4 years rates down even further. They include:

A. Primary health (GP / practice nurse / community health worker etc) services

- Significantly "ramping up" the resources available for local home insulation projects so that more homes can be insulated as well as investigating other avenues for improving housing stock;

- Encouraging GP practices to regularly audit and review their "frontline" culture to help to make sure that services are accessible to whānau;

- Prioritising cultural training and customer relations training for "frontline" staff, such as receptionists to help to make sure that services are accessible to whānau;

- Making use of ASH 0-4 years data which could be provided on a monthly basis by the WDHB (e.g. to develop strategies for the follow up of PHO enrolled whānau who show up in the ASH 0-4 years data);

- Making more use of nurse practitioners (eg through nurse practitioner led clinics) and nurse led services;

- Making it easier for whānau to contact GP services via telephone. Services could review telephone call response times as well as response method (i.e. human versus automated) and timely follow up of messages left on automated systems;

- Continuing to look at ways to help ensure that whānau consistently get care from the same primary care clinicians, or small group of clinicians, who are familiar with their care; and,

- Better communication and sharing of information between GP services and other community level health providers especially those with Whānau Ora contracts. This would help kaimahi/nurses to better support care plan management to prevent ASH.

B. Secondary health (hospital level care)

- Prioritising cultural training for "frontline" staff, such as receptionists, and clinical staff;

- The Ministry of Health reviewing how it compiles ASH data and reviewing DHB coding practices as part of this work. Currently ASH data cannot be usefully compared across DHB regions;

- The DHB compiling and providing monthly ASH 0-4 years data back to the PHO for review and planning purposes;

- Reviewing 0-4 year old non-attendance at scheduled out-patient clinic appointments and whether non-attendance then contributes to a child ending up in hospital. If there is a relationship, look at what else can be done to improve attendance rates;

C. Across the health sector (public, primary, secondary)

- More effective sharing of patient health care information across health services;

- A much stronger focus on promoting health literacy; we could first agree on clear and simple priority key health messages across the health sector as well as across the wider community (eg education, social services sectors). Working closely together would strengthen the power of priority key messages and make best use of the limited resources available for promoting those messages;

- Work towards 'seamless' health services delivery making it as easy as possible for whānau to get the health care they need. This could include, for example: strengthening Public Health Nurse links to primary care (eg review current activity and opportunities to work more closely with primary care services including through co-location in the community); and, strengthening hospital social worker links to primary care (eg review how social workers are being used within secondary services and where opportunities may exist to shift some of this resource out into the community to better align with primary care).

D. In the wider community

- The DHB playing a key role in developing community profiles and carrying out community wellbeing needs assessments working closely with each of the most

deprived communities in the region. To do this, the DHB would need to use its resources and partnerships, as well as build new partnerships, with iwi, key agencies and other players[10] to share existing information, identify information gaps and address these information gaps. Where communities are already doing this profiling and needs assessment work, the DHB needs to be actively contributing to this;

- the DHB and its partners, using the community level information described above, to feed into a collaborative planning cycle alongside each community to meet the wellbeing needs that community has prioritised;

- Focussing relevant DHB resources on those communities facing the highest levels of deprivation and with the greatest levels of need; for example Public Health Nurse and Health Promotion staffing could concentrate efforts only in these communities. They would work closely and collaboratively alongside other services, both within the health sector (eg Te Oranganui Iwi Health Authority, Māori providers and the Whanganui Regional Health Network) and beyond (eg social services NGOs, education service providers, community groups), to engage with these communities facing the highest levels of deprivation and with the greatest levels of need;

- Recognise the potential for intensive engagement with the Early Childhood Education (ECE) sector and, in particular, the ECE services used by those living in communities experiencing highest levels of deprivation as noted above. A significant proportion of 0-4 year olds and their whānau have contact with ECE services. This means that ECE offers extensive opportunities for cross sector services to work collaboratively to improve the overall wellbeing of the 0-4 age group. Examples of the kind of work which could be done (or more of this work could be done) include projects to promote hand-washing along with edible garden, active movement and oral health projects.

- Give further consideration to the issue of water fluoridation taking into account that dental conditions are a major contributor to ASH 0-4 years rates in Whanganui and that strategies are urgently needed to address this. The recently released report of the Office of the Prime Minister's Chief Science Advisor (2014) on the health effects of water fluoridation may provide useful background when considering development of local strategies to improve children's oral health.

[10] For example, District Councils, Government Departments, Non-Governmental Organisations across sectors etc

APPENDIX 1: BACKGROUND, RESEARCH DESIGN & METHODS

BACKGROUND

Hauora A Iwi, the Whanganui District Health Board's (WDHB) high-level strategic partner, works to uphold the principles of Te Tiriti o Waitangi/Treaty of Waitangi specific to Māori health across the WDHB district. A key element of Hauora A Iwi's work is bringing an Iwi Māori perspective to strategic and annual planning. Development of a Māori Health Plan, the key strategic document detailing future activity focussed on improving health outcomes for Māori (Whanganui District Health Board, 2013), is an integral component of Board planning activity.

Māori Health Plan 2013-2014 priorities were identified by Hauora A Iwi, "articulated … to the Board of the WDHB" (Whanganui District Health Board, 2013:3) and incorporated in a final Ministry of Health (MoH) approved Plan for the current period. Amongst these priorities is reducing avoidable hospitalisation and repeat presentations to hospital under the broader umbrella of improving maternal and child health (Whanganui District Health Board, 2013).

During the latter part of 2013, Hauora A Iwi determined that more detailed information was needed to help better understand issues relating to the avoidable hospitalisations of Māori. Whakauae Research for Māori Health and Development was invited by Hauora A Iwi to develop a research proposal specifically considering factors contributing to the high ambulatory sensitive hospitalisation (ASH) rates for Māori in the 0 – 4 years age group in the region[11]. Exploring options for reducing these high ASH rates was also identified as a key area of interest for Hauora A Iwi.

Whakauae developed and submitted a research proposal to Hauora A Iwi in November 2013. Subsequently, Hauora A Iwi discussed its intended commission of this research with the WDHB's Director of Māori Health. With the agreement of Hauora A Iwi, Whakauae was invited by the Director to further develop the research proposal with a view to including a wider focus on the 0 – 4 year age group; both Māori and non-Māori. An amended research proposal was prepared by Whakauae and accepted by the WDHB in December 2013. The research commenced early in 2014.

[11] Gray (2013) notes that ASH in the WDHB region in the Māori 0 – 4 year age group was the highest of those across all DHBs nationally, at 12,174 per 100,000 per year, as at June 2013. He adds that this rate is more than twice that of the best performing Board, Counties-Manukau which was closest to the national target rate for all ethnicities (ASH 0 – 4 years) of 5,641 per 100,000 per year.

RESEARCH STUDY DESIGN AND METHODS

The study used a largely qualitative design. A brief literature search and review was carried out in the early phases of the research in order to better inform our response both to the research questions and the development of data collection processes and tools. A key component of the design was one-off interviews carried out in two stages; stage one comprised a set of initial national level key informant scoping interviews and stage two comprised interviews with key informants from the Whanganui region.

The results of the first stage of key informant interviews informed the development of the interview schedule used with stage two key informants. The use of in-depth interviews contributed to the forming of a detailed picture of key factors contributing to high ASH 0-4 years rates along with potential avenues for addressing these.

Complementary qualitative data was collected via a small on-line survey comprising almost exclusively open-ended questions. The use of an on-line survey provided an opportunity to extend the range of informants as well as to check and compare results with those generated through in-depth interviews. A total of 35 people participated in the interview and on-line survey data collection phase of the research as summarised in Table 1 below.

Table 1: Qualitative data sources (n=35)

	National key informant scoping interviews	Whanganui key informant interviews	On-line survey	Total
Number of participants	**4**	**18**	**13**	**35**

In addition to the above components, the study included review of quantitative data extracted by Whanganui Regional Health Network and Whanganui District Health Board analysts. The literature search and review, key informant interview, on-line survey and quantitative analysis components of the research are further described below.

Literature search

The literature search focussed on exploring the ambulatory sensitive hospitalisation (ASH) concept, including its strengths and weaknesses, along with factors contributing to ASH rates generally. Rates for 0-4 year olds, and in particular for Māori in this age group, were of particular interest. We set out to find information which could help to answer the following questions**:**

- **What** is **ASH**?
- **What factors impact** on **ASH rates** in Aotearoa New Zealand?
- **Why** do ASH rates **differ across Aotearoa New Zealand**?
- **Why** do ASH rates **differ among ethnic groups?**
- **What can** be done to **reduce ASH rates**?
- **What is** being done to **reduce ASH rates**?

The literature search process is described below.

Literature search parameters

The parameters of the literature search included being:

- Restricted to the period 2000-2014. The purpose of this restriction was to capture contemporary information and evidence concerning ASH in a rapidly changing social, economic and political context; and,
- Focussed on Aotearoa New Zealand though we did search beyond this to similar Western democracies with indigenous populations.

Networking Sources

In the early stages of the research project, we contacted a colleague at the University of Auckland who we knew had an interest in ASH and had published in related areas. The colleague was asked to direct us to seminal works in the ASH area.

As well as directing us to seminal work, the colleague directed us to three other key academics working in the ASH area, in various capacities. Through these contacts we learned about the availability of additional literature. This included two unpublished papers (one authored by Dr Barry Milne and colleagues and the other by Professor Don Matheson and colleagues) which are currently being considered for publication. Though we are unable to cite this work it has been

taken into account in this ASH study. We also followed up relevant sources cited by these authors in their unpublished papers.

Google Sources

An initial Google search (using the terms ASH / New Zealand / Māori) identified several information sources. These were primarily websites which included links to district health board reports, policy positions and relevant meeting minutes. Through this search, ASH related initiatives being undertaken by Compass Health PHO and Counties-Manukau District Health Board in particular were identified. In March 2014 we contacted key personnel at both Compass and the Counties-Manukau District Health Board. Through Compass, additional grey literature was later sourced.

Academic Data Base Sources

Data bases were accessed through the University of Otago, Wellington (Medical & Health Sciences Library).The University of Otago Catalogue, Summon was used to carry out a broad search of the literature. Summon provides fast, simple, one-step searching across the University of Otago Library's resources. It is designed to make it quick and easy to begin researching a topic. Though not a replacement for the detailed and precise search tools available from individual subject specific databases, we considered that using Summon would adequately support the ASH Whanganui research project. A Summon search includes the following data bases:

PubMed
Medline OvidSP
Medline ProQuest
CINAHL
SSRN (Social Science Research Network)
PsycINFO

Search refinements we used were:

full text available online, scholarly publications only, English only, 01 01 2000 onwards.

Search terms and combinations we selected were:

Ambulatory Sensitive Hospitalisation ASH	Māori	0-4 years	New Zealand

Avoidable Hospitalisation	Indigenous	Young children	Western
	First Nations	Tamariki	First World
	Aboriginal		Modern democratic
	Native		

Approximately 100 possible search term combinations were constructed using the above matrix. A third of these combinations were searched. The search was limited to only one third of the combinations constructed because it soon became clear that either of the ASH categories, when combined with age and / or ethnicity categories and / or socio-geographic categories, identified any relevant source material. Carrying out exhaustive searching, using all possible pre-selected combinations was considered unlikely to identify further source material and was not therefore pursued. Sources identified were retrieved and briefly reviewed. These sources have been directly cited in the report where relevant.

Key Informant Interviews

National key informants were identified on the basis of their publications and / or profile in the ASH field, and convenience sampled (Patton, 2002). Local level key informants were identified on the basis on their roles in the health sector and also convenience sampled. It was considered particularly important to ensure a mix of both clinical and non-clinical health workers as well as Māori and non-Māori and health workers from across the sector; primary care, secondary care, Māori and community health and public health in the local sample. It should be noted that three of the key informants listed under the secondary care column (two Māori and one non-Māori) also carried out work in primary care. Characteristics of the Whanganui informant sample are summarised in Table 2 below.

Table 2: Characteristics of Key Informant Sample (n=18)

	Primary care	Secondary care	Māori health	Public health	TOTAL
Māori	0	3	6	0	**9**
Non-Maori	3	4	0	2	**9**
TOTAL	**3**	**7**	**6**	**2**	**18**

Participant Information Sheets (included in this Appendix) were prepared and a copy given to all key informants. Information Sheet content was discussed with informants prior to completion of Consent Forms (included in this Appendix) and carrying out of interviews. Two separate interview schedules (also included in this Appendix) were designed by Whakauae; one of these was targeted at national level informants and the other at local level informants.

The four national level key informants took part in individual telephone interviews carried out during March – April 2014. A total of 12 local level key informant interviews were then conducted kanohi ki te kanohi (face to face) during May - June 2014. One of these interviews was a small group interview and another was a paired interview. A further key informant elected to respond to interview questions in writing. The remainder of the interviews were conducted one-on-one.

All interviews were audio recorded, with the consent of participants, and transcribed prior to input into Dedoose[12]. Transcripts were initially reviewed by both researchers working on the study. A coding system was then developed identifying key elements of relevance to the research. The researchers independently reviewed all interview transcripts applying these codes and expanding the coding system where necessary. As a result of this work, both researchers initially identified key themes from the data. Using the rōpū method (Boulton & Kingi, 2011) these findings were then shared with analysis being refined and key messages determined.

[12] Dedoose is a cross-platform application for analysing text, video, and spreadsheet data (analysing qualitative, quantitative and mixed methods research).

On-line Survey

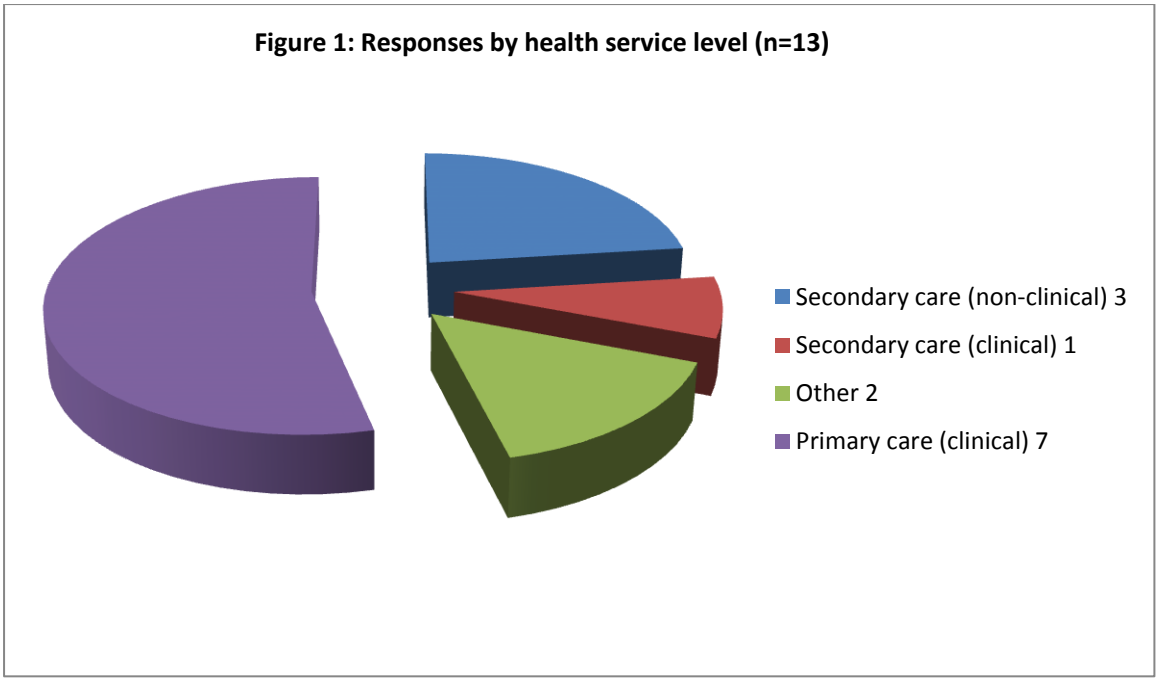
In late June 2014, 25 health sector workers were invited to participate in an ASH on-line survey (included in this Appendix) via e-mail (also included in this Appendix). The invitation contained web link access to the survey tool.

A survey recipient distribution list was compiled using a snowball sampling method (Patton, 2002). This involved inviting Whanganui key informants to recommend other health sector workers they believed may have useful information and insight into ASH 0-4 years issues locally. Informants were also asked, where possible, to provide email addresses, for those they had identified as potential survey respondents. Whakauae sent out an initial email invitation and web link access to the on-line survey, to those on the distribution list compiled, on 30 June 2014. The survey was open for two weeks closing on 11 July 2014. A survey completion reminder email was sent out at the end of week one with a final reminder being sent on the day the survey was to close.

The on-line survey was constructed, administered and statistically analysed using Survey Monkey. The survey was completed and by 13 respondents. Though only a small number of participants were eligible to take part in the survey, the response rate of 52% is well in excess of the 32% and 30% response rates respectively achieved by two similar recent on-line surveys[13].

Figure 1 below shows the health sector sources of on-line survey responses. More than half of respondents worked in primary health care and almost a third worked in secondary services. The two respondents included in the "other" category worked in health research and public health respectively. Of the 13 survey respondents, 12 were based in the township of Whanganui with the remaining respondent being based in the District Health Board's rural hinterland.

[13] One of these surveys was carried out as part of an evaluation of the Whanganui District Health Board's Nutrition Fund (Cvitanovic, 2013) and the other as part of an evaluation of the South Island District Health Boards' Nutrition Fund (Moss, Holmes, King, Boyd & Pipi, 2011).



Contingencies for accommodating potentially low survey participation rates were considered by Whakauae prior to survey design. Use of an on-line survey tool was selected as the optimum survey administration mechanism. This was because of ease of access, minimal completion requirements in terms of time and ease of survey return. In order to incentivise participation, those who completed the survey were also eligible to be entered in a random draw to win a $100 Warehouse voucher.

Survey response data was inputted into Dedoose and thematically analysed alongside key informant interview data similarly inputted.

Quantitative Data

The researchers met with analysts from both the District Health Board's secondary services arm and the Whanganui Regional Health Network to discuss extracting quantitative data concerning Whanganui ASH 0-4 years. Data queries were raised with both analysts and included:

ASH 0-4 Whanganui DHB data for the past five years by:

- Age bands
- Domicile
- NZ Dep
- Ethnicity
- ASH condition

- Inter-district flows

Additional Primary Care data:

- Patients with repeat ASH (0-4 years) discharges
- Comparison of activity in primary care and secondary care
- Link between ASH and enrolment in the PHO.

Secondary Services Data

Non-identifiable data for discharges between 2009 and 2013 of children under the age of five years domiciled in the Whanganui DHB area was extracted from the National Minimum Dataset (NMDS). The data included demographics (date of birth, age, gender, ethnicity, domicile as census area unit), and principal diagnosis, and included admissions to other DHBs. This information was processed as per the Ministry of Health definitions for ambulatory sensitive hospitalisation (ASH) for 2013 - 2014.

As the data was non-identifiable, distinct children were subjectively identified using date of birth, gender and ethnicity. This method does have its limitations, eg identifying same gender twin, or even two distinct children with the same date of birth, gender and ethnicity. However, it was felt that this method was suitable for this analysis (Jackson, 2014).

The 2013 census population was used to calculate rates per 1,000 children. It does not accommodate any population changes over the 5 year period but it provided an accurate and recent population base to work with. Other population information available indicates a very small increase in Māori children and a 3% decrease in total. Unfortunately, population by ethnicity by age is not available at the Census area unit level. Therefore the total population for the Census area unit was used for all ethnicities. It is acknowledged that this is not ideal considering the variations in ethnic populations between the Census area units (Jackson, 2014).

In addition to requests for data at a local level, a request was made to the Health Quality & Safety Commission for additional ASH data. We were referred to the ASH Atlas of healthcare variation that the Commission published in 2013. The "Atlas" is broken down into different age groups and within each age group both the Ministry of Health calculated ASH rates and the Commission's 'modified' ASH are presented. Rates by condition are also presented. In looking at ASH rates, the Commission's Expert Advisory Group chose to remove most of the filters applied

when ASH is calculated by the Ministry of Health. They also included emergency department presentations that met the 3 hour rule.

The researchers had two separate face to face meetings with the Whanganui Regional Health Network analyst which was helpful in further exploring the meaning of quantitative data at a primary care level. Quantitative analysis of ASH at a primary care level is an ongoing project and currently data is still being extracted and interpreted by the Network.

ETHICS

Formal ethics review and approval was not sought for this preliminary investigative study. Whakauae considered that the nature of the study precluded Health and Disability Ethics Committee review because it involved conducting low risk observational research with fully informed participant consent. In drawing this conclusion, Whakauae took into account the definition of the scope of Health and Disability Ethics Committee (HDEC) review contained at section 3 of the Standard Operating Procedures for HDECs along with the flowchart developed to assist in determining whether or not a particular study requires HDEC review (HDEC, 2014).

In March 2014, we contacted the HDECs Advisor outlining the nature of the research and seeking clarification of ethics review requirements. As expected, we were advised that review was not necessary on the proviso that no personal health records would be accessed for the purposes of the research.

Though formal ethics review was therefore not sought, all expected research ethics processes have been adhered to in the conduct of this research project. This includes securing the fully informed consent of all research participants.

LIMITATIONS

This was a small scale study carried out over a brief timeframe of eight months. The study design was informed by the time restrictions and by other resources available to answer the research questions. The study results reflect these limitations. One of the biggest gaps in the study is that it does not represent the voices of the whānau behind the ASH 0-4 numbers. We did not talk with whānau about their experiences with their child's health care services in the community or about the things that led to their child ending up in hospital. Instead, we relied on hearing something of these stories from health care workers. The picture we have drawn of ASH 0-4 years in Whanganui is coloured by what these health care workers and managers have

told us about what they see and how they deal with it. That picture would be richer if whānau stories were also included.

There are other limitations to the study. In particular, we consider that going beyond the health services would help to more fully explain our rates of ASH in the 0-4 years age group. Collecting data from people across the community including iwi, social services, education services and local government, at all levels, would add another layer of knowledge. Addressing the issues contributing to high ASH rates requires a "whole of government" and "whole of community" approach. ASH is not an issue that the health sector is able to successfully negotiate in isolation.

Limitations have also been identified in the quantitative data and brief descriptions of several of these limitations have been included in the Quantitative Data section above.

The final section of this Appendix includes all documents referenced above in relation to the conduct of the research.

INFORMATION SHEET FOR INFORMANTS CONTRIBUTING TO THE SCOPING OF THE STUDY

Thank you for your interest in this research which Hauora A Iwi, the iwi relationship entity and high-level Whanganui District Health Board strategic partner, has co-commissioned with the Board. Ngāti Hauiti owned research centre, Whakauae Research for Māori Health and Development is carrying out the study. Before you decide whether or not to take part please read this sheet. If you decide not to take part there will be no disadvantage to you of any kind.

The overall aim of this study is to build a more comprehensive, and primarily qualitative, understanding of current ASH 0-4 years rates, both Māori and non-Māori, in the Whanganui region. Findings will potentially inform development of strategies for reducing ASH rates in this age group. With a view to optimising the limited research resource available for this study, the input of key study scoping informants is being sought in the first instance. Data collected in this phase will in turn inform the development of data collection methods and tools along with selection of data sources in the Whanganui specific phase of the study.

We would like to talk with you if you are willing to discuss your understanding of ASH 0-4 years issues generally.

We are interested in talking with you about:

- Your understanding of the ASH concept, its relevance and any weaknesses;
- Factors contributing to the high incidence of ASH 0-4 years in some parts of the country and the role ethnicity may play;
- Successfully reducing ASH 0-4 years rates generally, and rates for Māori particularly, along with the challenges this may present in different contexts.

If you are willing to take part in an interview:

- This will be by telephone. We will arrange a time and date which suits you for the interview to take place;
- We will seek your written consent to participate;
- We will additionally seek your written consent to your interview being audio recorded;

- You will not have to answer any interview question(s) you do not want to answer. You can decide to end the interview at any point if you want to. You will not be disadvantaged in any way if you do decide to end the interview.

How long will the interview take?

- The interview will take approximately one hour to complete.

What will happen to information you provide?

- Information you provide will be analysed, used to assist in focussing the next phase of the study and reported in such a way that you will not be able to be identified. Your name and any information which could identify you will not be linked in our report to the things you talk about without your express permission;
- Information collected will be securely stored and accessible only to the research team;
- It is expected that a summary of our report to Hauora A Iwi and the Whanganui District Health Board will be available to participants through these entities in due course;
- Results of the study may be published. Information included in any published material will in no way be linked to specific study participants.

Questions

If you have any questions about this research, either now or in the future, please contact:

Ms Lynley Cvitanovic or Dr Heather Gifford
Whakauae Research for Māori Health and Development, Whanganui
Ph (06) 347 6772
Email: lynley@whakauae.co.nz
heather@whakauae.co.nz

INFORMATION SHEET FOR WHANGANUI KEY INFORMANTS

Thank you for your interest in this research which Hauora A Iwi, the iwi relationship entity and high-level Whanganui District Health Board strategic partner, has co-commissioned with the WDHB. Ngāti Hauiti owned research centre, Whakauae Research for Māori Health and Development is carrying out the study.

Before you decide whether or not to take part please read this sheet. If you decide not to take part there will be no disadvantage to you of any kind.

The overall aim of this study is to build a more comprehensive, and primarily qualitative, understanding of current ASH 0-4 years rates, both Māori and non-Māori, in the Whanganui region. Findings will potentially inform development of strategies for reducing ASH rates in this age group.

We would like to talk with you if you are willing to discuss your views and experience in relation to ASH (0-4 years) in the Whanganui region.

We are interested in talking with you about:

- Factors contributing to the high incidence of ASH 0-4 years in the Whanganui region;

- Successfully reducing ASH 0-4 years rates, in particular for Māori, along with the challenges this may present.

If you are willing to take part in an interview:

- We will arrange a time and date which suits you for the interview to take place;

- We will seek your written consent to participate in the research and to audio record your interview;

- You will not be expected to answer any interview question(s) you do not wish to answer. You can decide to end the interview at any point if you want to. You will not be disadvantaged in any way if you do decide to end the interview.

How long will the interview take?

- The interview will take approximately one hour to complete.

What will happen to information you provide?

- Information you provide will be analysed and reported in such a way that you will not be able to be identified. Your name and any information which could identify you will not be linked in our report to the things you talk about without your express permission;
- Information collected will be securely stored and accessible only to the research team;
- It is expected that a summary of our report to Hauora A Iwi and the Whanganui District Health Board will be available to participants through these entities in due course;
- Results of the study may be published. Information included in any published material will in no way be linked to specific study participants.

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If you have any questions about this research, either now or in the future, please contact:

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Email: lynley@whakauae.co.nz
heather@whakauae.co.nz

ASH 0-4 years in the Whanganui District Health Board region: A preliminary investigative study

CONSENT FORM

I have read the Information Sheet and I understand what the study is about. All my questions have been answered to my satisfaction. I know that I can ask for more information about the study at any time. I know that:

1. My participation in this study is entirely voluntary.

2. I am free to withdraw the information I provide, up to and including 31 July 2014, without disadvantage of any kind.

3. I may decline to answer any particular question(s) without disadvantage to me of any kind.

4. The results of the study may be published, but my anonymity will be preserved. No information which could reasonably lead to the identification of informants will be included in any report or published material resulting from this research without the prior consent of the participant concerned.

5. Formal ethics review and approval has not been sought for this study. The definition of the scope of Health and Disability Ethics Committee (HDEC) review contained at section 3 of the Standard Operating Procedures for HDECs and the flowchart developed by HDEC to assist researchers to determine the requirement for ethics review have been referenced by Whakauae. The study involves low risk observational research and will comply with standard requirements for the ethical conduct of such research. Whakauae, in consultation with the HDECs Advisor, has concluded that HDEC review of this study is therefore unnecessary.

I (name).....agree to provide information as part of the ASH 0-4 years Whanganui District Health Board region preliminary investigative study being carried out by Whakauae Research for Māori Health and Development.

Date: Signature of informant:

ASH 0-4 years in the Whanganui District Health Board region: A preliminary investigative study

STUDY SCOPING INTERVIEW SCHEDULE

1. **What is your understanding of the ASH concept?**

PROMPTS: How is ASH defined? What is the purpose of the ASH concept? What does the concept capture? What alternatives are there to ASH?

2. **How useful do you think the ASH concept is as a performance monitoring tool / as a health needs indicator?**

PROMPTS: what are the strengths of the concept? What are the draw backs? Is ASH used (or useful) for anything else other than reporting up to the Minister? Should we even be using ASH as a measure? What is happening with ASH internationally? Are measurements such as PAH (potentially avoidable hospitalisations) more useful than ASH? Why / why not?

3. **What social inequalities do you see reflected in current ASH rates?**

PROMPTS: What groups feature (Prompt Māori, Pasifika, high Dep, rural)? Why do you think this is? What do you think the relationship is between ethnicity and socio-economic deprivation as factors shaping ASH rates? How important are personal behaviours and attitudes? How important are clinical behaviours? Development and delivery of health services? Why cross DHB differences?

4. **What do you think are the biggest gaps in our current understanding of factors shaping ASH generally and in particular for those in the younger age groups 0 – 4 years rates?**

PROMPTS: What would be useful to further explore?

5. **What information do you think would be the most important to collect in order to advance our knowledge in the area of ASH in NZ and understand the situation to enable intervention design?**

6. **What do you think needs to be done to successfully reduce ASH 0-4 years rates?**

PROMPTS: Where does the focus need to be? Who needs to be involved? What period of time would be necessary to achieve this? (eg how important is intersectoral collaboration? What sectors in particular?)

7. **ASH is generally seen as a PHC performance issue – can you talk about this from your perspective- is it solely a PHC issue – who else are the key players?**

PROMPTS: Access, referral pathways, primary health practitioner workload, continuity of care, physician experience and adherence to clinical guidelines etc

8. **Please tell me about any initiatives you are aware of to reduce rates of ASH 0-4 years (in this country or overseas).**

PROMPTS: What do these initiatives involve (prompt targeted approaches Māori Pasifika, high Dep?). Why were these initiatives, in particular implemented? What do you know about how successful, or otherwise, these initiatives have been to date? What do you think have been factors contributing to that success (explore by population group eg ethnicity, deprivation level)

ASH 0-4 years in the Whanganui District Health Board region: A preliminary investigative study

WHANGANUI KEY INFORMANT INTERVIEW SCHEDULE

1. What is your understanding of ASH and, in particular, ASH in the 0-4 year age group?

PROMPTS: what kinds of hospitalisations are "avoidable" and why? What do you think would be the main reasons for ASH in the 0-4 year age group? Why?

2. What do you think ASH (0-4 years) rates "look like" in the Whanganui region and why?

PROMPTS: How significant or otherwise do you think ASH 0-4 year rates are likely to be in Whanganui? What is it about Whanganui which you think might influence ASH rates?

3. Whanganui ASH 0-4 years rates are disproportionately higher than national rates. In comparison to most other DHB regions our rates are also higher. Why do you think this might be?

PROMPTS: What might the impact of Whanganui's demographic make-up be?

What about the impact of access (or lack of access) to primary health care – geographically? In terms of cost? In terms of weekend and evening cover? What about the attitudes of health professionals? What about whānau and families attitudes? What about the ways in which ASH is currently being recorded? What about admissions under the ASH category that may be made for reasons other than ASH (eg social reasons).

4. Whanganui ASH 0-4 years rates are disproportionately higher for Māori than they are for non-Māori. What do you think may be some of the reasons for this?

PROMPTS: Disproportionate socio-economic deprivation? Lack of culturally appropriate services and appropriately trained staff in primary care? In secondary care? Institutional racism?

5. Who do you think is responsible for improving ASH rates?

6. ASH is generally seen as being a measure of the effectiveness of primary care in a community. To what extent do you think that ASH is largely a primary care issue?

PROMPTS: Is ASH something that primary care can deal with in on its own? What improvements in primary care in the Whanganui region are needed to better address ASH?

7. What help and support, if any, do you think primary care in Whanganui needs to better deal with high ASH rates? What might this help and support "look like"?

PROMPTS Closer collaboration with the social and education sectors? Where would the emphasis of this collaboration need to be? At what level would it need to be led from? More training and up-skilling? In what areas?

8. To what extent do you think secondary care services and the ways they operate are contributing to our high ASH 0-4 year rates?

PROMPTS: How effective are discharge follow-ups? How closely are secondary services working with primary care and with the community?

9. What could be done differently at secondary services level to address ASH 0-4 years and how?

10. What else do you think needs to be done to successfully reduce ASH 0-4 years rates in Whanganui?

PROMPTS: Where does the focus need to be? Who needs to be involved? What period of time would be necessary to achieve this? How important is intersectoral collaboration? What sectors in particular need to be involved in framing solutions?

11. What else would you like to add to what you have already said about ASH 0-4 years issues in Whanganui and how we can best address these.

ASH On-Line Survey

To enter in the $100 Warehouse voucher prize draw, we need to be able to contact you if you are the winner. If you wish to enter the voucher prize draw please enter your email address below.

My email address is:

Please answer the following questions:

Whanganui has high rates of potentially avoidable hospitalisation (ASH) for 0-4 year olds especially for Māori. What do you think could be the main reasons for these high rates?

Who do you think is responsible for reducing ASH 0-4 years rates in Whanganui?

One of the things ASH data does is measure how well primary care services are working to help to keep people healthy. What improvements in primary care services in the Whanganui region do we need to help reduce our ASH 0-4 years rates?

What help might our primary care services need to bring down ASH 0-4 years rates?

Do secondary care services, and the ways they operate, contribute to our high ASH 0-4 year rates?

No, not at all **No, not much** **Unsure** **Yes, to some extent** **Yes, a lot**

Comment:

What could be done differently at secondary services level to help lower our ASH 0-4 years rates?

What, if anything, could be done outside health care services to bring down our ASH 0-4 years rates?

What else do you think can be done to bring down ASH 0-4 years rates in Whanganui?

I work in:

Primary Care (clinical) **Secondary Care (clinical)**

Primary Care (non-clinical) **Secondary Care (non-clinical)**

Other - please describe:

Thank you for taking part in this survey.

On-Line Survey Invitation Email

Go in the draw to win a $100 Warehouse voucher – take part in a survey about the potentially avoidable hospitalisations of Whanganui children aged 0-4 years. The link to access the on-line survey is: @@@@@@@@@@@

Background

Sometimes young children end up in hospital for the treatment of things like dental conditions, skin infections and respiratory conditions. If these conditions had been successfully managed earlier, hospitalisation may have been avoided. Hospital admissions of this kind are known as ASH - Ambulatory Sensitive Hospitalisations. In Whanganui, our ASH 0-4 years rate is particularly high for all ethnic groups and particularly high for Māori.

Whakauae Research for Māori Health & Development is carrying out local level ASH 0-4 years research. This work is being done on behalf of Hauora a Iwi (the WDHB's Iwi Relationship Board) and the Whanganui District Health Board. As part of the work, we are surveying some health workers to find out what they think may be some of the reasons for the high ASH 0-4 years rates and what can be done to reduce these rates. We would really like to know what you think about these issues. The survey will take about 10 - 15 minutes to complete.

All those directly invited by Whakauae to complete the survey, and who submit the survey on-line **by Friday 11 July 2014,** will (with their consent) go in a draw to win a $100 Warehouse voucher.

Up to 25 health workers may be eligible to enter the $100 Warehouse voucher draw**.** The survey is anonymous and no individual will be identified in the survey reporting. To be entered in the prize draw you will need to enter your email address when you complete the survey. This is so that we can contact you if your entry is drawn as the winner. **Your email address and identity will not be used for any purpose other than to contact you if you are the prize draw winner.**

Completion and submission of this survey will be taken as your consent to participate in this research and will be greatly appreciated. Please contact us if you have any questions about the survey.

APPENDIX 2: WHAT IS ASH AND WHAT DRIVES IT?

In this Appendix to the Report the ASH concept is initially outlined, critiques of its relevance are noted and issues with ASH data are discussed. The remainder of Appendix 2 explores factors driving ASH rates in the 0-4 year age group. Content draws on key informant interview and respondent survey data, quantitative data and the current literature.

OVERVIEW OF THE ASH CONCEPT

ASH is the acronym for Ambulatory Sensitive Hospitalisation. Hospitalisations which are considered sensitive to ambulatory intervention are generally those resulting from worsening health conditions likely to have been treatable outside of a hospital in a primary health care setting.

Most of those we interviewed, as part of the Whanganui ASH 0-4 years study, were unsure what the ASH acronym denoted. Almost everyone interviewed however, had previously heard the term ASH used in the course of their work. When the ASH acronym was explained by the researchers, key informants quickly recognised the concept and could provide varied examples of ASH incidences along with observations around what they considered to be key contributors to ASH. Therefore whilst informants' knowledge of ASH as a technical term was often limited, their understanding and experience of ASH in practice tended to be much more extensive. Key informants, for example, readily listed common ASH conditions:

> *…asthma that's not treated properly….bronchiolitis, a lot of respiratory illness I think. Also things like kids with bad eczema that get infected scabies….when I think of ASH, this is my own personal view, I think of…things like kids who…come in repeatedly for things like exacerbated asthma* (KI03).

Though most informants were able to identify conditions likely to contribute to ASH rates, few were familiar with the idea that ASH might be used as a primary care effectiveness measure. In marked contrast to this lack of familiarity, the relationship between ASH and primary care is a key concern highlighted in the literature. The Porirua Social Sector Trial Advisory Group (2013), for example, describes ASH as those:

> …health conditions that, if managed well with the help of a general practice team in the community, would be less likely to require admission to hospital (Porirua Social Sector Trial Advisory Group, 2013: 4).

The *Child and Youth Health Compass Report* (2013) is consistent with this view noting that:

> Ambulatory sensitive hospitalisations (ASH) are mostly acute admissions that are considered potentially reducible through prophylactic or therapeutic interventions deliverable in a primary care setting (Children's Commissioner, the Paediatrics Society of New Zealand & Ko Awatea, 2013:24).

Ambulatory sensitive hospitalisation (ASH) is generally described in the literature as being a tool with the potential to be used to measure primary healthcare sector activity (Ansari, Z., Laditka, J. & Laditka, S. 2006; Craig, Adams, Oben, Reddington, Wicken & Simpson; 2011). Jackson & Tobias observe that, in some settings, ASH has moved beyond being a potential measurement tool to "… sometimes [being] monitored as a performance indicator for primary health care" (2001:12).

In New Zealand, ASH was formally introduced by the government for the purpose of measuring primary health care performance in 2007. An ASH target was included as one of a number of other "whole of health service" targets; at this time reflecting a focus on population health goals. According to Matheson & Loring (2011) development of the New Zealand Government's ASH target was modelled on the supposed success of a similar approach taken by the National Health Service in the United Kingdom.

The new National Government, which took office in November 2008, continued the previous Labour-led Government's focus on health targets. However, a revised set of health targets were announced in 2009 with these reflecting "a shift in emphasis towards performance indicators focusing on hospitals and specialist care" (Tenbensel, 2009:1) making them:

> …simpler and more publicly palatable, and positioned … much more strongly as "the" indicator of health system performance, rather than as "an" indicator of health system performance (Matheson et al 2011:1).

In this re-working of health service targets, ASH was replaced by an "ED waiting times" target. The Minister of Health observed at the time that the new ED target was much easier to understand than ASH. He added that emergency waiting times were of greater interest and concern to the public than what ASH had been. With this change the former DHB focus on primary health care services performance and the health services frontline, through the ASH target, was lost with hospital services instead being prioritised as the key area of public interest

(Matheson et al, 2011). In part, the shift in target reflected too that "*…primary health care indicators tend to be more difficult to develop than secondary health care indicators"* (EI01).

ASH has now been dropped as one of the health targets included in the government's set of national performance measures. It has however, been retained in an abbreviated form through the requirement that it be included as an indicator in all District Health Board Māori Health Plans. The Ministry of Health's Operational Performance Framework 2013/14 outlined specific Māori Health Plan inclusions making reference to both national and local Māori health priorities (Whanganui District Health Board, 2013). Consistent with this, the Whanganui Māori Health Plan incorporates ASH targets, one of which is the 0-4 years ASH target.

As has previously been noted in this report, the Whanganui ASH 0-4 years study was commissioned by Hauora A Iwi and the Director of Māori Health, Whanganui District Health Board in response to concerns around Whanganui's high ASH rates for this age group, particularly for Māori. Whanganui ASH 0-4 years rates regularly feature as the highest reported by the Ministry of Health across all 20 district health board regions.

CHALLENGES AROUND THE USE OF ASH

ASH is a complex concept and how it is defined and applied is controversial (Health Quality and Safety Commission, 2013). As noted above, ASH may be considered a measure of primary care activity. ASH as a primary care measure attributes principal responsibility for keeping the community well to primary care services. An alternative perspective takes into account the:

> …many other aspects of the health care system – hospital supply and configuration, emergency care department management, community care provision etc – [which] can have an effect on ASH. Underlying determinants of health such as housing quality, exposure to second-hand cigarette smoke, household crowding and poverty may also influence the incidence of ASH conditions in the community (Health Quality and Safety Commission, 2013).

In addition to the myriad factors cited above, a study key informant observed that the views of individuals, and the decisions they make as a result, can have an effect on ASH:

> *A lot of things may affect whether people are admitted to hospital for certain conditions. They aren't necessarily to do with what happened in primary care. So people may choose, for instance, to seek hospitalisation for a certain condition because they feel that the*

hospital care is going to be better. Whether that's correct or not is another matter. Or that the hospital is easier to get to because you can go there twenty four hours, for instance (EI01).

Others highlighted the lack of clarity around how ASH functions as a primary care measure casting some level of doubt on its utility, as the following comments highlight:

ASH is supposed to be a measure - well it's been used as a measure - of primary care access but there's been doubt about whether it actually [is] (EI01).

[It has] *the potential … to be a system level indicator of how well people are getting the care they need in the community* …[but] *in terms of unpacking what the rates reflect, it's really complex…. one of the barriers to it being meaningful employed is the lack of consistent understanding about what it reflects and how it might be useful* (EI03).

Despite questions around exactly what dimensions of primary care ASH assesses, the latter informant suggested that ASH was able to offer at least a proxy indicator of primary care activity in a community asserting that:

There's no question that [ASH] *does reflect on primary care to some degree, there's absolutely no question about that* (EI03).

Another informant too recognised the relevance of ASH as proxy indicator of primary care activity observing that:

If you compare different regions of the country, say New Zealand, in terms of a hard measure of access such as, you know, number of people enrolled with the primary health care practitioner or number of times individuals go to a primary health care practitioner, the regions with the highest rates of access, or number of GPs in a region as well…tend to have the lowest rates of ASH …which is one of the reasons I guess why ASH has tended to be used (EI01).

ISSUES WITH ASH DATA

In addition to the challenges outlined above, with respect to determining exactly what it is that ASH measures aside from hospitalisation rates, the study highlighted issues around how ASH

data is compiled and how it is reported. These issues primarily concerned coding of data at DHB level along with the collation, filtering and reporting of ASH data at Ministry of Health level.

Coding by DHBs & Ministry of Health treatment of ASH data

Early in the key informant data collection process, possible differences in how DHBs code the diagnoses of patients were identified as being problematic. Clinicians determine patient diagnoses and record these in patient notes and discharge summaries. Each DHB has trained coders who then assign the relevant ICD-10-AM[14] codes to these diagnoses. A study key informant suggested however, that because diagnosis and coding of that diagnosis are done in isolation the potential exists for misinterpretation; for example, the coder's perspective may not match that of the clinician.

Compounding the risk of misinterpretation, there does not appear to be any routine opportunity for coders to cross-check assignment of diagnostic codes with clinicians. In the view of the key informant cited above, the application of codes involves an element of subjective interpretation. The implications of this include that coding across DHBs has the potential to be, at least to some degree, inconsistent:

> *I know that the coders have rules that they follow and that they're trained and they attempt to make the coding reproducible from DHB to DHB etcetera. But I think there must also be a culture where they'll look for standards of proof before they'll accept that discharge diagnosis and they'll…you know, somebody makes a decision and it's not* [the clinician] *as to what that coding diagnosis is. And I've got a feeling, I mean I've seen coding diagnoses in the past where I've looked at the coding diagnosis and I've looked at the clinical notes and I've thought hmmmm…*KI06).

In the latter phase of data collection, we sought to further explore the possibility of there being differences in coding practices across DHBs. It became apparent that the view that differences could exist across the country was contested. Indeed, two informants were of the view that variations were unlikely to be an issue. This was because, as one informant explained:

[14] ICD-10-AM – The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification is a tabular list of diseases and an accompanying alphabetic index (Ministry of Health, 2014). The ICD-10-AM index is the classification system used by the New Zealand health service overseen by the Ministry of Health.

> *All ICD-10-AM coding is carried out according to the Coding Standards set down by the Ministry of Health and is uniform throughout NZ (KI11)….I doubt that coding around the country differs to a great extent as…* [all DHBs] *comply with Ministry of Health coding standards* (KI11).

The robustness of coding practices was thus asserted. Coders, it was explained, use their particular training and skill to apply the relevant codes to the diagnoses determined by attending clinicians. Review of codes assigned by clinicians was considered unnecessary by one key informant, who pointed out that essentially clinicians "*work with diagnoses rather than coding numbers*" (KI11) and therefore lack the necessary expertise to apply codes.

The same informant added that, whilst the Ministry of Health does carry out quarterly checks of specific selected coding indicators, no formal routine audits are carried out except where a DHB requests these. Internal DHB quality measures are however, applied in the coding process. Whether the application of such quality measures is consistently applied across DHBs is unclear.

Coding data is reported by DHBs to the Ministry of Health which uses it to, amongst other things, determine ASH rates. Study key informants noted concerns that ASH 0-4 years data subsequently generated by the Ministry of Health may not be robust enough to allow direct comparisons in ASH rates to be made across the 20 DHB regions. Differences in DHB coding were cited as being a factor contributing to questions around the value of the comparative ASH data. For example, one informant surmised that:

> *If we did a direct comparison of coding to the 20 DHBs … we would find quite a range of differences. And I think that could account for a small percentage of the variance or the differences in the ASH data. And in fact when you look at it, that could make quite a big difference between* [Whanganui DHB] *being an "outlier" - well below, you know, the people that we would think we compare ourselves with. I mean, certainly looking at the East Coast and Northland for example, we wouldn't have thought that we would be far different from them, you know?...so I think* [DHB level coding differences are] *probably at least a small part of it* (KI06).

Another key informant, in critiquing how ASH rates are currently compiled, reflected that the data would only really be "*useful* [across DHBs] *if the ASH definition* [was] *the same for every hospital"* (EI04).

The Ministry of Health's use of data filters, or exclusions, in line with its definition of ASH was cited as being an ASH data issue for several key informants. It was suggested that the process of applying these filters may distort the cross-DHB ASH picture making rates comparisons across DHBs problematic. Data the Ministry excludes from ASH rates includes that relating to admissions of individuals under the age of 29 days or over the age of 74 years, all electives apart from dental electives, same day emergency department cases meeting the three hour rule and primary rural facilities.

In relation to the Ministry's use of the emergency department filter, a key informant argued that larger DHBs with specialised paediatric facilities, for example, were able to quickly assess and treat children without moving them through to the admission phase. Children might, for instance, remain in specialist emergency department paediatric cells without being admitted and therefore included in ASH data collected.

Elsewhere, in regions lacking such facilities, an admission might result contributing to "pushing up" ASH rates. By excluding all emergency department work from the ASH data, a picture is painted by the Ministry of artificially low ASH rates in a DHB which has sophisticated emergency department facilities and resources. This arguably fails to take into account differences too in service delivery models amongst DHBs and the impact of these models on ASH rates.

The Health Quality and Safety Commission New Zealand (2013) in its *Atlas of Healthcare* supports the view that differences in the ways that DHBs code data contributes to variations in ASH rates posted. The *Atlas* includes both the Ministry of Health's ASH data, described above, and a Commission modified version of ASH in order to allow users to compare filtered and unfiltered results.

The Commission's modified ASH has Ministry of Health filters removed so that all ASH events can be viewed including those processed through emergency departments. Inclusion of unfiltered ASH data in the *Atlas* highlights "the impact these filters have on ASH rates and promote the concept of 'hospitalisations for whole system sensitive' conditions" (Health Quality and Safety Commission New Zealand, 2013).

Interestingly, as noted above, whilst Whanganui consistently has the highest ASH 0-4 years rates across all 20 district health boards reported by the Ministry of Health this picture changes when the Health Quality and Safety Commission New Zealand's modified version of ASH, with filters removed, is instead used as the reference point. Whanganui then drops to fifth place

behind Tarawhiti, Hutt Valley, Bay of Plenty and Lakes District Health Boards. Whanganui's eclipse by these other District Health Boards, using the non-filtered ASH rates, places us more where key informants expected we would sit in relation to other regions. The Commission itself however, does note that its DHB data is not intended to form a 'league table' but instead should be used to highlight where questions might best be asked around current DHB level activity.

In his inaugural *Performance Summary: Māori Health Plan Indicators* (2013) report to Māori Health General Managers in DHBs, Dr George Gray makes a brief recommendation that process improvements need to be made in order to ensure correct application of ASH diagnostic codes across DHBs. In the interpretation section of his most recent *Performance Summary: Māori Health Plan Indicators* (2014) report, Gray states a much stronger case for improving the validity of the ASH indicator. He contends that greater uniformity across DHBs in how ASH admissions are defined and how they are coded is critical, adding the important rider that:

> *Until these issues are addressed ASH can be considered a useful tool for comparing intra-DHB differences between ethnic groups, but unreliable as a tool for inter-DHB comparisons (Gray, 2014:2).*

Despite doubts about cross-DHB ASH 0-4 years data comparability, in common with Gray (2014), several study key informants identified the potential usefulness of ASH data at a DHB level. For example, it was proposed by one informant that the data could be used as a tool to monitor change and to:

> *…identify gaps in primary care. Or opportunities of where primary care and secondary care could be working differently. And not only just …within the health sector, but we're discovering a whole lot of gaps that if the social services were brought in to the conversation sooner then some of the health outcomes may be better for people* (EI04).

Another informant observed that:

> *Where it's most useful is over time - so looking at trends over time. And then discussing, you know, beginning to unpack what's made the difference over time to the change in the trend?....ASH is clearly very relevant if you're looking at the same geographic region and the services have remained relatively the same over time. Then looking at ASH in that region over time is very meaningful, right? But to compare across is really challenging* (EI03).

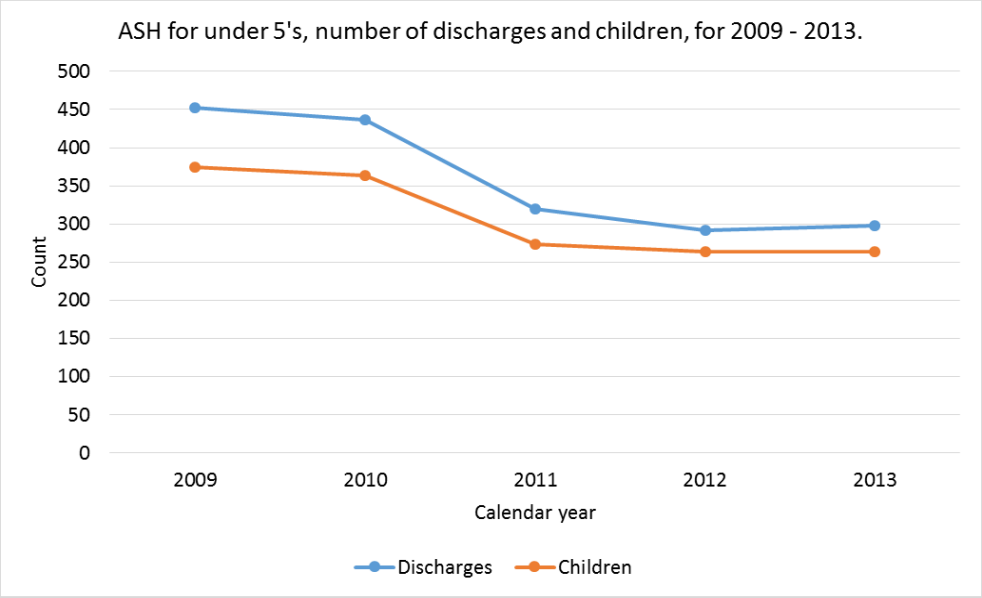
In summary, it is advisable to take into account the impact that data coding and filtering activities have on ASH 0-4 years rates before considering key factors driving those rates.

OUR CURRENT ASH 0-4 YEARS RATES

Between 2009 and 2013, the population of 0-4 year olds decreased in Whanganui from approximately 4,410 to -approximately 4,280. The number of Māori 0-4 year olds increased from around 1,910 to 2,000 with non-Māori decreasing from 2,500 to 2,280 (Jackson 2014). Alongside this, since 2009 Whanganui's ASH 0-4 years rate has been tracking down reaching a plateau in 2012 (Jackson, 2014). The biggest drop in the ASH 0-4 years rate occured in the period 2010-2011.

Since 2012, ASH 0-4 years discharges appear to be static in terms of number of children discharged but there has been a slight increase in actual discharges. In other words, there has been a small increase in the number of discharges recorded for some children as Chart 2 below highlights.

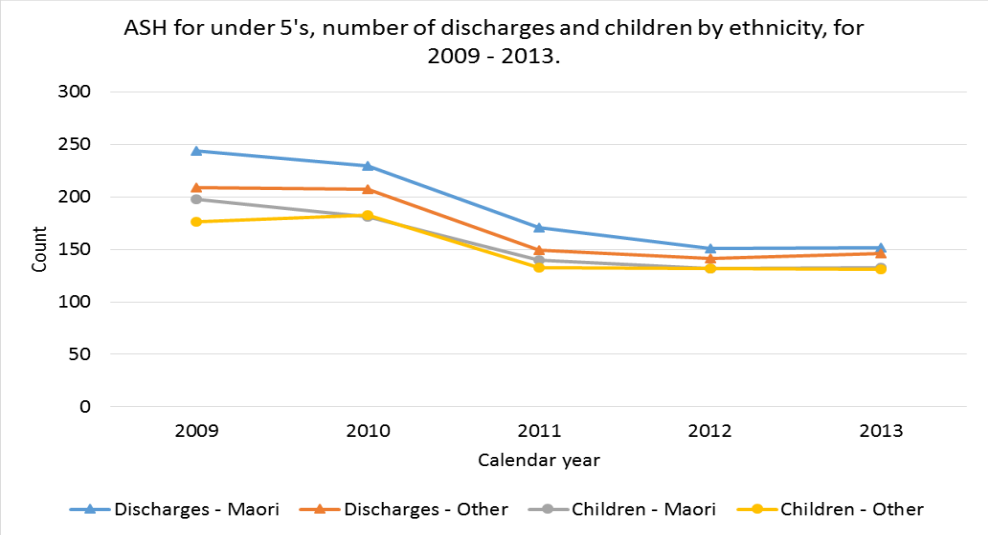
Chart 2



Source: Jackson (2014)

The changes noted above, in the pattern of ASH 0-4 years discharges appear to be similar for both the Māori and non-Māori populations. Chart 3 below indicates that the gap in ASH 0-4 years rates of discharge, between Māori and non-Māori, has also trended down during the period 2009 to 2013.

Chart 3



Source: Jackson, 2014

Though Māori continue to be proportionately over-represented in the ASH 0-4 years discharge rates that over-representation appears to be progressively declining. The reasons why our ASH 0-4 years rate has tracked down over the period 2009 – 2012 and subsequently appears to have reached a plateau in 2012, are likely to be many and varied. A range of contributing factors were proposed by study participants with many of these having been noted previously in this report (pages 18 – 21). Additionally, it is possible that enhanced management of conditions such as asthma and upper respiratory infections in the Emergency Department has contributed to lowering ASH rates. Similarly enhanced management of asthma in primary care may be gaining traction with the support of secondary care clinicians. From 2009 – 2012 yearly reductions in ASH discharges for dental conditions were also recorded suggesting that early intervention here too may be having some impact.

KEY FACTORS DRIVING ASH 0-4 YEARS

Key informant, survey and quantitative data we reviewed, along with the literature, together support the view that the drivers of ASH 0-4 years are complex and inter-related moving well beyond simply primary health activity. Though we found agreement around many of the things thought to contribute to our high ASH 0-4 years rates in Whanganui, there was no one single factor seen to be the major cause of these high rates.

Key ASH 0-4 years contributors identified are explored under five sub-headings below; A. wider socio-economic context, B. human services systems and processes and the ways they are funded, C. community, D. primary health (GP / practice nurse) services and E. whānau.

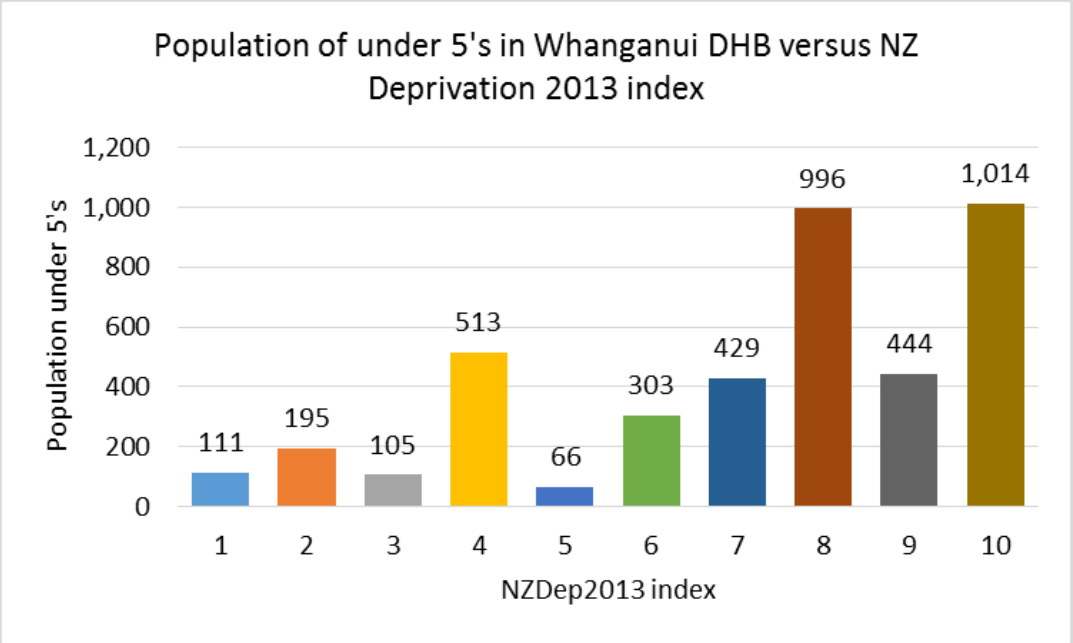
A. Socio-economic context

'Big picture' social constructs, principally socio-economic status and ethnicity, pattern a host of related health determinants. These determinants include deprivation and poverty, institutional and personal racism, low education attainment, sub-standard housing and poor diet. The link between health determinants and health outcomes has been well documented.

Whanganui has more of its people living in areas of higher deprivation compared to many other District Health Board regions. This over-representation in areas of highest deprivation has a critical role to play in shaping our ASH 0-4 years rates. Deprivation, as noted above, is strongly linked to health outcomes. Among the six DHBs making up the Central Region, Whanganui has the greatest number (35% or more than one third) of its population of almost 63,000 living in the most deprived quintile (deciles 9 & 10). Additionally, we have the smallest proportion of our population living in the least deprived quintile (deciles 1 & 2) at just 11% (Central Regions Technical Advisory Services Limited, 2014).

As well as having the greatest number of people living in the most deprived areas of the region, a significantly disproportionate number of our 0-4 age group is represented in the highest deprivation deciles (8, 9 & 10) as Chart 1 below highlights.

Chart 1



Source: Jackson (2014).

Those identifying as Māori make up over a quarter of our population (Central Regions Technical Advisory Services Limited, 2014). Māori are also heavily over-represented in the lowest decile communities in the region. As has already been noted, Whanganui's population of 0-4 year olds totals approximately 4,280; Māori 0-4 year olds number approximately 2,000 (Jackson, 2014) making up close to 50% of the total population in this age group.

In relation to this, a key informant observed that the higher ASH 0-4 years rates for Māori were likely impacted by the disproportionately high Māori as opposed to non-Māori birth-rate in Whanganui:

> *About 20%+ of our population is Māori but …over 50% of the children being born here are Māori….if you look at the number of children, say one to four, it's going to be over 50% are Māori. So that's part of the reason why there's a lot of Māori in our clientele* (KI06).

Unsurprisingly, reference to socio-economic status and ethnicity and the impact of these demographics on ASH 0-4 year rates was common among study key informants. Most recognised that:

> *…it's all so multi factorial, entwined… those sort of adverse health indices …in part due to the poor income, the poor housing, overcrowding, you know, damp, mouldy homes* (KI08)

Many made reference to our ASH 0-4 years rates being *"very patterned by socio-economic and ethnic factors"* (EI04) and it was widely acknowledged that *"Māori … have higher rates than non-Māori"* (EI04). A number of key informants speculated that our higher ASH 0-4 years rates for Māori could be explained by their over-representation in the highest deprivation deciles.

It is clear that low income translates to a poorer standard of housing. The negative impact of uninsulated or poorly insulated housing, inadequate heating and poor ventilation on Whanganui's ASH 0-4 years rates was repeatedly highlighted by key informants. The following examples are illustrative of the significance attributed to these sub-standard housing issues in relation to ASH:

> *All these uninsulated shitty old houses that people can afford. And in Marton - they're damp as buggery in Marton. Damp. It's definitely to do with these damp houses and the increasing price of electricity. People can't afford to heat their homes* (KI03).

It's worth visiting a lot of these houses to find how cold they are, how damp they are, how poorly ventilated they are…no heating…. you know, the thing that would make the biggest difference would be to have the "great fire of Whanganui" and burn down all the old lousy houses! (KI06).

A lot of our people live in rental properties. So then those rental properties, they're not insulated properly. I remember going in to a house one day, taking my shoes off, standing on the carpet and it was wet. My socks were wet… a family who, you know, have respiratory problems and there are children in that house. There was mould on the walls [KI04].

Along with key informants, Whanganui ASH 0-4 Years Survey respondents too commonly cited *"rental homes without insulation"* and *"poor housing conditions with cold houses due to lack of heating or insulation"* as being major contributors to Whanganui's high ASH rates.

The cost of heating was noted by some as being an associated contributor to our ASH rates. Heating costs meant limiting heating in some homes to only one or two rooms into which all household members crowded increasing the risk of the spread of some illnesses. A key informant observed that caregivers "*might afford to heat one or two rooms in the house so then you've got everybody lumped in to one or two rooms so they're coughing, coughing all over each other"* (KI03).

Un-flued, portable gas heaters are commonly used in areas of high deprivation as they are one of the cheapest heat sources. Un-flued gas heaters are understood to contribute to dampness and they lower inside air quality. These kinds of living situations can make many health conditions, including asthma and upper respiratory conditions, worse.

There are many other links between Whanganui's high ASH 0-4 years rates and high rates of socio-economic deprivation. Dental conditions, for example, are influenced by where and how people live. As one key informant explained:

Oral health is around our ability to pay for our needs, to pay for our food, to look after ourselves and it's a social economic disease and if you're, um, uh, challenged in any of those ways then you're more likely to have dental decay. As you are if you're Māori [KI18].

The large numbers of children we have living in areas of high deprivation contributes to us having so many children with serious dental conditions. In-patient hospital treatment for dental conditions makes up our second to largest group of overall ASH 0-4 years discharges. Ethnicity also appears to have an influence on our rate of ASH dental condition discharges. These make up the second to largest group of ASH condition discharges for Māori but the third largest for non-Māori[15].

Whanganui has had a big push on enrolling pre-schoolers in the dental service for a number of years to try and deal with the extent of poor oral health. This contributes to children getting followed up for monitoring and treatment more actively than in some other district health board regions. There are examples of children returning to the Whanganui region from other districts where:

> *…they haven't actually been dealt with in terms of the service up there because the service is quite overloaded, you know? And so they come back here and they've got their decay maybe from a different area and they come here and we see them because we're on time with our service. We've not got arrears and so what do you do? You know? We haven't even had a chance to get to them early because they haven't been living here* (KI18).

Whanganui follow-up often results in children needing secondary dental health treatment.

Our high rates for ASH 0-4 years due to dental conditions is, in a sense, a measure of the success we have in enrolling our children in the dental service and following up on their care. As a key informant observed:

> *Socio-economic status and …early enrolment when we're actually seeing the kids and actually having this opportunity to put them on to the list to come and have their teeth done within the service in the hospital are probably the main drivers (of our high ASH 0-4 years rates* [KI18].

[15] Dental is the only ASH condition for which elective admissions to hospital (i.e. planned admissions) are included.

The good thing about our high pre-school dental enrolment rates is that dental conditions do get identified and treated. The not so good thing is that so many of our pre-schoolers need such dental treatment in the first place.

The geography of our region is another contributor to our ASH 0-4 years rates with the population being spread out and many living in rural areas. When 0-4 year olds from outlying rural areas come into the Emergency Department at night, especially in winter and when the weather is poor, they are much more likely to be kept in even if concerns about their physical health are less than serious. A child in a similar state of health, but living locally will be much more likely to be sent home. If that child's health deteriorates overnight, it is generally quite easy for them to come back to the hospital. For a child from a rural area coming back quickly is not an option. In these kinds of situations the child will often be "*…more likely to be admitted…. Just because if anything did go wrong overnight there's - it's so far for them to come back"* (KI07).

Other key informants agreed with one observing that:

> *They're more likely to get kept in there if they come from out of town because of, for that very reason. So they're more likely to keep them in for observation … because they don't want them driving back to Raetihi at night or three o'clock in the morning* [KI03].

There are other instances where children are kept in hospital overnight despite their health condition being less than serious. Young parents, in particular single parents with apparently little family support, and those living in the most deprived areas in the region will sometimes be admitted for "social" reasons. If a parent in this situation also appears to lack confidence in their ability to care for their ill child, that child may be kept in if there is the space to allow this:

> *People … from low socio economic groups …often have a lower threshold for admitting* [their child] *because we're more concerned about their ability to access services again. They might not have a car, they might not have a phone or we might just be concerned that they - a lot of the younger parents - may not have the experience or the family back-up to help support them and make the right decisions…. some of it may be due to the excess smoking among Māori parents making* [the child] *more prone to respiratory infections…and also poor housing, poor heating* [KI07).

This view was echoed by other key informants one of whom observed that:

> *We have a lot of young parents in this town. Young parents means inexperienced parents, means poor parents. Young, poor, equals inexperienced equals ED and then all those other social issues come out and mother is feeding the baby Coca Cola at two years of age or whatever* [KI03].

This same key informant however, went on to identify that it is easy for clinicians to "judge" young parents sometimes assuming that they have little interest in the welfare of their child when in fact other factors also need to be taken into consideration. For example:

> *… some mothers appear quite indifferent. A lot of young mothers will spend all their time on their phone texting their whānau. "I'm in hospital, this is a big deal". It doesn't look good when a doctor comes in to talk to you and you're a 17 year old mum on your phone while he's trying to tell you "we're very concerned about your child". And she's freaking out. Doesn't wanna make eye contact and she wants her whānau to know so they can come down and awhi her 'cos she's freaking out cos she is in a strange alien environment… Cos just cos they're on their phone doesn't mean that they're not attached* [KI03].

B. Human services systems and processes and the ways they are funded

At a whole of government level, the way services are structured and funded does not always position them well to best meet the needs of their communities. For example, current arrangements may mean that whānau come to an organisation for support but find that this is limited to whatever programmes or services that organisation has contracts for. The ways narrow contracting can negatively impact on getting support to the places where it is most needed was highlighted by some study participants with one observing that:

> *We're doing integrated pathways in care and one of the nurses said…" if someone comes in under six years old who would see them?" And they said "I don't know. We wouldn't see them". And I thought like "why wouldn't you see them"? And everyone says "because we haven't got the contract" you know? So I think the funding bundles need to be looked at as well….Because funding should go across with the patient. There is a bit of a risk with that but I think, but I definitely think that funding needs to be looked at* (KI01).

A degree of freedom and flexibility in contracting and accountability lines is necessary so that organisations can work with whānau to assist them to articulate, and then meet, whatever goals or needs the whānau has.

Deconstructing current service provision relationships and implementing new models of contracting for services, requires government agencies to agree to innovative ways of working with whānau. Placing whānau at the centre of the work, instead of contracts and "job descriptions" would drive the type of service a whānau member might receive. The complex unbundling of current contracting and service provision system would go some way towards designing services to better match need. As one key informant explained:

> ***…****government agencies have created the fragmentation and to work holistically they're going to have to make some - or be brave enough to look at - contracts and what outcomes they want from a community perspective and then realign some of the cross-agency work to meet those common objectives and outcomes* (EI04).

At the systems and processes level, lack of information sharing within and across services can undermine preventative ASH interventions. Working in isolation, or within silos instead of across sectors, may mean only seeing part of the picture. A key informant suggested that working across sectors would be better for all concerned noting, for example, that:

> *if the social services were brought in to the conversation sooner then some of the health outcomes may be better for people…. it shouldn't be exclusively a health conversation"* (EI03).

Within the health services, patient information is only sometimes shared between primary (eg GPs, practice nurses) and secondary care (eg care given by a medical specialist and / or in a hospital). If a child goes to the Emergency Department (ED), health workers may only know a child's primary health history based on what they are told by whānau. That health history may or may not be accurate for whatever reason. An unclear primary health history may influence care given at secondary level and in turn mean being admitted to hospital when that could have been avoided.

C. Secondary health

At secondary care level, in common with other levels of the health service, the attitudes and approach of health care workers were seen as being critical to supporting whānau to make best use of health information and services. A survey respondent commented however, that "*when parents present at secondary care the environment can seem hostile*" which immediately creates a potential barrier

Successfully relaying health condition management information was also highlighted as being a challenging area for secondary care. Although one key informant asserted that "*a lot of our staff are getting better at breaking down things"* (KI04) explaining health issues and treatments to whānau in more accessible ways it is clear that issues remain given the observations of other key informants and survey respondents. Despite improvements being made, even the key informant cited above conceded that *"some of our staff still talk in medical terms to our families and they wouldn't have a clue what's going on"* (KI04). Compounding this, information was not necessarily being provided in ways which were culturally relevant or appropriate.

Even when whānau are given adequate health information however, their circumstances in the secondary care setting can mean that that information is not particularly useful at the time it is relayed. As one key informant observed:

> E*ven just remembering that thing that you were told at 11 o'clock at night and the two year old was screaming and the one year old was screaming and the three year old had asthma. You know? Who can blame the family for not remembering everything they were told?* (KI06).

Providing follow up health condition management advice and support after discharge becomes particularly important in these situations:

> *Somebody ideally needs to be going and reinforcing and explaining, you know, once all the fuss has died down and the dust has settled. And reminding them even though the asthma has gone away now, because it was two weeks ago, they still actually need to be taking that orange inhaler* (KI06).

Some study participants observed that discharges from secondary services did not always reflect understanding and knowledge of what is available by way of support in the communities whānau were returning to. It was therefore suggested that:

> *…health professionals that are involved with that age group…* [need to] *have a good knowledge of their community for those families that might need that extra support and not assuming that they just know where they should go. I mean, they sometimes don't even know what they should do let alone where would I go to get help for it* (KI02)

Primary health (GP / practice nurse) services

At primary care level a myriad of factors were thought to contribute to our high ASH 0-4 years. These included the negative "culture" of some primary care practices and difficulty accessing others.

Key informants and survey respondents noted that the "culture" of some practices could be off-putting for whānau. Negative attitudes of frontline staff were a key element of practice cultures considered to be less than welcoming. Several key informants had themselves experienced the negative attitudes of front line staff with one observing that: "*I know when I go myself, call a GP, sometimes the reception staff are so rude"* (KI01). Another commented that a negative GP practice culture can accommodate the "*playing out of discriminatory behaviours"* (EI03) by frontline staff such as receptionists:

> *…that are about racism….the culture of practice is very off putting to people with high health need and… it's off putting to many Māori* [EI03].

Dealing with frontline staff and being able to secure an appointment through this channel can be challenging for some whānau. There were instances described which involved having to overcome barriers to securing an appointment, or advice, including getting through to a practice by telephone in the first place. It was apparently not uncommon for telephones to go unanswered or for responses to messages left on answerphones to be delayed, sometimes by up to "*four or five hours"* (KI03).

Even if a practice was able to be contacted successfully appointments were not always readily available. One key informant, for example, commented that it was not unusual for whānau seeking appointments to be told:

> *…we can't see you until three days' time. So …appointments are quite hard to get. If you say they're urgent you might be triaged by a nurse who will then say whether or not you can see a GP that day (KI03).*

Unfortunately, there can be a considerable gap between being triaged and seeing a GP. For some whānau this creates extra barriers that they lack the resources to be able to easily overcome. For example,

> *… a lot of people haven't got the petrol or the capacity to get in and out twice. Or even wait around for that long….there can be a lot of waiting around in between and you know, people can't always come in at 10.30am to see a nurse and then come back at 2.30pm to see the doctor….and sometimes you've got more kids, more than one kid home sick. Just makes it too hard….If you're getting a lift from your aunty, she might not wanna come back…* (KI03).

Lack of continuity of care also presents challenges for some whānau at primary care level. Dealing with a different clinician at each appointment makes it difficult to establish relationships and develop a sound knowledge of the patient's health history.

Another frequently cited ASH contributor was caregiver lack of knowledge and understanding of how to manage their child's health issues or lack of health "literacy". At primary care level there may be insufficient time or other resources to support the development of whānau health literacy. "Time poor" primary care clinicians may be in too much of a hurry to be able to clearly explain health issues and treatment management plans to whānau. A key informant described situations where clinicians may provide explanations but do not pitch these appropriately for their audience resulting in caregivers:

> *…not necessarily understanding the information and going "yes, yes, yes". Like they don't want to appear silly so just agreeing what they do know. But they go away and didn't have a clue what was going on there* (KI04).

Compounding these kinds of situations, informants suggested that the wider Māori and community health workforce itself may not always be informed enough to be able to help whānau improve health literacy with respect to managing a particular condition.

Simply offering caregivers written information about a health condition and its management, with or without verbal explanation, is often not enough. Such information may not necessarily be a good match with a caregiver's cultural needs, level of general literacy or knowledge gaps. As one study key informant observed:

> *It's not always a written word or written information that's going* [to get the message across successfully]*. You can give out pamphlets until the cows come home but that doesn't mean that they're going to understand it* (KI02).

Whānau

Against seemingly almost overwhelming odds, most Whanganui whānau and families are managing their lives and keeping their children well. Where this is not the case, limited whānau health "literacy" was frequently cited as a factor contributing to ASH rates. Even when health workers have adequately explained a health issue and treatment plan this may not be enough.

Caregivers dealing with many demands on their ability to cope, little support and few resources may still be less likely to do the things they need to do to protect their child's health. They may be more likely to not notice, recognise or have time to deal with, a child's health needs until these become serious and need to be treated in hospital. In the words of one key informant:

> *Sometimes other things in their lives might be a priority. I think generally parents …care about their children but if they've got other factors that are socially impacting on their life those things can often get in the way and, and perhaps they just delay seeking, you know, help earlier for their child and it ends up being, becoming perhaps an acute issue…. if you've got to get to work, if you've got a job, if you're a parent that's working and you've got to go to work, you know, you've got to get money to feed your children so that's another factor as well, you know?* (KI04).

In a similar vein, another key informant asserted that:

> *…some of these families* [haven't] *got anything. Haven't got the skills, they haven't got the money, they haven't got the means to actually look after themselves in a way that we, you know, we would expect in our country* (KI18).

In some instances it was observed that:

> *… there is just clear dysfunction…. there's some violence and abuse that's impacting on the ability for the mum to just even function daily….there are a lot of social factors that impact on perhaps why parents delay seeking help earlier. And some of those factors can be around alcohol and drug* (KI04).

Other key informants and survey respondents similarly made reference to the impact of:

> *…a very high rate of domestic violence. And a lot of these women feel unable to get out of that relationship and so that's all the stuff that impacts on dysfunctional families…. drugs and alcohol… Drugs, alcohol and family violence are probably the big three* (KI05).

Alongside this, lack of support for whānau, poor "*parenting styles and relationships"* (KI12) contribute to dysfunction. One key informant suggested that the apparent common lack of parenting skill suggested that "*parenting courses for everybody should be compulsory"* (KI07) as one way of addressing this.

In summary, Whanganui's ASH 0-4 years rates continue to be a matter of concern. This is despite the facts that the rates are trending downwards and the gap between Māori and non-Māori children appears to be progressively closing suggesting that some gains are being made. The drivers of ASH 0-4 years are complex and inter-related moving well beyond simply primary health activity as the above discussion has highlighted. The study has identified that there are equally a number of promising avenues available which may lead to gains continuing to be made in reducing our ASH rates.

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