# Quality Accounts 2017

**PATIENT SAFETY &**
**QUALITY IMPROVEMENT**
**DIRECTORATE**

*A Healthier Northland*
*He Hauora Mo Te Tai Tokerau*

NORTHLAND DISTRICT HEALTH BOARD
*Te Poari Hauora Ā Rohe O Te Tai Tokerau*

Sluice Room

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WATER IS THE BEST DRINK

# Foreword

Kia ora, welcome to Northland DHB's Quality Accounts for the year to 30 June 2017. It gives you a snapshot of how we support the health needs of the people in our community.

These Quality Accounts are an annual report about new quality initiatives we introduce to help improve patient safety and care.

We aim to deliver a first-class service which is patient and whānau focused and provides the right care and support when and where it is needed.

# Statement of Endorsement

Northland District Health Board is proud of the work our staff are doing to ensure safe patient care is provided and the Northland community is supported to improve health and wellbeing.

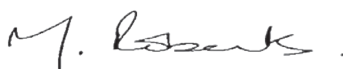
Northland DHB 2017 Quality Accounts provide us with an opportunity to share some of the excellent initiatives delivered by our staff.

The initiatives are many and varied. Some involve ensuring a partnership between patient, whānau and clinical staff to enable informed decisions regarding healthcare. The partnership is woven across many areas. This ensures decisions for planning of care in hospital, for on discharge and including advanced care planning are made to support the decisions of the patient.

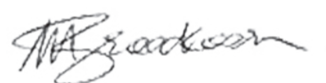
We are very proud of the improvements made to services for Northland. Patient and whānau experience and safety has been a priority over the past year. Services have expanded to provide care closer to home, where patients and whānau are able to access services with increased ease.

Supporting community providers to direct services where they are needed within a community is a large step forward in addressing inequities in care. These initiatives are a result of the dedication of Northland DHB staff and our primary care colleagues in their continued commitment to improve the quality and experience for Northlanders.

**Dr Nick Chamberlain**
Chief Executive



**Dr Mike Roberts**
Chief Medical Officer



**Margareth Broodkoorn**
Director of Nursing & Midwifery

# About Northland DHB

## Who are we and what we do

Northland DHB is categorised as a Crown Agent under section 7 of the Crown Entities Act 2004.

Responsible for providing or funding the provision of health and disability services for the people of Northland, the DHB covers a large geographical area from Te Hana in the south to Cape Reinga in the north.

The DHB employs 2,929 staff. Acute services are provided through the DHB's four hospitals, based at Whangarei, Dargaville, Kawakawa and Kaitaia, with elective surgery performed at Whangarei and Kaitaia. These services are supplemented by a network of community-based, outpatient and mental health services, a range of allied health services and a public and population health unit.

Some specialist services, like radiation treatment and neurology services are provided from Auckland or through visiting specialists travelling to Northland.

The DHB allocates funding across the health sector in Northland, contracting with a range of community-based service providers such as primary health organisations (PHOs), dentists, pharmacies and other non-government organisations.

## Our Health Profile

### Population

Northland's population in 2017 was 175,220, representing 3.6 percent of New Zealand's total population. About half live within the Whangarei District Council area, 37 percent within the Far North District Council area and 13 percent within the Kaipara District Council area.

### Māori

Māori experience low levels of health status across a range of health and socio-economic statistics. They comprise 34.9 percent of Northland's total population, but 54 percent of the child and youth population, a key group for achieving long-term gains. Māori experience early onset of long-term conditions like cardiovascular disease and diabetes, presenting to hospital services on average about 13 years younger than non-Māori.

### Child and Youth

The child and youth proportion of Northland's population is projected to decline over the coming years from 32.5 percent in 2017 to 30.6 percent in 2027, but remains a priority because healthy children make for healthy adults and because children are more vulnerable than adults.

The deprivation index, which divides New Zealanders into ten groups according to their deprivation scores, placed 80 percent of the population on the most deprived half of the index.

### Older People

Our ageing population is placing significant demands on health services provided specifically for older people (residential care, home and community support services, day care). It also increases the prevalence of long-term conditions which become more common with age.

### Long-Term Conditions

About three-quarters of deaths in Northland are from cardiovascular disease (heart disease and stroke) or cancer (the most common sites are trachea-bronchus-lung, colorectal, prostate and breast).

Twenty percent of adult Northlanders have been told they have high blood pressure and 12 percent that they have high cholesterol, both known risk factors for cardiovascular disease.

While diabetes is not a major killer in itself, it is a primary cause of heart disease. A great deal of unnecessary illness and hospitalisation is related to poor management of diabetes.

### Oral Health

Northland's five-year-olds have repeatedly had the country's highest average score of damaged (decayed, missing or filled) teeth and one of the lowest percentages of teeth without tooth decay (45 percent compared with the national 41 percent). Data for adolescent oral health is limited, but it suggests a similar, if not worse, picture.

### Lifestyle Behaviours

The way people live their lives and the behaviours they exhibit have an enormous effect on health status. There are a wide range of influences, but key ones are smoking, diet, alcohol and other drugs, and lack of physical activity.

### Social Influences

Many of the causes of ill health rest with social and economic factors such as housing, education and economic prosperity. The health sector cannot affect these directly, but as a district health board we work collaboratively with other Government and local body organisations to achieve a healthier Northland.

# What are we trying to achieve?

## Our Vision is of "A Healthier Northland, He Hauora Mo Te Tai Tokerau".

We aim to achieve this by working together in partnership under the Treaty of Waitangi to:

- Improve population health and reduce inequities
- Improve the patient experience
- Live within our means.

## We endeavour to work consistently according to our Values:

**People First, Taangata i te tuatahi** – People are central to all that we do.

**Respect, Whakaute (tuku mana)** – We treat others as we would like to be treated.

**Caring, Manaaki** – We nurture those around us, and treat all with dignity and compassion.

**Communication, Whakawhitiwhiti korero** – We communicate openly, safely and with respect to promote clear understanding.

**Excellence, Taumata teitei (hiranga)** – Our attitude of excellence inspires success, competence, confidence and innovation.

Gemma Watts. front left, recipient of the Health Quality and Safety Commission's Open For Leadership Award for June 2017.

# Where the Money Goes

Whangarei, Dargaville, Bay of Islands and Kaitaia Hospitals (surgical and medical services, emergency departments, imaging, laboratories, maternity), public health.

Primary Health (general practitioners, community dental services, radiology)

Health of older people (including residential care, rehabilitation)

Mental health services

Māori health services

Community pharmacies

Community laboratory services

Inter-district flows (publicly-funded health services paid to other district health boards and others for services provided to Northland patients)

**Total** $607m

# Our Services

**There are currently 172 GPs and 175 practice nurses across 37 general practices providing primary healthcare to Northlanders enrolled with Northland PHOs, and non-enrolled and non-resident patients.**

Northland DHB has 280 contracts with 126 non-government organisations (NGOs) including Māori health providers and Whānau Ora collectives that provide a range of public health, primary healthcare and community services across Northland.

Figure 1

Northland PHOs

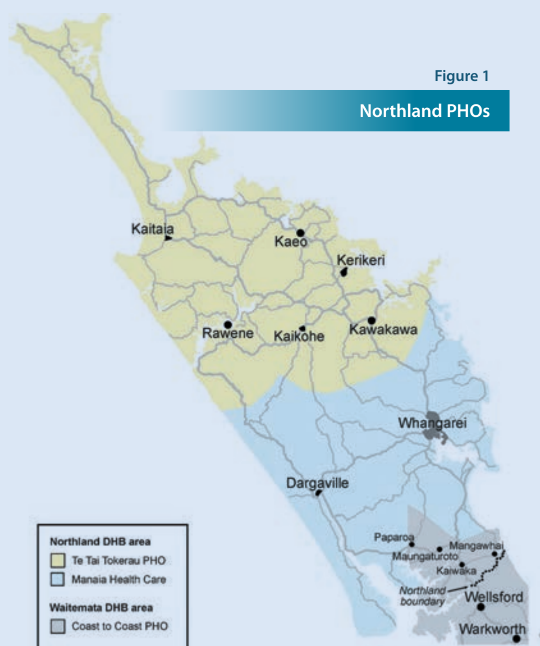



Figure 2

Māori NGOs

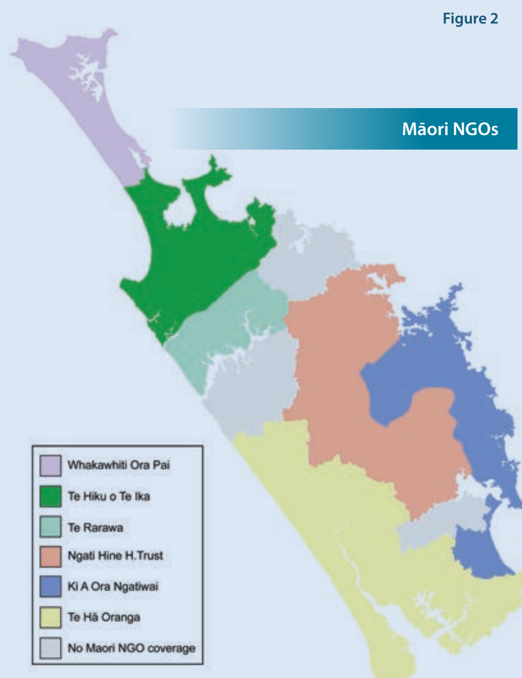



Figure 3

Northland Hospitals

Figure 4

Travel Distances

# National Health Target Results

| Output measure | Ethnicity | 2015/16 baseline from 2016/17 SPE | | 2015/16 result | 2016/17 target | 2016/17 result | Achievement |
|---|---|---|---|---|---|---|---|
| | | Period | Data | | | | |
| Patients with an emergency department length of stay of less than 6 hours | Total<br>Māori<br>Non-Māori | 2015/16 to Q3 | 92.0%<br>93.0%<br>91.3% | 92.0%<br>93.0%<br>91.3% | 95% | 92.7%<br>93.8%<br>92.1% | [1] |
| Increase in elective service discharges | Total<br>Māori<br>Non-Māori | 2015/16 | 10,123<br>3,462<br>6,661 | 10,123<br>3,462<br>6,661 | 8,575<br>2,924<br>5,626 | 10,556<br>2,341<br>8,225 | [2] |
| % of patients who receive their first cancer treatment (or other management) within 62 days referred urgently with a high suspicion of cancer and a need to be seen within two weeks | Total<br>Māori<br>Non-Māori | 2015/16 | 76.1%<br>70.3%<br>76.9% | 73.9%<br>65.4%<br>75.6% | 85.0% | 81.3%<br>75.0%<br>83.2% | [3] |
| % of 8-month-olds who are fully immunised | Total<br>Māori<br>Non-Māori | 2015/16 to Q3 | 89.4%<br>90.4%<br>88.1% | 89%<br>90%<br>88% | 95% | 88.8%<br>89.9%<br>87.3% | [4] |
| % of PHO enrolled patients who smoke who have been offered help to quit by a health care practitioner in the last 15 months | Total [5] | 2015/16 | 87.3% | [6] | 90% | 82.1% | [7] |
| % of pregnant women who identify as smokers upon registration with a DHB-employed midwife or Lead Maternity Carer are offered brief advice and support to quit smoking | Total<br>Māori<br>Non-Māori | 2015/16 | 94.1%<br>94.9%<br>91.9% | [8] | 90% | 91.3%<br>94.4%<br>87.7% | |
| By Dec 2017, 95 percent of obese children identified in the Before School Check programme will be offered a referral to a health professional for clinical assessment and family based nutrition, activity and lifestyle interventions. | Total<br>Māori<br>Non-Māori | n/a [9] | n/a | [see footnote 9] | 95% | 78.4%<br>76.9%<br>81.5% | [10] |

[1] Performance constantly hovers two or three percent under target. Many initiatives (patient flow analysis, developing the medical workforce, nurse-led acute patient flow forum, among many others) have been implemented to streamline flows and reduce waiting times, but these enable us just to keep up with the ever-increasing demands on ED. Consistent achievement of target is likely only when the new ED and Medical Assessment Unit is established as part of the Whangarei Hospital site redevelopment, though this won't be for some years yet.

[2] MoH does not require electives to be reported by ethnicity so the ethnic split was determined from an internally generated data query. The total elective operations from the query didn't quite match the MoH data, so the Māori/ non-Māori split was determined from the query data and applied to the MoH number.

[3] Performance increased from Q1 to Q3 (75.8% to 82.7%) but fell back in Q4. The measure covers numerous types of cancer, and the treatment pathways of each need to be addressed individually. Most (head and neck, lung, skin, haematology [blood], upper GI and breast) are above target. Attention recently has shifted to gynaecological cancers, especially the diagnostic phase.

[4] Performance has constantly been four or five percent below target, largely because more than 10% of parents opt-off the immunisation register or decline immunisation for their children (the second highest of any DHB). NDHB continues to circulate positive messages about immunisation.

[5] Results on this Health Target are not made available publicly by ethnicity.

[6] Not reported in last year's Annual Report. Result was 87.3% (this Health Target is not reported by ethnicity).

[7] Since 2015/16 performance on this target has steadily declined. PHO performance is being addressed in the new 2017/18 tobacco control agreement and improvement is expected by 2017/18 Q2. Initiatives include 'league tables' so practices can compare performance, training in individual general practices (35 were covered during Q4), and increased contact between PHO-employed practice facilitators and practice staff.

[8] Not reported in last year's Annual Report. Results were: total 94.1%, Maori 94.9%, non-Maori 91.9%.

[9] Target was introduced in 2016/17.

[10] Although the annual average was more than 5% under target, this measure was newly introduced in 2016/17 and rapid progress was made through the year to achieve target in Q4: Q1 70.1%, Q2 72.7%, Q3 82.9%, Q4 94.7%.

# Adverse Events Report 2016-2017

## Background

Each district health board is responsible for releasing an annual summary of adverse events. The report emphasises areas for improvement and ways in which preventable harm can be reduced in the future. The following points are important to understand when reviewing the information in this report.

- Adverse events (previously known as serious adverse events, and serious and sentinel events) are incidents which have generally resulted in harm to patients.
- The title has changed to signal a new direction in the programme, with a greater emphasis on learning from all events – not only the serious adverse events, but also near misses – as learning about these events can be as powerful.
- The emphasis is on improvement and reducing preventable harm in the future.

## Northland District Health Board reports 21 Adverse Events for 2016-2017:

| Main Summary | Findings | Progress on recommendations |
|---|---|---|
| **Falls with Harm**<br>Nine patients, aged 50 to 93, experienced falls with harm.<br>Harm included a dislocation, cerebral bleeds and limb fractures. | Four of the patients had been identified as being at high risk of a fall. All had been risk assessed, and plans had been completed to minimise their risk of falling.<br>Of the other five patients, four had yet to be risk assessed. The other had not been identified as high risk. | All patient falls with harm are reviewed by a specialist team which focuses on falls prevention.<br>The case reviews contribute to hospital policies which aim to minimise the risk of patient falls. |
| **Delayed follow up** | Delayed follow up post banding of haemorrhoids resulted in late discovery of a rectal tumour. | Increased involvement of clinicians prioritising outpatient follow up appointments introduced. |
| **Delayed recognition of patient deterioration** | Rapid deterioration was poorly communicated to senior medical staff resulting in a delay in appropriate treatment. | Standardisation of ward round communication to include review of vital signs. |
| **Patient death post discharge** | Patient discharged from hospital following motor vehicle accident, patient died post discharge. | Review in progress. |
| **Unnecessary surgery** | Patient underwent surgery for nerve root compression. A lung tumour was missed on the preoperative scan. | Referred for individual performance review. |
| **Extravasation burn** | Formation of blister at cannula site post antibiotic administration. Patient required plastic surgery referral. | Review method of administration of intravenous antibiotics. |
| **Delayed diagnosis** | Medical staff unaware radiology report available with significant unexpected findings, resulting in a significant delay in treatment. | Alerting system developed for significant unexpected findings radiological. |
| **Unrecognised patient deterioration** | Delayed recognition of sepsis along with unclear communication regarding appropriate interventions. | Development of a sepsis pathway and an electronic admission to discharge planner with clear documentation regarding appropriate levels of care. |

# Adverse Events Report 2016-2017 (cont.)

| Main Summary | Findings | Progress on recommendations |
|---|---|---|
| **Failure to monitor during labour** | Delayed transfer following abnormal cardiotocography. | Introduction of leadership roles within the area; standardising the staffing model. |
| **Delayed follow up** | Delayed follow up post ultrasound scan, resulting in delayed diagnosis of liver mass. | System upgrade with inbuilt safety net processes. |
| **Cerebrospinal fluid leak** | Cerebrospinal fluid loss post spinal decompression resulting in subarachnoid haemorrhage. | Change in clinical practice regarding the use of suction drains. |
| **Medication error** | Antibiotics prescribed and administered to patient with known allergy. Severe allergic reaction resulted. | Raising awareness and processes regarding allergy identification. |
| **Delayed follow up** | Delayed follow up for treatment of macular degeneration resulting in loss of sight. | Standardised processes for arranging follow up appointments |

# Learning from our mistakes

Northland DHB worked with Wally Pugh, one of the patients who was harmed during the year, to produce a medication safety video in order for staff to learn from the mistake and to reinforce how important it is to ensure that medication errors do not occur.

During the period of the RMO strike in January 2017 the 74 year old came into Whangarei Hospital and ended up facing an allergic reaction which could have been life-threatening.

Wally's story began in October 2016. Admitted to the ED because of infective exacerbation bronchiectasis, Wally was given the antibiotic Ciprofloxacin intravenously. Wally, however, has Stevens - Johnson syndrome, a syndrome triggered by more than 100 drugs which causes mucous membranes to dry up and skin to blister externally and internally.

Ciprofloxacin gave Wally a rash in that October visit and his medical team stopped his IV antibiotics immediately and updated his medication history records acknowledging this reaction.

Readmitted once again for infective exacerbation bronchiectasis in January 2017, Wally had his medic alert bracelet replaced with a red Whangarei Hospital bracelet and his medical charts/records were completed with essential up to date information regarding Wally's allergies.

A few days into this admission Wally's antibiotic therapy was changed to include ciprofloxacin tablets, this was done with a failure by the prescribing team to appreciate Wally's allergies and medical history. Over the next couple of days Wally's skin began to itch and rash and on review of Wally's treatment the error was discovered. By this time Wally had received five doses of Ciprofloxacin by four different nurses. What began as an itch had now developed into blisters affecting 10 to 15 percent of Wally's skin.

"There was potential to develop a life-ending infection with so much skin loss" says medication safety/quality pharmacist Bryce Kivell, who was part of the investigative team regarding Wally's experience.

Wally was shifted to ICU and later transferred to the Burns Unit at Middlemore Hospital for further treatment. During his recovery, Northland DHB began the process of apologising to Wally,

identifying how the failures had happened, and gathering data to try and prevent this happening to other patients.

Particularly heart-breaking was the fact that this was Wally's third case of Stevens - Johnson syndrome triggered by medication. In 1994 the medication Augmentin caused a similar reaction resulting in an admission to Lower Hutt's burns unit.

"Wally knows allergies very well and he knows that his history is well documented with his GP and within our hospital records; understandably Wally was annoyed by this latest adverse event. During my initial investigative meeting with Wally, he took my hand, showed me his bracelet, and he said 'How could this happen?" Bryce recalls.

Medicines Committee Chair Dr Alan Davis says ours is a learning organisation dedicated to improving our patients' experiences after mistakes happen. "We strive to ensure that everything good or bad that happens contributes to our knowledge," Alan says. Also, because the consumer and whānau are deeply important in healthcare and they know their medications best, "We need them to be involved in the safety process."

While we can never be perfect, Alan says, a change in culture amongst health professionals in the 21st century should encourage better communication between patients, nurses and doctors.

"The times in the past when people wouldn't dare ask a question have changed. It's now far more acceptable… the hierarchical system has broken down to an extent. People at my level need to be not offended when people ask us questions. Every question is a good question."

"Don't assume that what has been done for a patient is correct," Bryce says.

"Be aware of allergies and alerts and always remember to check, ask, then check again."

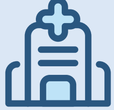
You can view the video at this link.

Wally, centre, with cousin Kathleen (left) and niece Willmana

# Each Day in Northland

On average, each day in Northland there are:

Emergency Department presentations



133

Theatre events

45

Mental health community visits

492

Immunisations for 8-month-olds

8

Inpatient discharges

108

Radiology exams

264

General practice consultations

1,924

Breast screens

40

Outpatient attendances

2,087

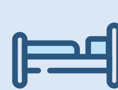
Lab test results – Hospital

3,566

Prescription items processed by pharmacies

7,701

Subsidised bed days in aged residential care



932

Outpatient missed appointments

72

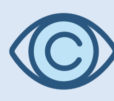
Lab test results – Community

3,797

Community visits by allied health services

87

People assessed by hospice services nursing teams



17

Northland patients discharged by other DHBs

15

Babies born in hospital

5

District nursing visits

196

Hours of home-based support services for older people

1,697

Chemotherapy attendances

16

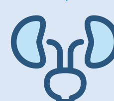
Deaths in Northland

5

Oral health visits in primary schools

163

Renal dialysis



54

Mental health hospital admissions

3

Immunisations for 2-year-olds

8

# Patient Safety Awareness Week 2016

## Patient Safety Awareness Week
## How are we doing?

Decrease in VTE risk assessments

Hospital acquired VTE

PATIENT SAFETY & QUALITY IMPROVEMENT DIRECTORATE

*A Healthier Northland*
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NORTHLAND DISTRICT HEALTH BOARD
Te Poari Hauora Ā Rohe O Te Tai Tokerau

## Patient Safety Awareness Week
## How are we doing?

Patient experience feedback on respect & dignity shown by staff

Patient experience feedback on our communication to them

PATIENT SAFETY & QUALITY IMPROVEMENT DIRECTORATE

*A Healthier Northland*
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# Improving Patient and Whānau Experience

## Advanced Care Planning – the Waka model

Advanced care planning (ACP) is a process of discussion and shared planning for an individual's future health and end-of-life care. It involves the patient, their whānau and healthcare team working in partnership. ACP aims to ensure patients feel better informed about future care and treatment choices; and healthcare workers are informed about patients' care preferences.

The uptake of ACP is higher in European-based populations than in 'collectivist cultures' such as indigenous and ethnic minority groups of New Zealand (Frey, 2014). Tasked by the national ACP Cooperative to develop a culturally appropriate resource which might meet the aspirations of Māori, Northland DHB has created 'He Waka Kakarauri'.

He Waka Kakarauri is an engagement model based on a waka analogy. This model is designed to help patients, their whānau and healthcare workers engage in future health and end-of-life care conversations that are tika (right), pono (true) and aroha (shared with love), and are held at a time and in an environment that is culturally appropriate to Māori.

"Māori do death well, but not the dying." This was a key message highlighted during consultation on the topic. When a tangi (funeral) occurs, the community automatically kicks into action to ensure all aspects are organised. But in the hours, days or months beforehand Māori are not always confident about discussing and sharing their wishes and preferences regarding their healthcare and treatment.

Conversations on this topic are not easy – they require considerable skill and sensitivity. Māori world view place whānau at the centre of life. So being able to support whānau to have these conversations to prepare and plan for future needs is beneficial to the entire whānau and wider community. To increase awareness and uptake of ACP amongst Māori, the Northland Māori ACP working group hosted a series of co-design workshops with health professionals, community members, patients and whānau.

The outcome of these workshops and years of planning was the development of He Waka Kakarauri: a model for engaging Māori in ACP conversations. Named and endorsed by the DHB's Kaunihera Kaumātua, the word "Kakarauri" can refer to both dawn and dusk.

Expanding on the literal translation, this can mean the ending of darkness and beginning of light, or vice versa; and is relevant to the nature of ACP, which encourages people to discuss and share their wishes.

He Waka Kakarauri comprises several components that reflect the parts of a waka; each with an important role in ACP for Māori:

- Kaihautu (the leader) – representing ko au (me)
- Kaihoe (paddlers) – representing the whānaungatanga (relationships)
- Te Hiwi (hull of the waka) – representing tinana (body)
- Te Tau Ihu (prow) – representing wairua (spirituality)
- Ta Tau Rapa (stern) – representing hinengaro (mind)
- Moana/Awa/Puna (the ocean, river, or spring) – representing the person's ACP journey.

Resources to support the model include a poster that can be used as a focal point when introducing ACP and a guide, Rarangi Tohutohu o te Waka Kakarauri, which contains a tear-out resource the patient can fill with thoughts and preferences about their healthcare.

He Waka Kakarauri was launched in April 2016, coinciding with the national Conversations that Count Day campaign. To mark the occasion, Mātau Ned Peita carved a waka and gifted it to the ACP programme. In referring to it he has commented:

It's a means of communication. For a long time Māori have struggled with communicating and we're hoping that this tool will be a great model to get them speaking to one another and making it easier for the time of bad health.

## Future focus

As it is still the early stages of piloting the resources, benefits to the community and healthcare workforce are yet to be quantified. It is expected that this model will help improve communication and care planning with Māori patients and whānau.

**Reference**


*Frey [R]. 2014.*

Mātau Ned Peita with the waka he has carved.


*"It's a means of communication. For a long time Māori have struggled with communicating and we're hoping that this tool will be a great model to get them speaking to one another and making it easier for the time of bad health."*

## Adverse Events Co-design

When patient safety is seriously compromised at Northland DHB, the Reportable Events Committee becomes involved. The group is led by Dr Jenny Walker, Associate Chief Medical Officer and Renal Physician. Other members of the team comprise senior doctors and nurses as well as management staff.

The aim of the Reportable Events Committee is to maintain the quality of the safety reviews, ensuring they are standardised and follow a method of investigation that looks at all aspects of the patient pathway. The Reportable Events Committee ensures that the quality of the recommendations provided by the investigative team meet our own internal standard.

The Reportable Events Committee embarked on a project of co-design aiming to respectfully engage and support patients and whānau during the review of serious adverse events that had occurred within Northland DHB. Co-design is collaboration between service providers and users, whereby service recipients are involved in different stages of the process, including the planning, design, delivery and audit of a public service (Realpe & Wallace, 2010).

Despite our best efforts and intentions, serious adverse events can occur within health care. Northland DHB use these events as a rich source of learning; putting in and monitoring effective systems that will prevent reoccurrence of similar events in the future. This process has been successfully embedded within the organisation. However, it became clear that feedback to the patient and whānau and their voice within the process was missing.

Patients and whānau involved in serious adverse events that had occurred with Northland DHB were contacted and advised of the current process for reviewing such events. These consumers were asked for their story – letting us know what their needs and desires were during this experience. Feedback was clear. Patients and whānau were aware that the serious adverse event had occurred, and were spoken to by clinicians at the time of the event, but were missing the final piece of the puzzle – what had been done to prevent reoccurrence. Communication needed to improve to let those involved know what happened, and what was being done to prevent this type of event happening again to someone else.

As part of the serious adverse event review process a formal anonymous report is developed. This identifies what went wrong and what plans were put in place to prevent reoccurrence. Patients and whānau were asked if they would like to receive feedback from this review, and if so – what format would be most appropriate for them. Not all patients and whānau wanted this information, but all wanted the opportunity to make their own decision.

In conjunction with consumers, an information booklet was developed describing the serious adverse events process, and identifying key personnel who could be contacted for further information. The booklet was designed to be given or posted to patients and whānau along with a letter advising them a serious event review was taking place, and offering them the opportunity to provide their perspective.

On completion of the serious event review a second letter offers patients and whānau the opportunity to meet with the review team for feedback. A copy of the report is available if requested.

Fortunately serious adverse events do not occur frequently. But when they do it is important to the patient and whānau involved to have the opportunity to know what happened and what the organisation is going to do to prevent harm occurring to others.

The impact of serious adverse events can also have a significant impact on staff. Healthcare staff enter into the profession to help people; knowing that they have inadvertently been a part of a system that has resulted in patient harm can negatively impact on the staff involved. The next phase of this project is to ensure there are support mechanisms available for staff that have been negatively affected by a serious adverse event.

**Reference**

*Realpe, [A] Wallace [L, M] 2010. What is coproduction? The health foundation. Retrieved from* www.health.org.uk

*"Patients and whānau were aware that the serious adverse event had occurred, and were spoken to by clinicians at the time of the event, but were missing the final piece of the puzzle – what had been done to prevent reoccurrence."*

# Improving Patient and Whānau Experience

## Cancer and Blood Services

The Jim Carney Cancer Centre is home to Northland DHB's Blood and Cancer service. It opened in November 2014 and has been a huge support for patients and families who are dealing with cancer. The large, purpose-built centre and expanded team of medical staff with specialist cancer treatment skills enables Northlanders to have their treatment close to home.

Before opening the new centre Northland DHB's Cancer and Blood Service was a small unit located within Whangarei medical outpatients department with one Medical Oncologist and a visiting Haematologist (from Auckland DHB). With growing rates of cancer and limited capacity to provide services locally, many patients were forced to travel to Auckland for treatment.

The current centre is now more than twice the size of the original unit providing more privacy, multi-disciplinary meeting areas, designated areas for children's treatment and space for future expansion if required. Today the complement of staff includes:

- a third medical oncologist
- haematologist
- medical registrar
- visiting radiation oncologists
- clinical nurse specialists
- Māori/Pacific Island navigator
- Full-time social worker for cancer care
- onsite pharmacist and pharmacy technician
- admin support
- registered nurses.

Satellite clinics are held for Kaitaia-based patients and similar clinics will soon be available in Rawene. The outcome is that most patients can now receive care locally, which is a significant benefit to the community. Patient throughput in clinics has doubled since 2014 and the number of patients travelling to Auckland for treatment has reduced significantly.

As well as up-to-date facilities and a bolstered team, new models of care and continuous quality improvement activities are ongoing to improve patient safety and experiences.

## Examples include:

- A new electronic scheduling whiteboard – this has improved unit organisation and reduced drug wastage by providing accurate communication and data transfer between multidisciplinary team members, including pharmacy
- Set up of Telehealth in Kaitaia – this enables far north patients to attend pre chemotherapy assessment without leaving their local provider. Without this option patients would have to drive the four-hour return trip to Whangarei twice a week
- Implementation of anti-neoplastic drug administration course – a national medication competency course applying nursing standards and policies for safe handling and disposal of cytotoxic medication. All nurses have completed the required eight modules for competency
- Implementation of patient-led appointments – patients can choose what time of day suits them and how they prefer to be contacted
- Electronic roster scheduling – this system covers all clinic staff and shows availability of clinic space to meet workload demands
- Implementation of EviQ (Education Resources Online) – standardising treatment protocols, guidelines specific to medical oncology and haematology
- Review and redesign of clinic forms for treatment and clinic work flow
- Review of data integrity – identifying and standardising the format for data entry has enabled waiting lists to be visible and better aligned to reporting lines for medical oncology, haematology and radiology and this makes planning for capacity versus demand easier
- Process mapping of referral and service provision – identifying and removing bottlenecks in the systems, improving efficiencies and providing faster access to cancer treatment and management.

These are only a small selection of the improvement activities that the proactive team have put in place to benefit the patient and whānau journey and work towards the national target for faster cancer treatment.

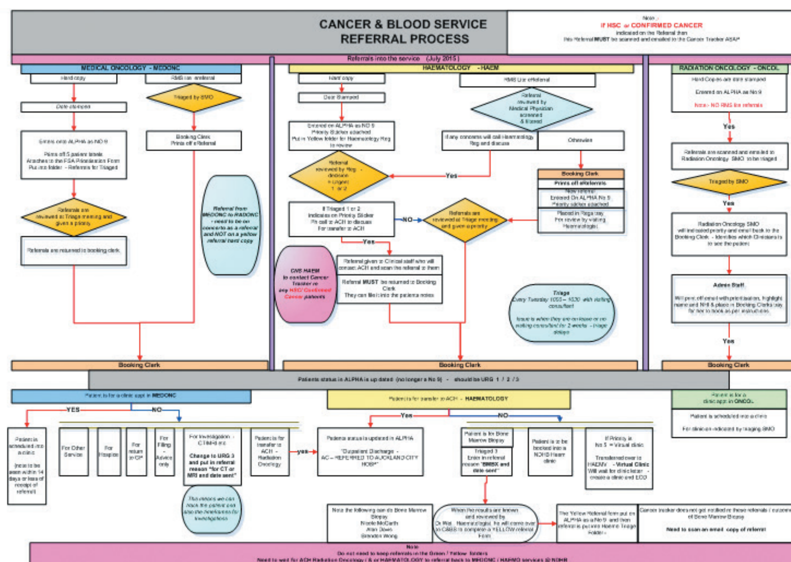



**Figure 1:** Map of blood and cancer service referral process

## Caring for ourselves

The re-launch of the Northland DHB values: Caring, Respect, People first, Excellence & Communication coincided with a period of low staff morale due to high workload fatigue, along with team and workplace environment changes. The timing was not ideal and it was anticipated that there would be some resistance to the information.

As part of the values re-launch, staff behaviours were observed. Low morale, general discontent and staff expressing a wish to leave the department were observed. There were also high levels of sick leave and high staff turnover. These were all strong indicators that stress and burnout existed within the working environment.

The effect of staff experiencing burnout had the potential to negatively affect the interactions nurses and support staff may have with patients and families.

Our target audience was the Post Anaesthetic Care Unit and Surgical Admission Unit nursing and support team staff. The initial idea was to bring in an expert facilitator to run the sessions. However, on receiving three quotes it was determined that this was not a viable option. Therefore, we chose to develop a workshop aimed specifically at our staffs' needs – introducing the concept of self-care and directing staff to the resources available.

The aim was not to appear to be an expert but to provide support and raise awareness on the need for self-care; introducing concepts that enable staff to recognise symptoms of stress, burnout, and compassion fatigue. The project aimed to provide a safe environment to discuss these concepts and encourage staff self-awareness that would lead to self-care. Providing knowledge of self-care strategies and encouraging team building and team support goes a long way to increasing morale.

A literature search was performed into stress and burnout amongst healthcare professionals through the hospital library. Internet resources were gathered, including TED talks and YouTube videos, and these were developed into an area-specific resource. Additional staff covered clinical roles to enable all staff to attend one of the four education sessions.

The staff were allocated study time and/or were paid to attend the session. The sessions were associated with the distribution of the organisational values information; it was compulsory to attend. This ensured that those people that may have been reluctant to attend would be reached, and attendance was 100 percent.

All nursing, administration, Health Care Assistance and pre assessment staff in the Post Anaesthetic Care Unit and Surgical Assessment Unit, including management, attended the sessions. The sessions were to be non-threatening, confidential and non-judgemental; this was verbally contracted at the beginning of each session. A stress management techniques booklet was compiled by the facilitators and provided to all staff, along with a self-assessment (professional quality of life measure PROQOL) which was research validated. Information on Employment Assistance Program (EAP), professional supervision and other relevant services was also provided. All resources were provided on the day and were subsequently available for all staff to access.

There were too many variables to effectively measure the success of the sessions, but written and verbal feedback from staff was 100 percent positive. Staff have shown further interest in attending the Mindfulness courses available at Northland DHB and we have been requested to provide a follow-up workshop.

Improvement in morale has been observed and the manager of the area has noticed an improvement with job satisfaction. Increased values-led behaviours are being displayed. An overview of the project was presented to the organisation's Clinical Nurse Educator and two departments have since used the resources for a re-contextualised version of the workshop.

It's really important to take time to recognise these facts, to support each other and to remember that to take good care of others we must take good care of ourselves. We are human after all!

## Future focus

As it is still the early stages of piloting the resources, benefits to the community and healthcare workforce are yet to be quantified. It is expected that this model will help improve communication and care planning with Māori patients and whānau.


*"It's really important to take time to recognise these facts, to support each other and to remember that to take good care of others we must take good care of ourselves. We are human after all!"*

# Improving Patient and Whānau Experience

## A Systems Approach to Keeping Patients Safe – patient & whānau involvement

### 15 Steps Challenge, co-design

Ward 15 at Whangarei Hospital had received a complaint from a family member stating 'you have our loved one locked away from us'. This was the catalyst for the team to develop a culture on the ward where patients and their whānau/families were active members of the patient's team.

The staff identified that a partnership model was required so that care provided to patients was driven and guided by the patient and their family. Staff recognised they needed to strengthen communication so that information was shared throughout the patient stay. Families needed to be given the opportunity to support and learn how to provide care for their family member throughout the admission, rather than at the end.

Alongside many smaller projects, three main projects were undertaken over a period of three years – patient co-design, 15 steps challenge, and Ward 15 values in action. Consequently patients and families are active members of the patient care team.

They are encouraged to stay on the ward and participate in hands-on care; carer training is completed throughout the patient stay rather than being put in place on the last two–three days before discharge; goal setting meetings include family members; and patients and families are actively welcomed on to the ward at anytime.

Co-design in action.

# Keeping Patients Safe

## Keeping Kids Safe

The Emergency Department (ED) is the 'front door' for many paediatric hospital encounters which makes it an important site for ensuring the safety of children.

In 2015 Whangarei ED re-introduced a Paediatric Injury Assessment Flowchart to support safe assessment of children. A baseline clinical audit showed that less than half of children presenting to ED were assessed using the flowchart. It was assumed that this low compliance was in part due to poor implementation of this assessment tool. Following the clinical audit new Ministry of Health Family Violence Guidelines were published recommending the use of a Child Protection Checklist (CPC) for all children under the age of 2 years presenting to the emergency department regardless of the presenting problem. Checklists have been shown to improve the quality and consistency of assessments of children. Analysis of NDHB child protection data showed a significant number of Reports of Concern were being made by ED staff for children under 5 years of age. On this basis a decision was made to extend the scope of the project out to all children under 5 presenting to ED (as well as any older children with a possible non-accidental injury).

A working group for this project was formed to ensure a collaborative approach between ED staff, the Paediatric Service and the Violence Intervention Programme to implementing a new Child Protection Checklist (CPC). The checklist was based on the MOH guidelines but also took into consideration feedback on content and formatting from clinical staff. This resulted in the current version of the CPC. Once the Child Protection Checklist was finalised the challenge was to implement this new checklist with a robust and sustained approach that supported all staff to accept responsibility for keeping children safe.

Monthly CPC audits continue to show low compliance. Analysis of audit results identified 2 key focuses for improvement:

- Ensuring the CPC is placed in the ED file for all children under 5yrs of age
- Ensuring clinicians complete the CPC during the ED visit.

**To date actions to address these two key focuses include:**

- Provision of education sessions to clerical, nursing and medical staff
- Continued collaboration between ED, Paediatrics and the VIP team
- Regular reminders to clerical staff and clinicians
- Continued monthly compliance auditing.

**Actions for continued improvement include:**

- Continue to develop the child protection expertise of the ED workforce using regular case-based education sessions.
- Include child protection processes and resources in orientation for new medical staff.
- Opportunistic education on site by VIP Coordinator.
- Expansion to District Hospital ED departments starting with Kaitaia hospital early 2018.
- Ongoing auditing and reporting of results via the ED Quality Meeting.
- Development of a brief guideline to support consistent processes by clerical staff including temps.

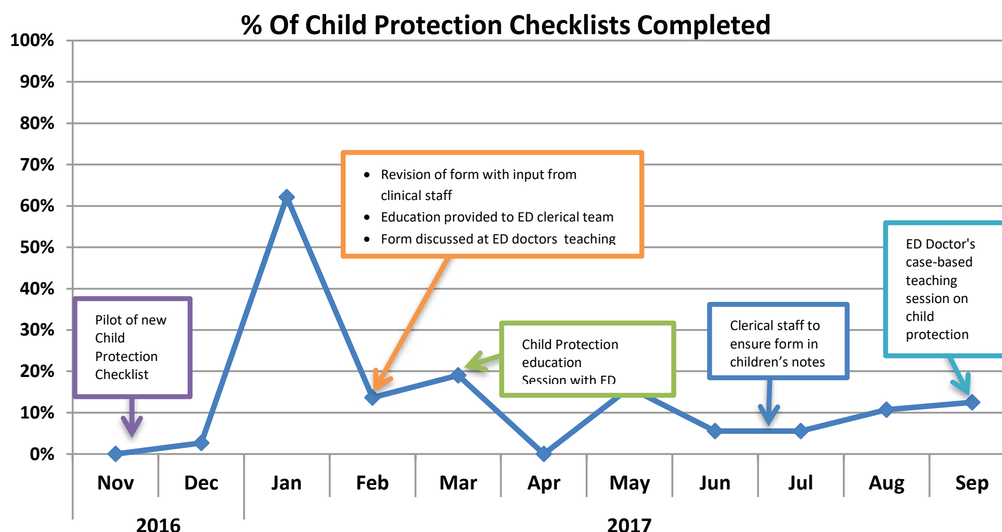



**Figure 2:** Percentage of Child Protection Checklists completed

# Keeping Patients Safe

## Rethinking the way we work – Alcohol and other drugs service

One of the major challenges of working in the Mental Health and Addictions services field is the high rate of Did Not Attend (DNA).

It was noticed that some geographical areas in Northland showed higher rates of DNA than others. Areas identified were Ruakaka, Mangawhai, Waipu and Kaiwaka. The combined estimated population of these areas is 10,000 people. The DNA rate for people attending Alcohol and Other Drugs (AOD) services from these areas historically was more than 80 percent.

The most common reasons for clients in these areas not attending included:

- lack of resources (no transport, no licence, no vehicle)
- living remotely
- limited support from friends and whānau.

As a service, we are only effective if we are available and accessible. So the aim of this project is to increase access to the AOD service reducing the high rate of DNA. The specific areas targeted were Ruakaka, Waipu, Kaiwaka and Mangawhai.

The project began by reaching out and taking the AOD service to the community. Forming a partnership with the Bream Bay Trust, a local Non-Government Organisation (NGO), through the creation of a co-located community based model of care.

This was achieved by aligning the AOD service with the Bream Bay Trust in Ruakaka to be available on the same day as the free GP practice and budgeting service. AOD assessments, health and AOD education, smoking cessation, whānau support, home visits, women's group and AOD counselling were offered.

- Working closely with the free GP practice at Bream Bay offering support around mental health and addictions
- Liaising with the social worker and other staff at the Trust to offer mental health and addiction support treatment options and other interventions.

Another aim was to reduce inequity for Māori. To do this we worked closely with the staff at the Trust that practices the Kaupapa Māori approach. Offering whānau support around education, information and strategies to keep them safe and how they could support their whānau who were dealing with mental health issues and/or addictions.

A survey of the staff at the Bream Bay Trust as well as our consumers was conducted to evaluate the project.

## Outcomes

Feedback from the Bream Bay Trust consisted of the following comments:

- Being accessible, available and consistent
- Not only changing the lives of the clients but their family and friends too
- They have been called out less frequently to assist clients with any police involvement and involvement with other social systems such as Oranga Tamariki
- Had fewer interventions with the crisis team or organising admissions to ED due to an overdose or domestic violence
- Reduced their caseload by 40 percent
- Accessibility to the AOD service was increased
- Historically the attendance was around 10 percent for clients from the target areas. Attendance was increased to 83 percent through this project
- The DNA rate was historically more than 80 percent. The project reduced the DNA rate to 7 percent.

The following evaluation tools were used to identify the impact the change of AOD services had on consumers:

- Alcohol and Drug outcome measures (ADOM's) used for all clients
- Life Journey tool, specifically focusing on past trauma and abuse and how that impacted on their daily lives, was completed by ladies attending the women's group
- Evaluation Questionnaire for the ladies attending women's group.
- These evaluation questionnaires were used in the following manner:
- At the start of treatment, a six-week intervention and after completion of the group. If they decide to continue, the same pattern is followed.

The following comments came from our consumers. That they were:

- Learning skills which enabled them to change their life around by coping better with their anxiety and depression
- Reducing their substance use significantly
- Learning skills to deal with their past trauma or abuse, and minimising the impact that it has on their daily life.

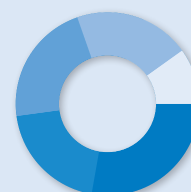
## Statistics

**Statistical outcomes indicated the following:**

- 40 (83 percent) people attended from 48 referrals received
- 27 received counselling
- 5 attended women's group
- Only 8 (7 percent) people did not attend at all.

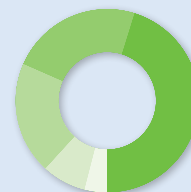
**Where referrals came from:**

- 11 people were referred by GPs
- 8 referred by Bream Bay Trust
- 8 referred by Probation Services
- 5 self-referrals
- 8 referred from different services.



**Increased accessibility for clients in the target areas of Ruakaka, Mangawhai, Waipu and Kaiwaka::**

- 18 people from Ruakaka
- 10 people from Mangawhai
- 7 people from Waipu
- 2 people from Kaiwaka
- 3 people from other areas.



**Demographic factors:**

- More females than males engaged
- More Pakeha (NZ European) than Māori
- Most clients were between the ages of 30 and 40.

## Rethinking the way we work – Alcohol and other drugs service (cont.)

### Sharing our success:

- The project was accepted for a poster presentation at the annual national Drug and Alcohol Cutting Edge Conference – the change we made regarding AOD service delivery. The poster presentation was noted as being in the top six at the conference
- The project team were invited to give a short presentation of the project to the conference
- The project featured in the local Mental Health bulletin
- The project team were interviewed by the then Whangarei Member of Parliament Dr Shane Reti about the project reaching out to the community and the impact it had on the population. Explaining the service presence effectively captured a greater population and increased accessibility for our community.

The project team successfully increased access to AOD services for the local population of Ruakaka, Mangawhai, Waipu and Kaiwaka.

We take our hats off to the community who wanted to make a change and had the courage to reach out for help. This enabled us to take the AOD service to where it was needed and make a difference.

Project team: Theresa Botha and Henriette de Vries

# Keeping Patients Safe

## Skin Cancer Service Project

The Northland DHB Skin Cancer service receives about 1600 referrals per year, mostly from general practice. Some 70 percent of skin cancer histology is from lesions removed in general practice. Approximately 15 percent of referrals (non-melanoma and melanoma) are then sent on to GPs who have a 'special interest and qualification' in skins (GPwSIs).

As a training organisation, Northland DHBs Department of Surgery offered surgical registrars the opportunity to advance their skills in the Minor Skin Procedures clinic, under supervision. However the skill level of registrars varied from year to year and there was some inconsistency in the way patients were managed.

## Issues/Aims

- Need for better quality referrals – more detailed information, including well-defined photographs to assist with triaging
- History of inadequate excision of margins from both primary and secondary care providers
- Standardise our approach to skin referrals, patient management, and education, within the context of Northland DHB's Triple Aim Methodology;
  - Working within our financial means
  - Improving outcomes for patients
  - Improving population health through prevention and self-management.

## What we have done

The project commenced in May 2014 when Skin Service meetings were formalised to identify and address key issues around the service being offered to our Northland population. Varying models of care made the patient journey difficult to manage, as did sub-optimal resourcing and training. Many changes within the department's staffing structure had impacted this too.

The Skin Service Steering Group now meets monthly and also acts as the Faster Cancer Treatment (FCT) steering group. The meeting is attended by service managers, CNS, Clinical Nurse Manager, the Clinical Director of Surgery, a GPwSI/Medical Officer Special Scale (MOSS), Plastic & Reconstructive Surgeon, and GP liaison officer.

The appointment of a MOSS / GPwSI Dr Peter Allen in mid-2014 was a key factor in the development of the Skin Service. This process has since been expanded more recently to include an appointment of a MOSS at Kaitaia Hospital opening a clear pathway for some skin cancer surgery to be done within easier reach of our Far North community.

Michelle Finegan from the Skin Service team.

# Keeping Patients Safe

## Improving Patient Experience – Cancer and Blood Service

Over the past two years, lead Oncology Pharmacist Kay Lengyel has shown exemplary initiative and leadership in the development of the Northland DHB Cancer and Blood Service. Kay has undertaken multiple projects to both improve patient experience and steward DHB resources. She has initiated and led many of these projects while remaining a key member of the team.

The Northland DHB Cancer and Blood Service has grown from being a small service with only one Medical Oncologist and a visiting Haematologist delivering chemotherapy in a corner of medical outpatients, to a large department delivering chemotherapy out of the The Jim Carney Cancer Treatment Centre, a purpose-built centre.

During this time, the Faster Cancer Treatment Programme was implemented by the Ministry of Health. This was rolled out to ensure patients have timely access to appointments, detection tests and treatments to increase the likelihood of better outcomes.

The Ministry of Health set indicators that all DHBs are to report against are:

- 31-day indicator – all patients with a confirmed diagnosis of cancer receive their first cancer treatment (or other management) within 31 days
- 62-day target – all patients referred urgently with a high suspicion of cancer receive their first cancer treatment (or other management) within 62 days.

As a result of increased capacity and the implementation of the Faster Cancer Treatment Programme, the number of chemotherapy administrations increased significantly. The pharmacy department which is instrumental in the safe dispensing and delivery of chemotherapy workload also grew, however their Full Time Equivalent (FTE) did not reflect this influx. (Approval for increasing pharmacy job size has recently been given.)

Kay has completed or been involved with the following:

- Trained four pharmacists through the oncology/haematology training programme
- Participated in the education of nurses on the implementation of the Antineoplastic Drug Administration Course (ADAC), a chemotherapy training package to maintain nursing standards
- Developed and delivered a project to safely supply oral chemotherapy in the community via community pharmacists and designed a community dispensing oral chemotherapy specific prescription. Education and support for community pharmacists in dispensing oral chemotherapy is ongoing
- Introduced new chemotherapy pumps by writing the dataset with the Northland DHB Intra-Venous devices and practice coordinator. Kay supported the introduction of the pumps on to the oncology unit. Maintaining the dataset for oncology has significantly improved patient safety
- Worked collaboratively with the Clinical Nurse Manager and Clinical Nurse Specialist (CNS) to prepare a successful business case for the purchase of closed infusion systems to deliver chemotherapy. This significantly increases safety

2016 Health & Social Sector Awards Cedric Kelly Supreme Award winner – Kay Lengyel.

for nurses and patients by reducing accidental exposure to chemotherapy

- Developed the malignant haematology service in cancer and blood services with the new consultant haematologist and Clinical Nurse Specialist roles
- Assisted in the production of guidelines and protocols for treatment and management of the side-effects from chemotherapy. This information is available now on the Clinical Knowledge Centre for the wider hospital and community. This site also provides access to the roster and electronic whiteboard for scheduling patients' chemotherapy.
- Maintained and updated the key links provided for electronic point of care resources, training, regional electronic prescriptions and important support services
- Developed an electronic whiteboard for scheduling chemotherapy with ongoing advice on improving scheduling for efficient service
- Attended regional meetings for oncology services aimed at improving local service and aligning with the region
- Produced statements on chemotherapy expenditure for the department
- Significantly reduced chemotherapy waste by implementing a more detailed clinical checking process and developing an ordering process to be more patient specific. This has seen saving in the order of $10,000s per month to Northland DHB
- Led and developed the introduction of compassionate access programmes in oncology and haematology offering the opportunity to patients to receive therapies not funded by Pharmac New Zealand. This required the development of electronic prescriptions and guidelines for administration by nurses, and complying with stringent reporting to suppliers
- Supported a significant audit for the oral chemotherapy project. Also auditing safety and compliance of different chemotherapy regimens to guide treatment decisions
- Developed a validated training package for pharmacy technicians training in oncology
- Developed patient information leaflets.

*On a personal note, I believe that the Cancer and Blood service at Northland District Health Board would not be able to offer the high standard of patient-centred care that it does if it was not for Kay Lengyel's significant contribution.*

*As head of department and a Doctor in the NZ healthcare system for 21 years, I have not worked with someone who has demonstrated the level of initiative, leadership, work performance, innovation and stewardship that she has displayed with integrity and consistency over the time we have worked together. It is a pleasure and an inspiration to work with her.*

*Kay has delivered all the above achievements, often in her own time. Despite a heavy workload she has always behaved with humility and professionalism. She naturally embodies the values of the DHB and is held in high regard by all who work with her. Despite having limited contact with patients she has significantly contributed to an improved patient cancer journey. She has been central to the success of a highly functioning department that embodies the vision and values of the Northland DHB.'*

***Dr Lisa Dawson***

The Jim Carney Cancer Treatment Centre now has three Medical Oncologists, two Haematologists, two Medical Registrars and one House Officer consulting and treating patients.

Cancer & Blood Services successfully opened a satellite Oncology Unit in Kaitaia Hospital in July 2017, delivering a variety of chemotherapy treatments to cancer patients in the Far North. As a result, patients can be treated closer to home.

Whangarei Cancer & Blood Services team supporting the opening of the satellite Oncology Unit in Kaitaia Hospital.

## General Practice-based Oral Health Promotion and NaF (fluoride) Application Pilot Project

As there is a close link between oral health and general health, the inequalities that exist in the health status for people living in Northland, particularly for Māori and those living in poorer, rural communities, impact directly on their oral health. Lack of fluoridation of the water supply further compounds the impact of deprivation on the oral health status of Northland communities.

In Northland in 2015, only 28 percent of Māori five-year-olds were caries free compared with 57 percent of non-Māori five-year-olds. In 2013, enrolment with the Oral Health Service of eligible Māori pre-school children living in Raumanga, Whangarei was <20 percent, well below the national target of 95 percent.

### Issues Northland DHB wanted to address

- Poor health outcomes for children as a result of tooth decay – particularly the inequity in health outcomes over a range of indicators experienced for tamariki Māori
- Poor enrolment rates of pre-schoolers with the Oral Health Service
- Poor attendance at Oral Health Service for assessment and early intervention
- Poor parent/caregiver knowledge and skills about how to protect their pre-schoolers' first teeth from decay
- Reduced opportunities for pre-schoolers' first teeth to be exposed to topical fluoride
    - o non-fluoridated water supply
    - o not brushing teeth regularly with a fluoridated toothpaste.

International evidence supports that education about tooth-brushing and diet, with preventative applications of fluoride, is very helpful in preventing dental caries in children.

Biannual applications of NaF (fluoride) varnish in children reduce decay by 24¬–46 percent. In 2014, Northland DHB was granted permission to start a three-year clinical audit to determine the effectiveness of a six-monthly NaF varnish application programme in a school setting.

Dr Conlin Locke, a GP at Raumanga Medical Centre, attended a medical practitioner's conference in the United States in 2015. A presentation about the efficacy and positive contribution fluoride varnish programmes currently running in the States are making on oral health outcomes for children, motivated him to approach the Northland Oral Health Services to see if something similar could be provided at his Practice.

The proposal would enable his Practice team to provide:

- a locality-based programme of oral health promotion to families of enrolled pre-schoolers and
- a six-monthly fluoride varnish application to pre-schoolers enrolled in the Practice.

### Aims of the Pilot Project

The aims of the project for the cohort of children aged 0–60 months enrolled with Raumanga Medical Centre were to:

1. Increase pre-school enrolment and attendance with the Oral Health Service
2. Improve whānau knowledge and skills about pre-school oral health hygiene
3. Contribute to a decrease in the prevalence of decay at aged five years (timeframe >5 years) through topical application of NaF varnish.

### Pilot Project Processes – Pre-call, recall and opportunistic

It was agreed that Practice Nurses would actively pre-call all enrolled and eligible pre-school children and then regularly recall them at six-monthly intervals. Opportunistic education and fluoride varnish application would also be offered to 1–5-year-olds.

The Northland DHB Oral Health Service agreed to provide training for the Practice team.

### Components of the Practice Consultation

- Consent
- Health promotion
- Lift the Lip assessment
- Application of NaFl varnish
- Documentation
- Recall in six months in the Patient management System.

### Funding

The agreed funding was a payment of $30 per child per treatment visit. This cost per child covered most of the clinical time. In addition to the fee for service payment, the Oral Health Service provided the fluoride varnish with applicators, and toothbrushes with paste for participating children and their whānau.

Using Institute for Healthcare Improvement (IHI) methodology, the following process improvement areas were actioned and included:

**1. Entry to Service**

- Improve the consistency of reception staff requesting the latest contact information for parents/caregivers at each visit
- Explore options for engagement with allied health and social service providers to improve access for whānau to attend the local Oral Health Services Hubs.

**2. Preparation**

- Trial a dedicated Practice Nurse for NaF varnish applications
- Revision of Standing Orders to ensure target group are prioritised.

**3. Application of NaF Varnish**

## Parents/Caregivers

- Develop an information leaflet to support key Oral Health messages
- Ask parents/caregivers about their experience and impact of NaF varnish application at the Practice
- Ensure whānau have information about accessing adult low-cost dental services.

## Workforce

- Develop a responsive schedule for workforce training to accommodate new staff and those seeking refreshment of skills
- Develop training material that supports learning.

**4. Documentation**

- Improve the Record of Administration form
- Improve the feedback mechanism between the Practice and Oral Health services to minimise risk of duplicate varnish applications within the six-month recommended timeframe.

**5. Management of Consumables**

- Develop a better process for re-stock of consumables.

**6. Payment for Services**

Improve the accuracy and timeliness of the system for invoicing and payment.

## Outcome

From the start of the project there has been a modest yet sustained improvement in pre-school enrolment with the oral health service for the eligible cohort. There is a corresponding modest improvement in attendance at the oral health service with enrolment.

Of note is the increase in access to NaF varnish application. Of the 169 eligible pre-school children receiving NaF varnish at the Practice during the 12-month period seven children received a second application of varnish within six months after receiving their first application.

At 1 November 2016, 42 percent of eligible pre-schoolers aged 0–60 months had not enrolled with the oral health service.

Measuring Impact of the Project

There are several constraints in establishing a baseline as the denominator for measuring impact of the pilot project on enrolment, first oral health assessment and access to varnish.

Therefore this process evaluation has identified all children aged 0–5 years old by NHI enrolled with the Practice in October 2016, and cross-matched them with Titanium to form a baseline at the start of the project (1 October 2015) and then during the 12 months following – until 31 October 2016.

**Three indicators are measured:**

- Date of enrolment with the oral health service
- First assessment with the OHS
- First NaF varnish application.

## Conclusion

This project has demonstrated a collaborative model of practice toward improving health outcomes for pre-schoolers enrolled with a General Practice servicing quintile five communities. The initiative is both innovative and proactive.

The Practice team have demonstrated consistent commitment to the project, incorporating the assessment and NaF varnish application into the already demanding environment of a busy general practice. The oral health service has been responsive and supportive of the Practice team.

Although the project has not demonstrated significant gains in facilitating access to the oral health services, it has provided multiple opportunities for face-to-face information sharing with whānau about oral health and the importance and value of caring for their children's first teeth. For some children, participating in the Practice varnish project is their first contact with oral health assessment and preventative action.

Significant issues remain in addressing barriers to Oral Health Services access for non-enrolled, non-accessing pre-schoolers and their whānau. To better understand access issues and develop a model of care that addresses some of the barriers to service access, a co-design project in partnership with whānau has been started.

Kaiāwhina working within the Maternal and Child Health Services are using their extensive network and skills to identify whānau not accessing Oral Health Services. By engaging with whānau in a process of enquiry, using a pre-tested survey as a guide to the discussions, it is hoped that knowledge and understanding gained will shape models of care and service delivery that better meet their needs.

This project has provided an opportunity to try a different model of care in a setting where whānau access a broad range of health screening, consultation and intervention services. It is difficult to measure the true impact of this model of care in such a short timeframe. However, on analysis of the information gathered the approach demonstrates improved access to oral health services and to NaF varnish application for a cohort of children that may otherwise not receive preventative oral healthcare.

# Healthier Communities

## Revision of the Food and Beverage Policy

This project had two main aims. First to improve the nutritional quality of food offered by Northland DHB to its staff and visitors. Second, to demonstrate leadership in health, by providing our community with improved access and availability of healthier food choices and a reduction in foods that do not promote health and wellbeing (or that contribute to an obesogenic environment).

The obesogenic environment, defined as 'the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or population' is thought to play a strong part in the global increase of obesity.

With high obesity rates plaguing the nation and an even higher rate in Northland, improving our regions' food environment to support communities, whānau and staff to make healthier choices is crucial. Northland DHB has a responsibility to provide staff and visitors with healthier food and beverage options.

Research of up-to-date evidence on obesogenic environments and food policies in health facilities in New Zealand and internationally was conducted by the Food Policy working group. Evidence on the obesogenic environment and its' influence on obesity was used to develop the rationale for the policy revision.

Supporting evidence, as well as the 2015 New Zealand Food and Nutrition guidelines (Ministry of Health) were used to revise the Northland DHB Food and Beverage Policy. In-patient food service was excluded from the revision and was beyond the intervention scope. The revised food policy was presented to Northland DHB Executive Leadership Team for approval before implementation.

Before changes in the Northland DHB food and beverage policy, staff and visitors could purchase high energy-dense beverages, deep-fried and pastry foods and an abundance of confectionary and sweets. With sound evidence on the negative health impact of the availability and consumption of such food and drink products, it was difficult to ignore their presence at a health facility. Consumers were receiving conflicting messages, and their ability to easily make the best choice was impaired.

The goal of the project was to improve the current food environment offered at Northland DHB facilities by influencing and regulating the foods which contracted food services providers could offer to staff and visitors.

Revisions to the food and beverage policy were implemented in three phases over an 18-month period. The phased implementation began in October 2014 and was completed in March 2016, with the final phase requiring full compliance to the food and beverage policy from all food service providers and systems, including vending machines.

## Key changes to Northland DHB food and beverage policy

The policy has been incrementally implemented since October 2014. First with the removal of sugar-sweetened beverages, then in January 2016 the removal of all carbonated drinks, deep-fried foods, pastries and confectionary from sale. In June 2016 fresh-vending machines were provided on site for around-the-clock provision of healthier snack and light meal options.

- Removal of sugar sweetened and carbonated beverages
- Removal of deep-fried foods
- Reduced sale of confectionary and baked goods
- More emphasis on the provision of whole, less processed, food items, including fresh fruit and vegetables
- Items at point of sale and at eye level were influenced by the food policy
- High nutritional quality snack items replaced otherwise energy-dense confectionary at the point of sale
- Placing water at eye level in drink cabinets, and requiring at least 50 percent of the cabinet to stock water was another cafeteria design change intended to influence consumers' choice and behaviour.

## What was the outcome?

As there was no baseline data collected before the implementation of the new Food and Beverage policy it is difficult to quantify the impact of the changes on consumer consumption or behaviour. However, key changes to the food choices available for sale reflected an improvement in the food environment on all Northland DHB premises.

As a result of the changes, consumers were offered an increased selection of healthier food and beverages. Although it is impossible to quantify the impact of this intervention on obesity rates in Northland, Northland DHB has reduced the obesogenic environment by no longer providing energy-dense and poor nutritional quality foods and beverages for sale to its staff and visitors.

Positive changes to the obesogenic environment have been an action supported by international health organisations (World Health Organization) as a means to reduce obesity. The improved food environment the DHB now provides to staff and visitors has received overwhelming support. On-site food providers are regularly monitored to ensure the food and beverages they provide are within policy criteria, and meeting the needs of staff, especially those working outside 9¬am–5pm hours.

## Neighbourhood Healthcare Homes (NHH)

Neighbourhood Healthcare Homes (NHH) is a programme of work designed by Northland DHB with the Northland Primary Care Sector. NHH works to improve the quality of primary care and promote the coordination of services for improved equitable population health outcomes.

The project began in October 2014. By the end of October 2016 almost a quarter of Northland General Practices will have received their data package and narrative report in a presentation from a Public Health Medicine Specialist.

The principles of the NHH include:

- Better equity management
- Involving the consumer voice in planning and evaluation
- Delivering a unique Northland healthcare home model of care via coordinated networks of providers and consumers clustered around general practices
- Strengthening the use of data, including risk stratification, to provide proactive planned care to the highest need patients
- Building community resilience through volunteer networks
- Innovative use of e-Health
- Enabling same-day access to primary care, effectively managing urgent demand.

Many of the above principles rely on the timely provision of robust and meaningful data. Collecting the right data, using the right analysis and monitoring outcomes over time can help us answer critical questions around the health needs of our population, and better plan for their care.

At present, Northland DHB is trialling a 'data provision and interpretation' package with selected primary care practices, as part of the larger Neighbourhood Healthcare Home programme. Making the right model-of-care changes and addressing the right issues relies on the timely provision of robust and meaningful data.

An over-burdened primary care sector has led to delays in getting an appointment with your own GP, sometimes long waits in GP waiting rooms, appointments too short to provide good long-term conditions, and a stressed primary care workforce which compromises patient care.

The Northland health system performs well, but is under pressure. Population ageing, increasing prevalence of long-term conditions and enduring inequalities exert significant pressure on existing models of care and signal a need for change. Ensuring sustainability and elimination of inequalities requires redesign of these models of care to bolster system capacity and capability, and lift performance.

## Providing a technical data package for each General Practice

In the first instance we provide a short narrative report and a presentation for selected Neighbourhood Healthcare Home Practices. The report and presentation, delivered by a Public Health Medicine Specialist, provides an interpretation of the data for the general practice. The interpretation includes an equity analysis, and is presented to general practice teams in a quality improvement frame. The aim is to work together to address the population health issues identified in the data.

## Preparation of risk stratification reports for each General Practice

**Objectives**

1. Merging multiple patient information datasets that provide health status and utilisation information across the sector, including those from PHO registers, individual primary care practices, White Cross and ED, secondary care, allied health, and hospitalisation records.
2. Providing a technical data package for each General Practice in Northland.
3. Providing a short narrative report and a presentation for selected Neighbourhood Healthcare Home Practices in the first instance. The report and presentation, delivered by a Public Health Medicine Specialist, provides an interpretation of the data for the general practice including an equity analysis, and is presented to general practice teams in a quality improvement frame, seeking to work together to address the population health issues identified in the data.

The data packages and narrative reports are being used to support planning for model-of-care change in Neighbourhood Healthcare Home practices.

The ED and White Cross specific data has been provided to all Northland general practices comparing patient use of ED and White Cross in and out of hours, by self-referral or GP referred with like general practices as measured by deprivation decile.

The data is also being used to provide risk stratification reports to each general practice in Northland to enable identification of the highest need patients in a practice population based on high intensity use of ED and acute inpatient admissions.

## What changes were taken to achieve the aim?

We have merged multiple datasets that provide health status and utilisation information across the sector, including those from PHO registers, individual primary care practices, White Cross and Emergency Department, secondary care, allied health, and hospitalisation records.

At the individual level, this broad and encompassing dataset provides information on every Northlander enrolled with a General Practice (approximately 90 percent) and how they use services across primary, secondary and tertiary care.

Collectively, the data provides us with a comprehensive view of demography, access and short-term outcomes for our broader population. We can provide individual general practices with information about the health needs and service use of their patients, and enable them to compare these indicators against those of other similar practices (their 'peer group'). Measures are adjusted for age and ethnicity, to maximise the validity of these comparisons.

## Neighbourhood Healthcare Homes (NHH) (cont.)

### How were change initiatives disseminated with the groups involved?

At present, this data is delivered to primary care practices as a three-stranded package.

1. Technical Report – a 36-page document providing estimates of health (e.g. diabetes prevalence) and healthcare use (e.g. medical consultations, presentations to ED) for a given primary care practice, as compared to those of a group of 'peer group' practices (with a patient population similar in socio-economic position) and those of Northland. Estimates are adjusted for age and ethnicity.
2. Narrative Report – public health and epidemiological interpretation. Identification of key patterns and high risk groups. Suggestion of priorities, interventions, and further bespoke analyses. Provision of lists of priority patients (e.g. diabetics with 0 or 1 GP visits within the calendar year, patients identified with a chronic disease such as diabetes or Chronic Vascular Disease that were not recorded as such on PHO register, patients who are high users of ED or GP services).
3. Presentation – interactive presentation and discussion with the broader primary care team, including clinical staff. Understanding the technical and narrative reports within the context of the practice (i.e. specific workflow, location, or patient issues).

### Measuring Effects

Neighbourhood Healthcare Home General Practices are drawing on the data packages and narrative reports to inform the development of change plans which will guide their model of care change. Although the development of the merged datasets and general practice data packages has not involved consumers, the change planning process at a general practice level does.

### Results

The data packages and narrative reports are being used to support planning for model-of-care change in Neighbourhood Healthcare Home practices.

The ED and White Cross specific data has been provided to all Northland general practices, comparing patient use of ED and White Cross in and out of hours, by self-referral or GP referred with like general practices as measured by deprivation decile.

The data is also being used to provide risk stratification reports to each general practice in Northland to enable identification of the highest need patients in a practice population based on high intensity use of ED and acute inpatient admissions.

### Reducing health inequities for Māori

All data is provided by ethnicity. An ethnicity-specific analysis is applied to the data to identify any inequities in GP consultation, ED presentation, acute inpatient admissions, First Specialist Assessment, Arranged Admissions etc. This equity analysis is a particular focus of the Neighbourhood Healthcare Homes change planning.

### Benefits to Consumers

Consumers started to benefit from this work in October 2017 when the risk stratification reports were provided to each general practice. These enable identification of the highest need patients to be offered the new CarePlus programme – Kia ora Vision.

In the longer term the GP Information Reports will benefit consumers by identifying particular changes that should be made in developing the Neighbourhood Healthcare Home change plans.

### Staff and Groups Involved

- Rowan Croft – Data Manager POID
- Eric Riddle – Data Manager from MIS
- Dr Juliet Rumball-Smith – Public Health Medicine Specialist, Public Health
- Lisa Wickham – Chief Information Officer, Northland PHOs
- Liane Penney and Jenni Moore – Northland Health Services Plan and Neighbourhood Healthcare Homes Project
- Drs Andrew Miller, Peter Vujcich, Aniva Lawrence – General Practitioner clinical advisors
- Health Partners Consulting Group and more latterly Ernst and Young have supported us in the development of this work
- Both Manaia and Te Tai Tokerau PHO leadership worked with the DHB team to conceptualise the work and enable the data sharing processes
- Bush Road Medical Centre, Broadway Health, Te Hiku Hauora, Te Whare Ora o Tikipunga also provided valuable feedback on early versions and the presentation process.

# Our Future

## National Early Warning Score

Acute deterioration can happen at any point during a patient's admission to hospital. If acute deterioration is recognised early and responded to appropriately, patient outcomes can be improved. Patients can show signs and symptoms of physiological instability for some time before events such as cardiac arrest or an unplanned admission to an intensive care unit (ICU). This means there are opportunities to intervene and prevent these events from occurring.[11]

A patient in hospital whose clinical condition is acutely deteriorating needs timely recognition and appropriate expert care. Vital signs are documented on charts to enable staff to recognise trends and any patient deterioration. Standardising charts, that recognise deterioration and when a response is required, can reduce adverse events such as unexpected cardiac arrest, an unplanned admission to an ICU, or death.[12,13,14,15]

In New Zealand, there is currently variation in the vital sign charts used and when a response is required. The Health Quality & Safety Commission have researched, developed and trialled an Early Warning Chart that provides the best ability to detect and enable timely treatment of patients deterioration, improving patient outcomes.

Due to the variation of services and resources available between New Zealand hospitals, local regions are required to develop a response algorithm appropriate for their organisations resources. This algorithm has been developed in conjunction with clinical staff across Northland DHB and currently being trialled. Upon a successful trial the chart will be implemented in stages throughout Northland in 2018. (Adult Vital Signs Chart sample on the following pages).

Commencing the NZEWS rollout.

[11] Chen J, Ou L, Hillman KM, et al. 2014. Cardiopulmonary arrest and mortality trends, and their association with rapid response system expansion. Medical Journal Australia 201(3): 167–70.

[12] Green M. 2013. Between the Flags Program Interim Evaluation Report. Sydney: Clinical Excellence Commission.

[13] Health Quality & Safety Commission. 2016. The deteriorating adult patient. Current practice and emerging themes. Wellington: Health Quality & Safety Commission.

[14] Moore D and Poynton M. 2015. Business case for investing in a quality improvement programme to reduce harm caused by clinical deterioration. Wellington: Sapere Research Group.

[15] Health Quality & Safety Commission. 2016. Deteriorating adult patient evidence summary. What do we know? Wellington: Health Quality & Safety Commission.

# Adult Vital Signs Chart side 1

Family Name:

Given Name:

Date of Birth:

Gender:

NHI#:

AFFIX PATIENT LABEL HERE

| Vital Signs | | EWS |
|---|---|---|
| | Date | |
| | Time (24 hour) | |
| **Respiratory Rate** (breaths/min) *write* **RR** *value in box* | ≥ 36 | 777 |
| | 25-35 | 3 |
| | 21-24 | 2 |
| | 12-20 | 0 |
| | 9-11 | 1 |
| | 5-8 | 3 |
| | ≤ 4 | 777 |
| **Oxygen** (L/min) | Room air ✓ | 0 |
| | *Supplement (L/min)* | 2 |
| **Oxygen Saturation** (%) *write* **$SpO_2$** *value in box* | ≥ 96 | 0 |
| | 94-95 | 1 |
| | 92-93 | 2 |
| | ≤ 91 | 3 |
| **Heart Rate** (bpm) *mark* **HR** *with X* *write value if off scale* | Write if ≥ 140 | 777 |
| | 130s | 3 |
| | 120s | 2 |
| | 110s | |
| | 100s | 1 |
| | 90s | |
| | 80s | 0 |
| | 70s | |
| | 60s | |
| | 50s | |
| | 40s | 2 |
| | 30s | 777 |
| **Blood Pressure** (mmHg) *score systolic* **BP** *value only* | Write if ≥ 220 | 3 |
| | 210s | 0 |
| | 200s | |
| | 190s | |
| | 180s | |
| | 170s | |
| | 160s | |
| | 150s | |
| | 140s | |
| | 130s | |
| | 120s | |
| | 110s | |
| | 100s | 1 |
| | 90s | 2 |
| | 80s | 3 |
| | 70s | |
| | 60s | 777 |
| | 50s | |
| **Temperature** (°C) *mark* **Temp** *with X* *write value if off scale* | ≥ 39s | 2 |
| | 38s | 1 |
| | 37s | 0 |
| | 36s | |
| | 35s | 1 |
| | ≤ 34s | 2 |
| **Level Of Consciousness** mark **LOC** with ✓ | Alert | 0 |
| | Voice | 3 |
| | Pain | |
| | Unresponsive | 777 |
| **EARLY WARNING SCORE TOTAL** | | |

| Pain Score |
|---|
| |
| |
| |
| |
| |

| | | | | Date |
|---|---|---|---|---|
| | | | | Time (24 hour) |
| | | | | ≥ 36 |
| | | | | 25-35 |
| | | | | 21-24 |
| | | | | 12-20 |
| | | | | 9-11 |
| | | | | 5-8 |
| | | | | ≤ 4 |
| | | | | ✓ Room air |
| | | | | Supplement (L/min) |
| | | | | ≥ 96 |
| | | | | 94-95 |
| | | | | 92-93 |
| | | | | ≤ 91 |
| | | | | Write if ≥ 140 |
| | | | | 130s |
| | | | | 120s |
| | | | | 110s |
| | | | | 100s |
| | | | | 90s |
| | | | | 80s |
| | | | | 70s |
| | | | | 60s |
| | | | | 50s |
| | | | | 40s |
| | | | | 30s |
| | | | | Write if ≥ 220 |
| | | | | 210s |
| | | | | 200s |
| | | | | 190s |
| | | | | 180s |
| | | | | 170s |
| | | | | 160s |
| | | | | 150s |
| | | | | 140s |
| | | | | 130s |
| | | | | 120s |
| | | | | 110s |
| | | | | 100s |
| | | | | 90s |
| | | | | 80s |
| | | | | 70s |
| | | | | 60s |
| | | | | 50s |
| | | | | ≥ 39s |
| | | | | 38s |
| | | | | 37s |
| | | | | 36s |
| | | | | 35s |
| | | | | ≤ 34s |
| | | | | Alert |
| | | | | Voice |
| | | | | Pain |
| | | | | Unresponsive |
| | | | | EWS TOTAL |

Family Name:

Given Name: Gender:

AFFIX PATIENT LABEL HERE

Date of Birth: NHI#:

## ESCALATE CARE FOR ANY PATIENT YOU, THEY OR THEIR FAMILY ARE WORRIED ABOUT, REGARDLESS OF VITAL SIGNS OR EWS

### Mandatory escalation pathway

| Total Early Warning Score (EWS) | Action | |
|---|---|---|
| **EWS 1-5** | Inform Nurse Leader, HO if concerned or any score in the orange zone. Reassess in 1hr. Increase observation frequency if needed. | |
| **EWS 6-7**<br>Acute illness or unstable chronic disease | House officer review within 60 minutes. 1/2 hourly observations | *Inform nurse coordinator<br>*Refer to the PAR nurse<br>*Increase the frequency of observations<br>*Document management plan; include intervention, escalation & review time frame.<br>*Consider treatment escalation plan / ceiling levels of care. |
| **EWS 8-9**<br>*or* any vital sign in red zone<br>Likely to deteriorate rapidly | Registrar review within 30 minutes. Consider referral to high acuity area. Reassess in 20 min. | |
| **EWS 10+**<br>*or* any vital sign in blue zone<br>Immediately life threatening critical illness | Call CODE BLUE 777 for Medical Emergency Team review (MET).<br>Urgent on site SMO review needed.<br>Review treatment escalation plan. Consider higher level of care referral /palliation as appropriate. | |

## Modification to Early Warning Score (EWS) Triggers

The EWS can be changed to prevent chronic disease incorrectly triggering escalation. All modifications must be made in line with hospital policy and regularly reviewed by the primary team.

**Ignore any modification that is not signed and dated.**

| Vital sign (use abbreviation) | Accepted values and modified EWS | Date and time | Duration (hours) | Name and contact details |
|---|---|---|---|---|
| | | / / : | | |
| Reason: | | | | |
| | | / / : | | |
| Reason: | | | | |
| | | / / : | | |
| Reason: | | | | |
| NOT FOR CPR ☐ | NOT FOR MET ☐ | / / : | | |

**Any treatment limitations must be documented in the patient's clinical record.**

A full set of vital signs with corresponding EWS must be taken and calculated each time at a frequency stated in hospital policy. If there is no timely response to your request for review, escalate to the next coloured zone.

NORTHLAND DISTRICT HEALTH BOARD

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