

Primary care improvement case study

Childhood respiratory warrant of fitness: Unichem Russell Street, Hastings

Number 1 in a series of 18

Project overview

Unichem Russell Street, Hastings developed a quality improvement project to improve asthma management in a group of Māori and Pacific children.

The pharmacy worked in partnership with adjacent medical centre, The Doctors Hastings medical centre, primary health organisation Health Hawke's Bay's clinical advisory pharmacist and respiratory support service, Breathe Hawke's Bay.

Families of Māori and Pacific children waiting at the pharmacy for their asthma medication were invited to have an asthma control test (ACT), quick respiratory 'warrant of fitness' and education session with a pharmacist.

The patients' average ACT score increased from 13.7 to 21.7, with 83 percent achieving their target score. More preventer inhalers were dispensed and fewer emergency steroids required.

Background and context

The project focused on local Hawke's Bay Māori and Pacific children who have a much higher rate of hospital admissions for respiratory disease (7.3 and 10.4 per 1,000, respectively) compared with New Zealand European children (4.5 per 1,000), to improve health equity in this community.

- Hastings - decile 9/quintile 5 deprivation index area
- High populations of Māori and Pacific peoples
- Housing issues - 3.3 times more likely to be in crowded homes
- Highest ASH rate for 0-4 years old is for childhood respiratory disease
- Māori children have ASH rates 49 percent higher compared with non-Māori children
- Average of 500 avoidable hospitalisations per year for Māori children in Hawke's Bay.

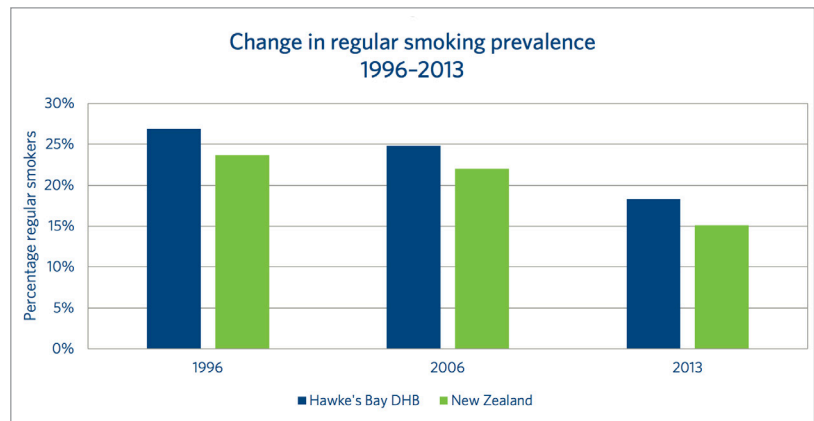
Diagnosing the problem

1 Problem statement:

Childhood respiratory disease causes a disproportionate burden of disease and sometimes lifelong health consequences for the most vulnerable children in Hawke's Bay.

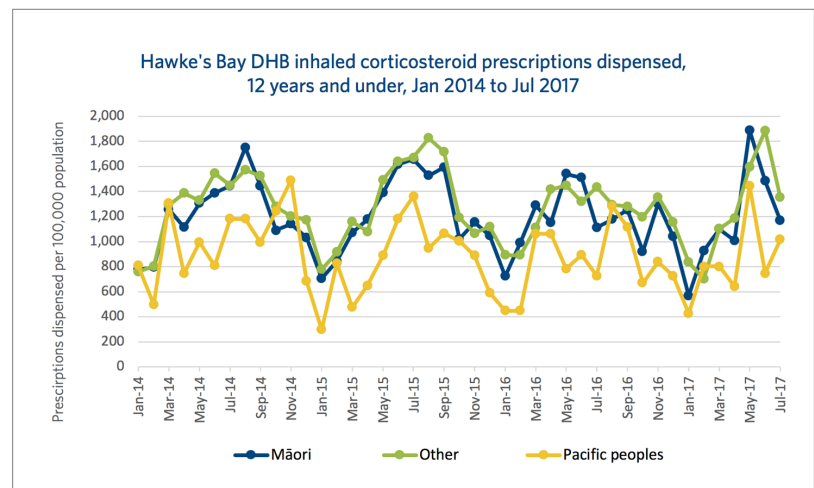
2 How you know that this is a problem? What is the significance of this problem in your specific locality and/or practice? What data did you have to describe this problem?

Māori and Pacific children have the highest rate of asthma in Hawke's Bay and poor collection of preventer inhalers. Smoking prevalence in Hawke's Bay is higher than the New Zealand average.



3 What was the baseline data?

Māori and Pacific children have the highest rate of asthma in Hawke's Bay and poor collection of preventer inhalers. (See Appendices for [Fishbone cause and effect diagram](#) and [process flow chart](#).)



The (SMART) aim

This project aimed for 80 percent of Māori and Pacific children (0-18 years old) to improve their ACT score from current score to target score by December 2018.

The measures:

Outcome measure(s): ACT scores

Process measures:

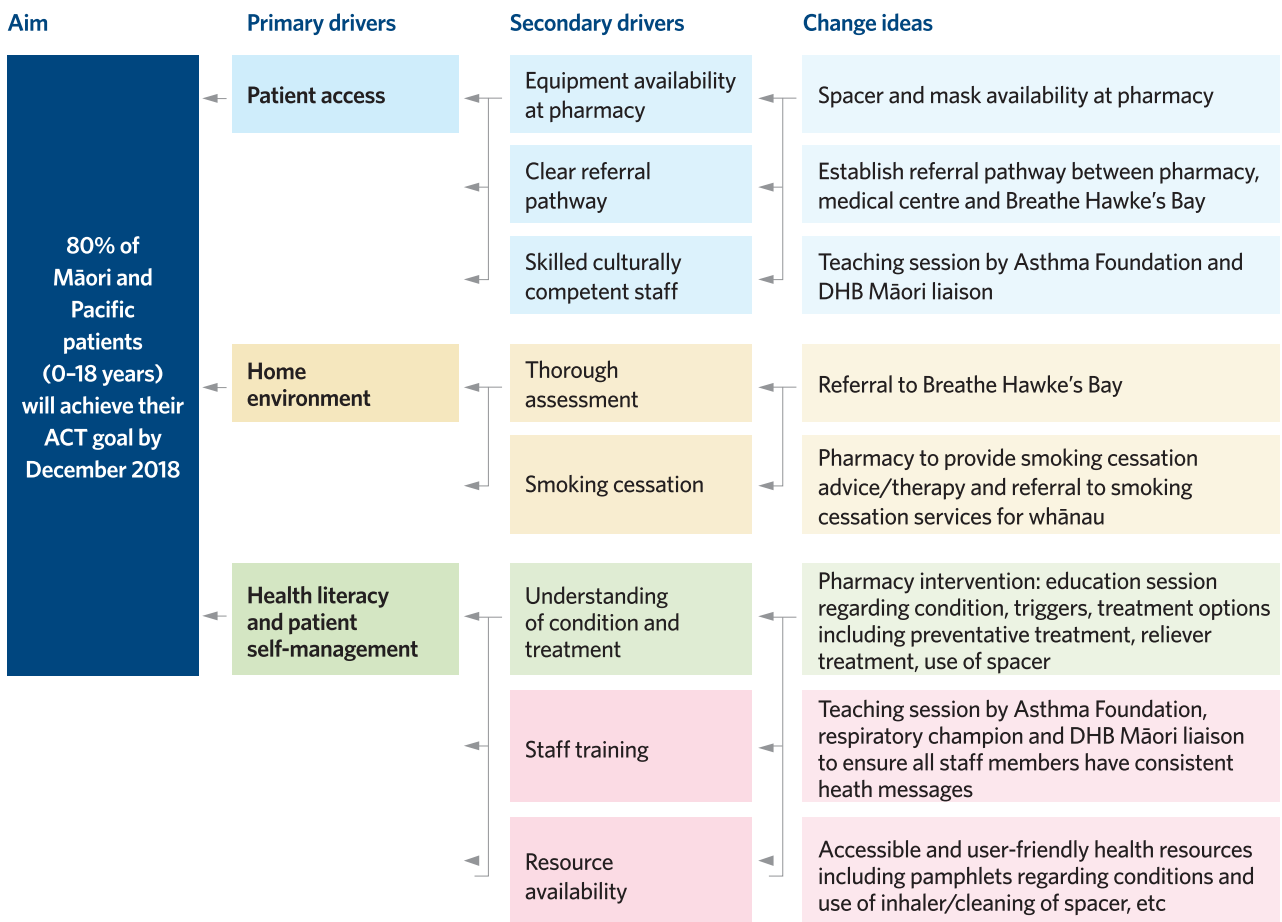
- Number of spacers provided
- Collection of medication:
 - preventer and reliever inhalers
 - emergency steroid prescriptions

Balancing measure(s):

- Cost and sustainability of performing the respiratory warrant of fitness (staff time)
- Impact on other customers (eg, increased waiting time)
- Impact on patient satisfaction scores (eg, increased waiting time).

Drivers of change

Driver diagram



What did we do?

Were there any ethical considerations to be aware of?

There was no ethical consideration to be aware of.

The team

Organisations involved:

- Unichem Russell Street pharmacy
- Patients/consumers
- The Doctors Hastings
- Breathe Hawke's Bay
- Hawke's Bay DHB
- Health Hawke's Bay (PHO).

Skill sets on the team:

- Community pharmacists - Unichem Russell Street pharmacy
- Clinical pharmacist facilitator - The Doctors Hastings
- Respiratory nurse champions - The Doctors Hastings
- Clinical nurse manager - Breathe Hawke's Bay
- Social worker/Māori and Pacific liaison - Hawke's Bay DHB
- Consumer representative
- Advisory pharmacist - Health Hawke's Bay (PHO).

What aspects of the project were co-designed with consumers? How did you involve consumers in co-design? What processes did you use?

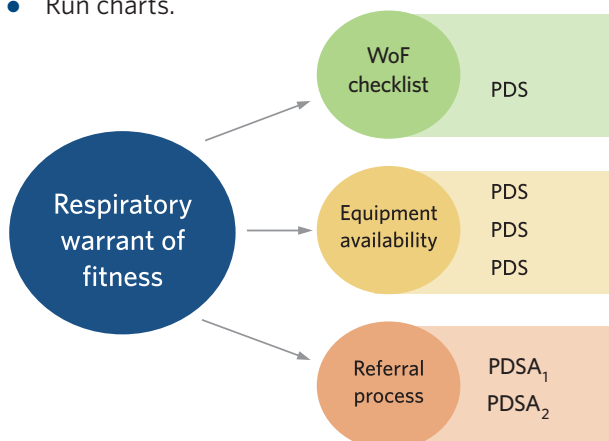
Capturing the patient experience

We discussed, observed and analysed the following aspects to capture the voice of the patients and their experiences:

- Respiratory warrant of fitness checklist (available to download and edit [here](#))
 - Format and content review by patient
 - Education session for patients and feedback for improvement
- Review of patient inhaler and spacer technique
- Access to spacers
- Dispensing and repeat systems for medicines
- Access to other support systems, eg, Breathe Hawke's Bay
- Smoking cessation
- Allergy triggers.

What QI tools did you use, that you would recommend?

- Team assembly including multiple disciplinary team members
- Voice of patient - co-design
- Input from all stakeholders
- [Fishbone cause and effect diagram](#)
- [Process flow diagram](#)
- [Driver diagram](#)
- ACT scoresheet
- Run charts.



What changes did you test that worked?

- GP practice was happy to support the project; pharmacy was mindful to not step on toes
- Respiratory warrant of fitness checklist (refer to [download](#))
 - Format and content review
 - Education session for patients
- Spacer and mask availability at pharmacy. This was arranged on Medical Practitioner Supply Order (MPSO) through the adjacent GP practice:
 - The DHB also supported the initiative to fund free spacer access at pharmacy level and arrange for a GP in Napier agreed to sign the MPSOs for free spacers
 - Easy to implement and very effective (80 percent uptake)
 - Referral pathway between pharmacy and Breathe Hawke's Bay, implemented and working well
- Working together with the GP, GP practice will refer patients to the pharmacy
- Teaching sessions for pharmacy staff members, easy to implement
- Used medicine usage review (MUR) funding from DHB to support the work.

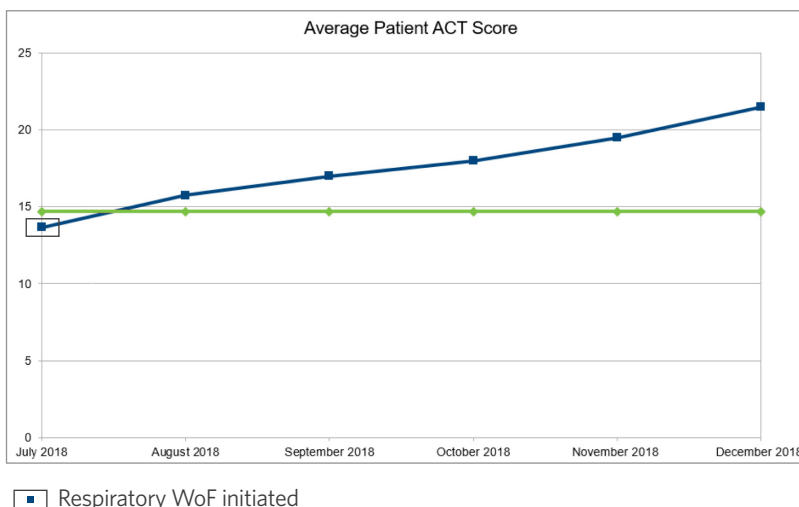
Key challenges during the project

- Data collection and interpretation:
 - identifying appropriate measurements
 - seasonal fluctuations
- Limited access to patient information
- Time allocation - meetings, etc
- Data collection barrier - DHB at capacity
- Limited sample size - impact evaluation
- Ongoing funding issues - Hawke's Bay DHB supports the continual use of MUR funding for this project. This could however be a challenge in other DHBs which may not fund MUR
- Continuing work on staff level of engagement, spreading and sustaining the changes.

The results

1 What outcome measures improved?

Average ACT scores improved based on 12 patients.

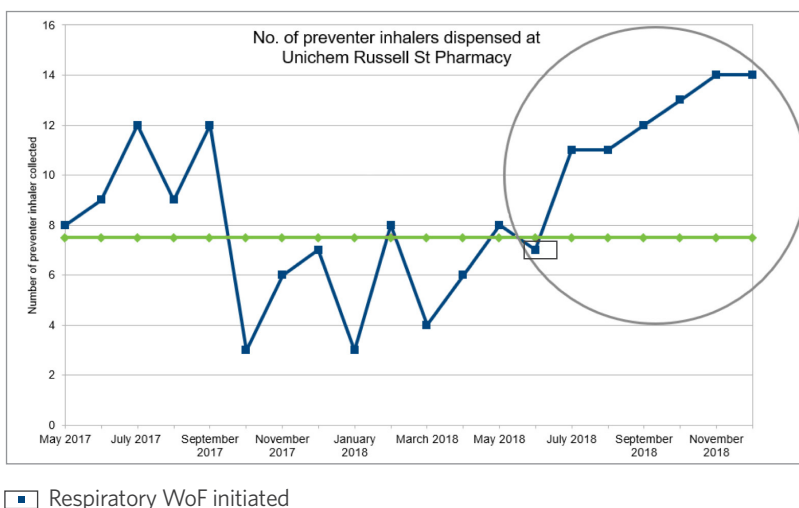


2 What equity measures improved?

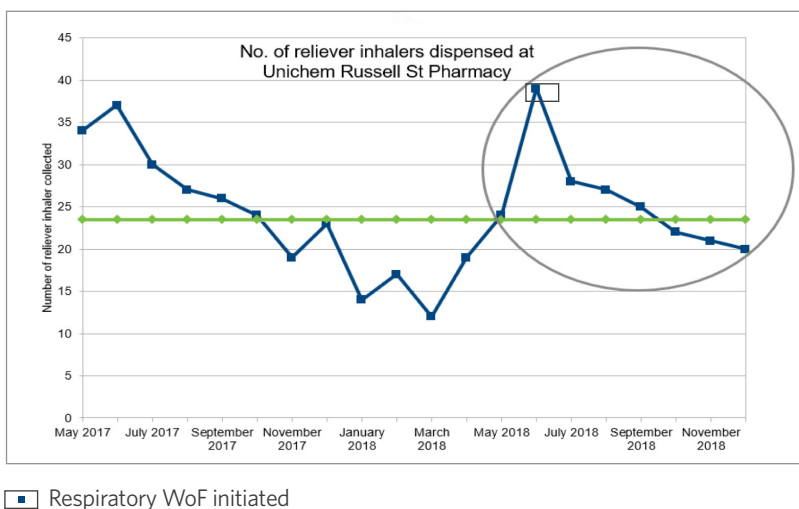
Average ACT scores improved for Māori and Pacific children who were the focus of this project. There was a total of 12 patients who were enrolled in this project.

3 What process measures improved?

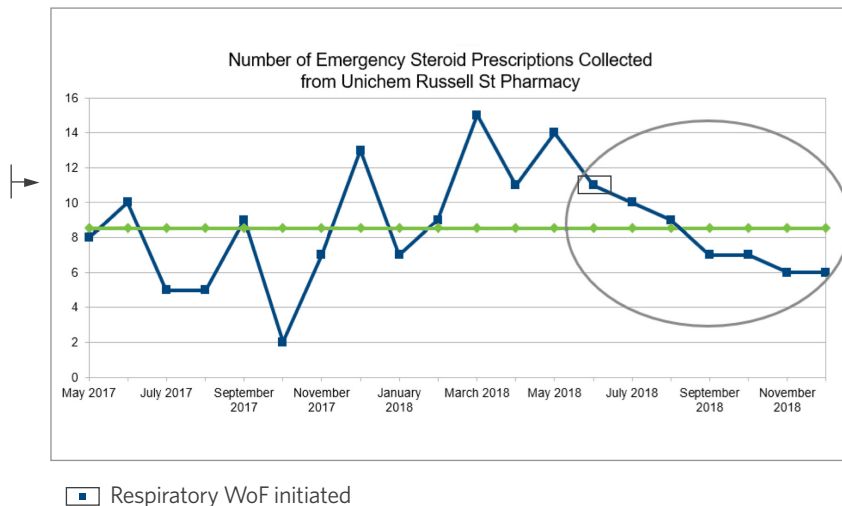
Number of preventer inhalers collected:



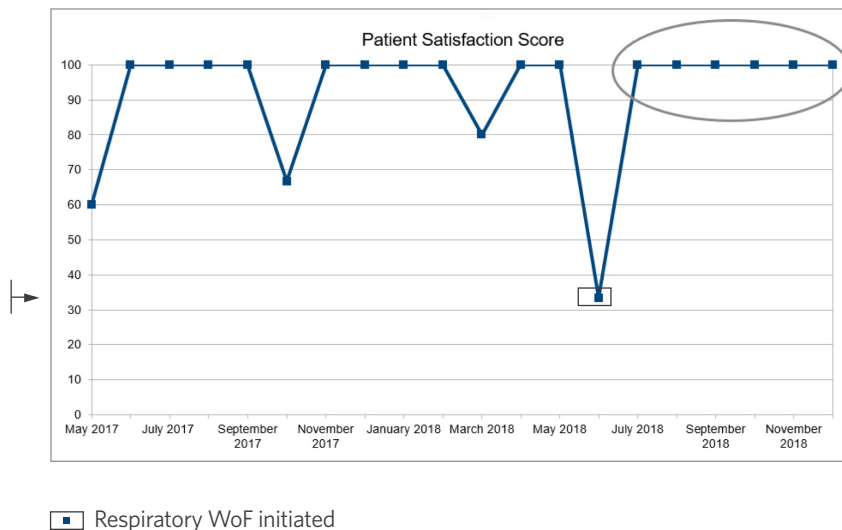
Number of reliever inhalers collected:



Number of emergency steroid prescriptions collected:



Patient satisfaction score was maintained (balance measure):



4 Were there any unintended consequences such as unexpected benefits, problems or costs associated with this project?

Through this project, we were able to build really good rapport with the patients and their whānau. This has been very beneficial because, through the trust we built working on this project, we have been able to provide better quality care of patients and their whānau.

5 Is there evidence that the knowledge of quality improvement science in the team or in the wider organisation improved?

Yes - we are very lucky to have been able to participate in the Whakakotahi programme to learn about quality improvement science. The knowledge gained through the primary care quality improvement facilitator course at Ko Awatea was brought back to the team. It has increased our awareness and interest in quality improvement and how it can be used to improve patient safety and health within the primary health care and pharmacy setting.

6 Successes during the project

- Assembly of team
- Support from pharmacy management, DHB, GP practice, other health professionals and patients
- Improvement of patient ACT scores and asthma management
- Patient feedback has been very positive.

Case example

Three-year-old Johnny* was put under the care of Jackie* via a Child, Youth and Family¹ caregiver unfamiliar with asthma. There were three urgent care visits (within four months) with two courses of prednisolone and two salbutamol inhalers.

Actions:

- Caregiver was given education regarding asthma and management.
- Smoking cessation advice was provided to the whānau.
- Child was registered with the GP.
- Child was referred to Breathe Hawke's Bay Support Foundation.
- Positive outcome from respiratory warrant of fitness – improved health literacy and understanding of asthma management for caregiver.

* Names changed.

¹ Now Oranga Tamariki.

Post-project implementation

- 1 **Have the successful changes been embedded into day-to-day practice? How have you managed this?**
 - Continuing work on staff level of engagement, spreading and sustaining the changes.
 - Ongoing work – system level and process changes.
 - Support from Hawke's Bay DHB to roll out the respiratory checklist to other pharmacies to use as a template for MUR.
- 2 **How did you communicate your progress and results to others?**
 - Our project was entered into the Hawke's Bay Health Awards 2019 and we were very lucky to win the Supreme Award and Commitment to Quality Improvement and Patient Safety Award – this has been garnered some interest from different organisations from other parts of New Zealand.
 - Project storyboards were shared at Whakakotahi learning sessions.
 - The project story was published on the Health Quality & Safety Commission website and in the Commission e-digest.
 - The project story was published in the *New Zealand Herald*.

Information for other teams contemplating a similar project:

1 What were the lessons learnt?

- The GP practice was happy to support the project, the pharmacy was mindful to not step on toes.
- The DHB was on board with funding free spacers. One GP in Napier agreed to sign the MPSOs for free spacers.
- Working together with the GP, the GP practice will refer patients to the pharmacy, meaning improved understanding of asthma and the medicines, and therefore improved asthma control and management.
- Multidisciplinary and interorganisational teamwork – input from multiple health professionals and patients.
- How to carry out data collection with timeframes and measures.
- Availability of resources/support.

2 What would you recommend to a team that wants to take on a similar project?

- Put a team together who are passionate about childhood respiratory disease.
- Develop a checklist or other system that will work within your organisation's workflow.
- It's not hard once you get started.

3 Are there any future steps or ongoing work that you are intending to continue with on this project topic?

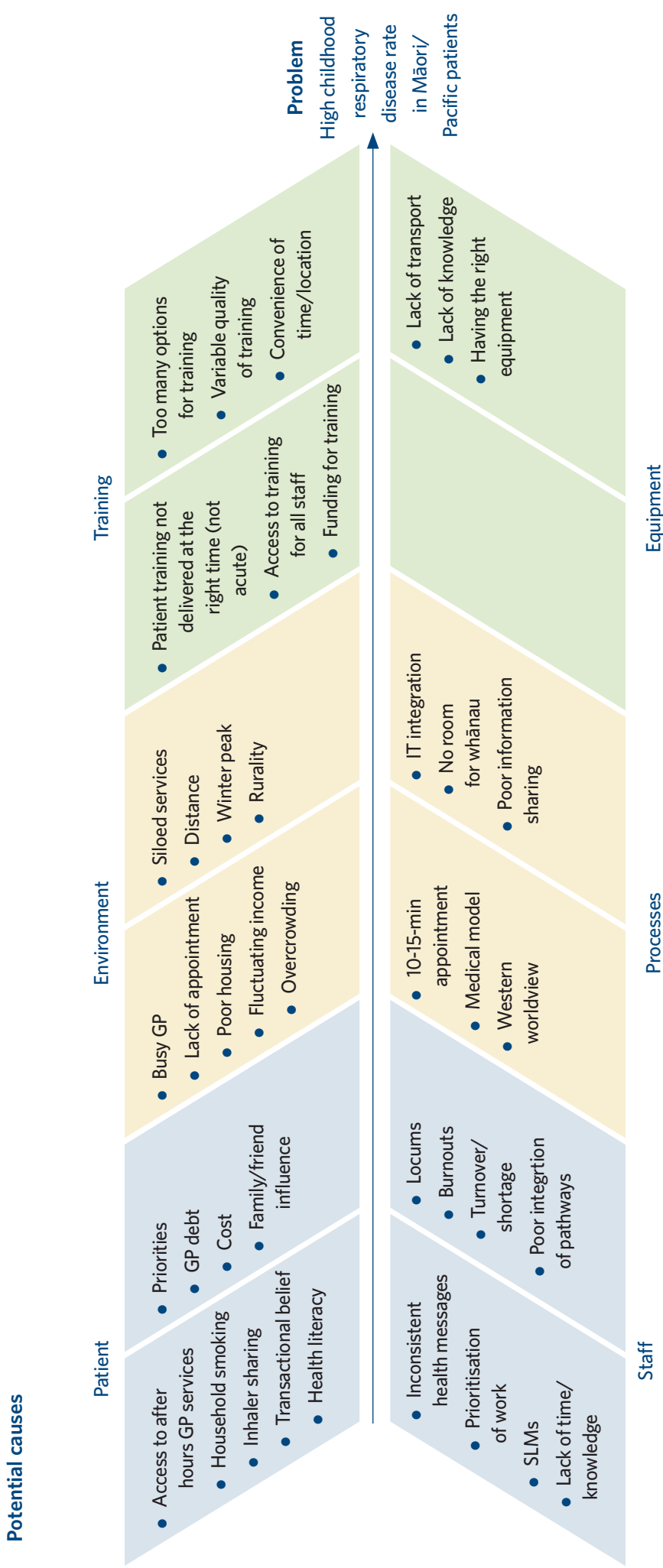
- Share the checklist with other pharmacies and continue to refine the checklist.

Acknowledgement

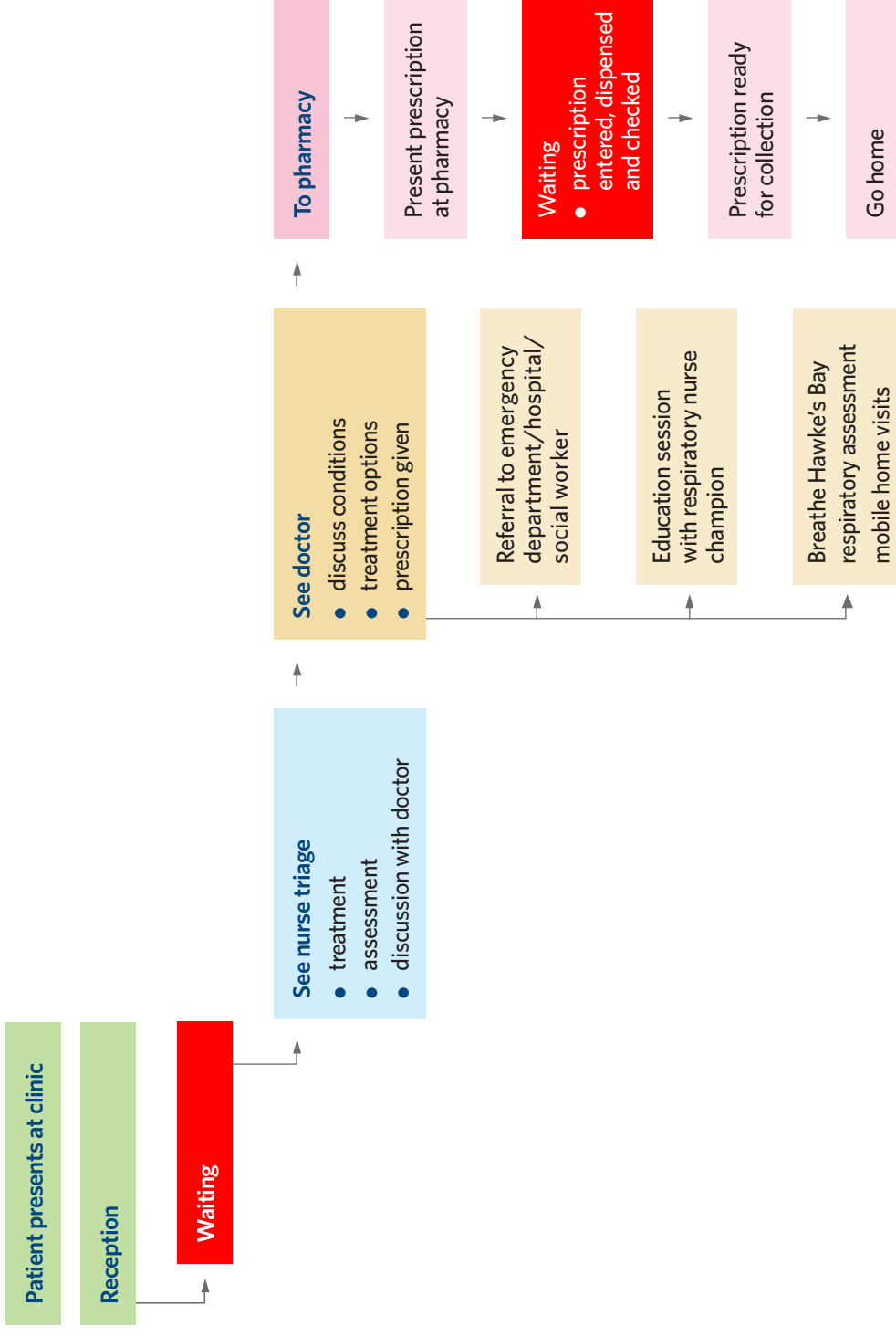
Thanks to Samantha Tie and Alex Chan at Unichem Russell Street, Hastings, for providing the information for this Whakakotahi primary care improvement case study.

Email: hastings@unichem.co.nz

Appendix 1: Fishbone cause and effect diagram







Appendix 2: Process flow diagram







Appendix 3: Childhood asthma control test (ACT) for assessing asthma control in patients 4 to 11 years of age

The Childhood Asthma Control Test for Assessing Control in Patients 4 to 11 Years of Age





1. How is your asthma today?

 0 Very bad	 1 Bad	 2 Good	 3 Very Good	<input type="checkbox"/>
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2. How much of a problem is your asthma when you run, exercise or play sports?

 0 It's a big problem, I can't do what I want to do.	 1 It's a problem and I don't like it.	 2 It's a little problem but it's okay.	 3 It's not a problem.	<input type="checkbox"/>
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3. Do you cough because of your asthma?

 0 Yes, all of the time.	 1 Yes, most of the time.	 2 Yes, some of the time.	 3 No, none of the time.	<input type="checkbox"/>
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4. Do you wake up during the night because of your asthma?

 0 Yes, all of the time.	 1 Yes, most of the time.	 2 Yes, some of the time.	 3 No, none of the time.	<input type="checkbox"/>
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Appendix 4: PDSA – respiratory warrant of fitness

Change idea:

Develop a checklist as a tool for conducting patient education session

Questions:

- Is the checklist helpful (staff perspective)?
- Is the respiratory warrant of fitness helpful (patient perspective)?
- Is the length of time for a respiratory warrant of fitness satisfactory for all parties?

Prediction:

Feedback from staff and patient to help improve the checklist (addition/removal), length of time will be 20 minutes for respiratory warrant of fitness

Measures:

Time, patient satisfaction score

Respiratory warrant of fitness checklist and consent form

Patient Name:			
Address:			
Phone Number:	Mobile:		
DOB	Ethnicity:		
GP Name:	NHI Number:		
GP Phone Number:	GP Address:		


Initial Consultation

Do you have asthma? <i>If 'No', then can still do education but cannot be a part of the project</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Are you willing to take part in the project? <i>Explain what the Respiratory WOF entails and give information leaflet to read</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Are you happy for one of our staff to follow you up monthly with a phone call? <i>If 'No', then can still do education but cannot be a part of the project</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
What is your current Asthma Control Test score? <i>Explain what the ACT is and if not already completed then complete (ACT takes us an idea of where your asthma control is at right now)</i>	Score =
What is your goal Asthma Control Test score? <i>(your ACT goal is where you would ideally like to see your asthma control at)</i>	Score =
Do you have a spacer to use with your inhaler(s)? <i>If 'No', then provide and demonstrate use when discussing inhalers</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Do you use a preventer inhaler? <i>If 'yes' or they should be using a preventer then do education (see next page)</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Do you use a reliever inhaler? <i>If 'yes' or they should be using a reliever then do education (see next page)</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Have you had the flu vaccination this year? <i>If 'No', then offer, and check if qualifies for funded option</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>
Do you or anyone you live with currently smoke? <i>If 'yes' then offer smoking cessation advice</i>	Y <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/>

Information checklist for patient	Completed ✓
<p>Preventer</p> <ul style="list-style-type: none"> • Explain what preventer inhaler is • Adherence/usage • Check technique +/- spacer • Breathe mouth • Provide written information if needed <p>Reliever</p> <ul style="list-style-type: none"> • Explain what reliever inhaler is • Check technique +/- spacer • Check frequency of use (if using often then discuss review by GP for asthma management) • Provide written information if needed <p>Tips (where appropriate)</p> <ul style="list-style-type: none"> • Sports – remember to bring inhaler • Allergy control • Ensure have extra inhaler so does not run out unexpectedly • Delivery services • Repeat reminder system <p>Further education (where appropriate)</p> <ul style="list-style-type: none"> • Smoking cessation (for patient and/or whānau) • Discuss referral to Exercise classes by or respiratory nurse champions <p>Others notes or interventions completed:</p>	
<p>Questions answered by (patient or guardian name):</p>	<p>Date:</p>
<p>Date and Time completed</p>	
<p>Completed by – Name of pharmacist:</p>	
<p>Signature:</p>	

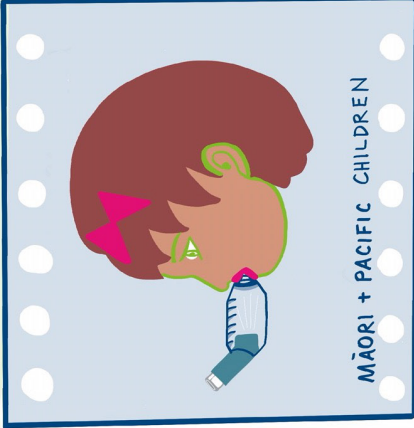
Available as a download [here](#).

Appendix 5: Project infographic



OUR AIM

80% of Māori + Pacific children (0-18 yrs) improve their asthma control test (ACT) score from current score to target score by December 2018



CHILDHOOD RESPIRATORY

MĀORI + PACIFIC CHILDREN

WARRANT OF FITNESS

CASE STUDY: 'Johnny' - 3 years old + placed with an Oranga Tamariki Caregiver who smoked. Caregiver given info. to help stop smoking. He was registered with a G.P. Referred to Breathe Hawkes Bay support foundation.

Positive outcome: improved health literacy + understanding of asthma management - wraparound care, integration + consumer engagement.

WHAT WE DID:

- ★ Let patients choose their own target
- ★ Spacer + mask were available at our pharmacy
- ★ Referral pathway between pharmacy + Breathe Hawkes Bay

WHAT WE DID... (Continued)

- ★ Respiratory warrant of fitness checklist developed + tested with patients
- ★ Patient education session developed
- ★ Teaching sessions for staff

RESULTS:

- ★ The number of preventer inhalers has steadily increased over time of the project from a median of 7.5 to a median of 12.5
- ★ Average ACT scores increased from 13.7 to 21.7.

RESULTS CONTINUED:

- ★ Patients who achieved their ACT score went from 0% at the beginning to 83% at the end of the project.
- ★ A case study clearly described the patient and whānau/family impact through a reduction in urgent care visits.

KEY LEARNINGS:

- ★ Funding + resourcing are ongoing issues.

