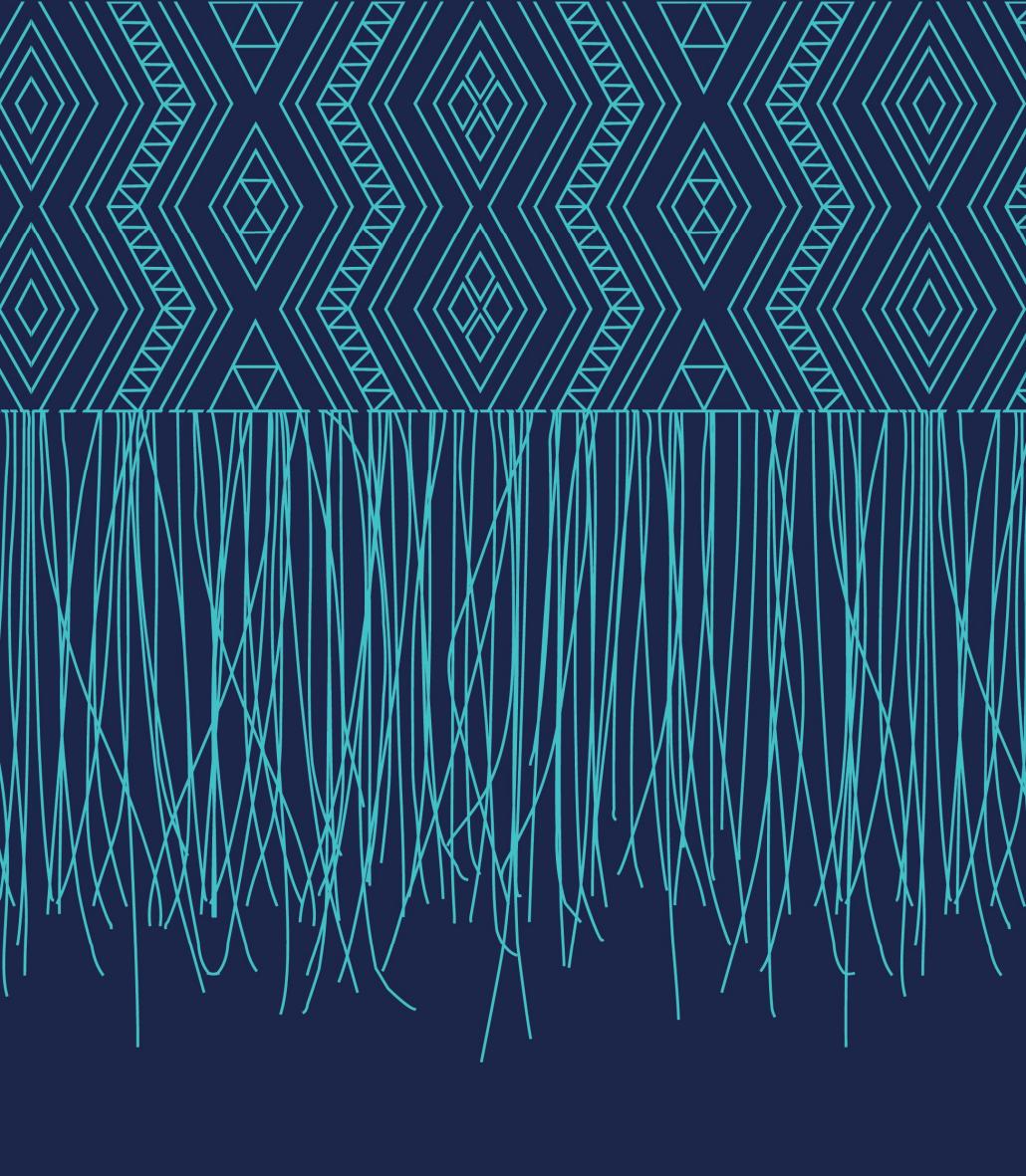




# National Event Management Service (NEMS)

February 2024



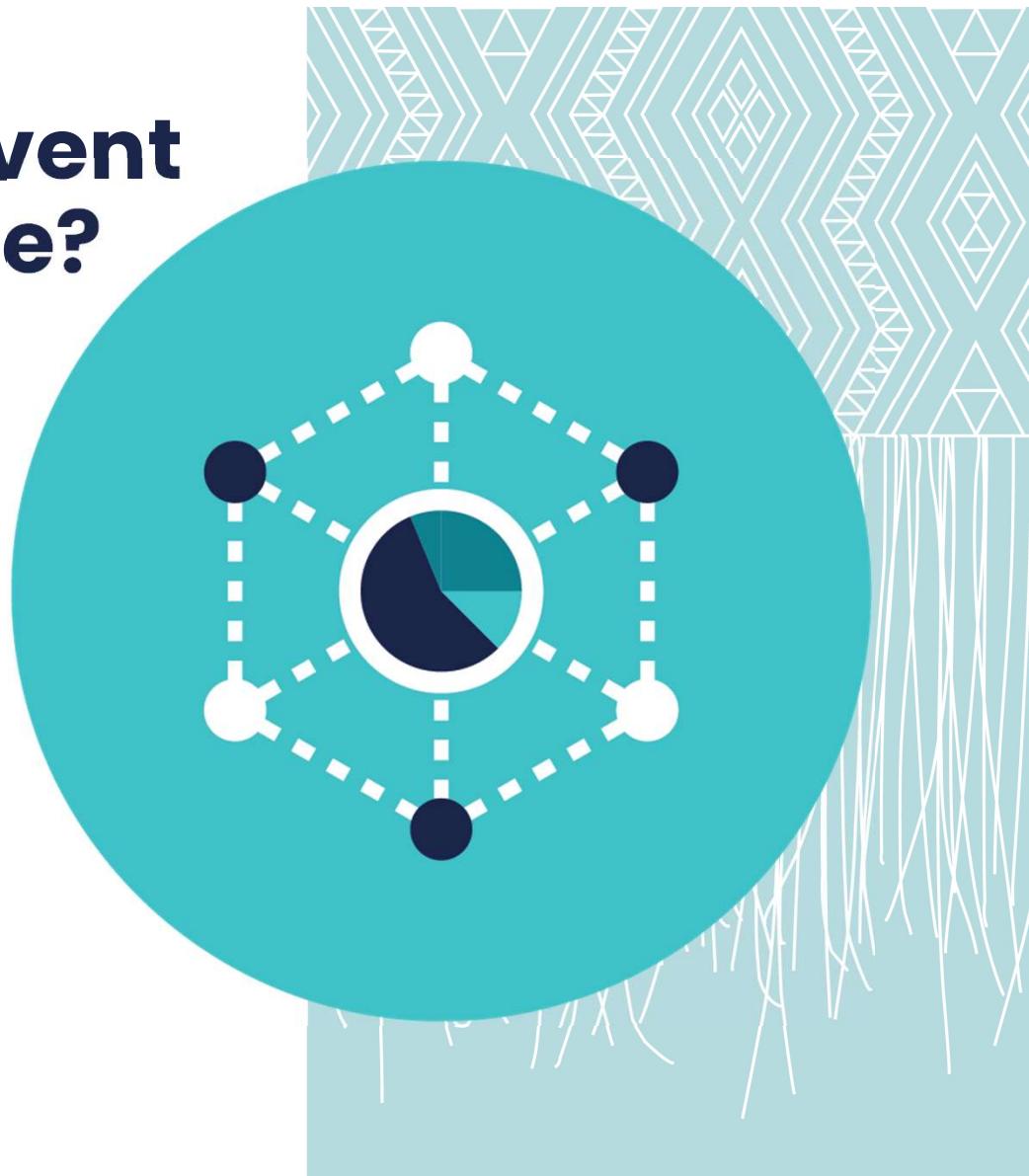
# Key takeaways

- What is a National Event Management Service
- What is the potential value-add to the health sector

# What is a National Event Management Service?

A service that sends messages (notifications) to notify other systems who have registered an interest of a change event in a source system

For example: Facebook sends messages (notifications as an email) to you of changes to a friend's Facebook status



# Key Terms

## Event

In the context of an Event Management Service:  
A data change event in any one system that prompts a notification.  
Also known as "Topics".

Examples: Patient admission to hospital, changes to a providers practicing certificate status.

## Topic

A special storage or queue that change data events are published to.

Examples: A copy of the patient admission data event is held in a queue managed by the NEMS.

## Publisher

An entity that makes an event available to the National Event Management Service. Sometimes called "producers".

Examples: A hospital PAS, the NHI (National Health Index).

## Subscriber

An entity that tells the NEMS that it wants to receive notifications of a specific event. Sometimes called "consumers"

Examples: GP PMS, a hospital PAS

# Key Terms

## Polling

A system-to-system technique used to retrieve data. Requests are made at regular intervals to check if there is new data available and retrieve it.

Effective? Yes  
Efficient? No

## API *(Application Programming Interface)*

A software interface that allows two applications to interact with each other without any user intervention.

Examples: NZPost parcel tracker. GET patient FHIR API

## Interoperability

The design of things to work together.

Example: All the electronics sold in a country plug into a standard power supply in that country.

A heartrate monitor integrates with a hospitals system out of the box.

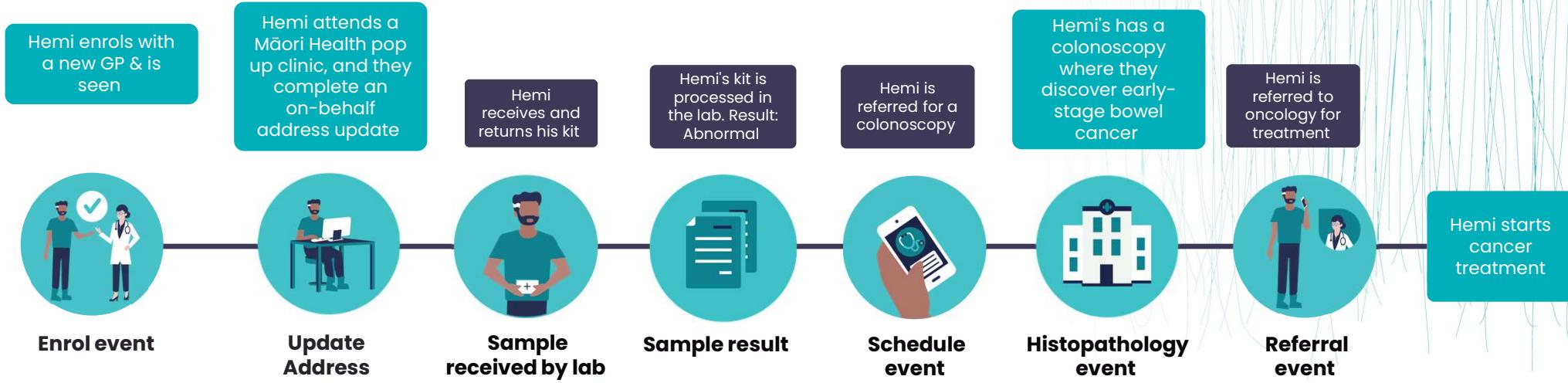
# The challenge

- Data about health care consumers changes daily
- Data changes because of “events” occurring across the health ecosystem. examples
  - Someone is referred to a specialist
  - Attends the emergency department
  - Gives a new address at their GP
- Some data is updated across systems, but there is limited automatic notification of important data changes
- This is due to:
  - diverse systems and technologies
  - lack of interoperability standards



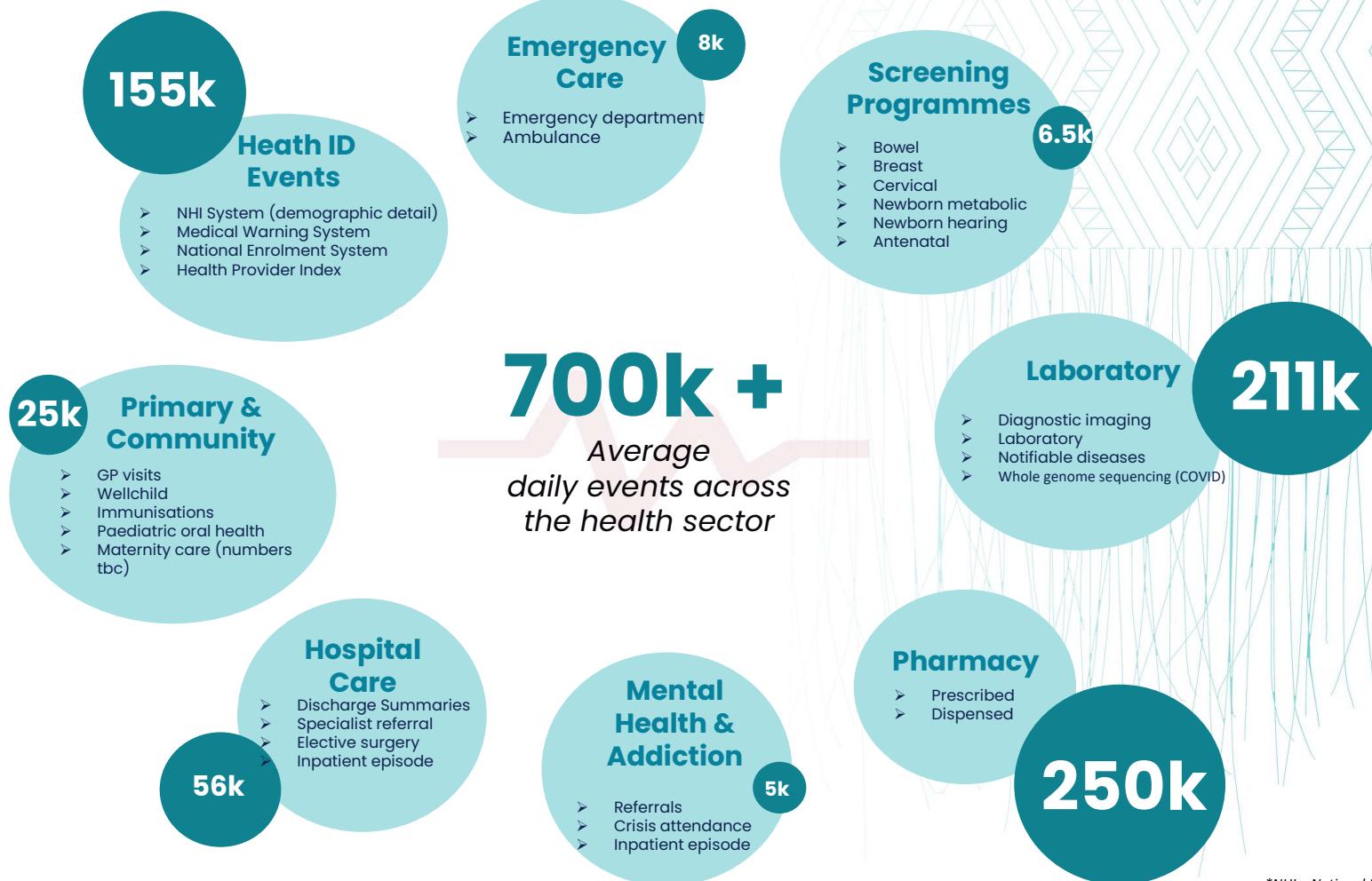


# Hemi's Bowel Screening Journey



A representative health consumer journey

# NZ Health System - Consumer Centric Events



\*NHI = National Health Index

# Connecting the dots



# What happens now?

- If someone (for example) updates their address, this will only be reflected on the NHI if the update took place in a settings such as a hospital, general practice, pharmacy
- Other health services and systems won't be alerted to the address change
- To get the updated details, those systems needs to 'poll' the NHI



**23k**

NHI: demographic  
updates per day  
(Sep 2022 HIP data)



*"We currently publish demographics updates from four local PASes to the regional Clinical Portal app. This creates problems due to data discrepancies between PASes, so if records in our PASes were automatically updated via subscription, this would resolve this issue. It would also dramatically improve our general patient admin overhead, as regional data entry duplication would be abolished or reduced."*

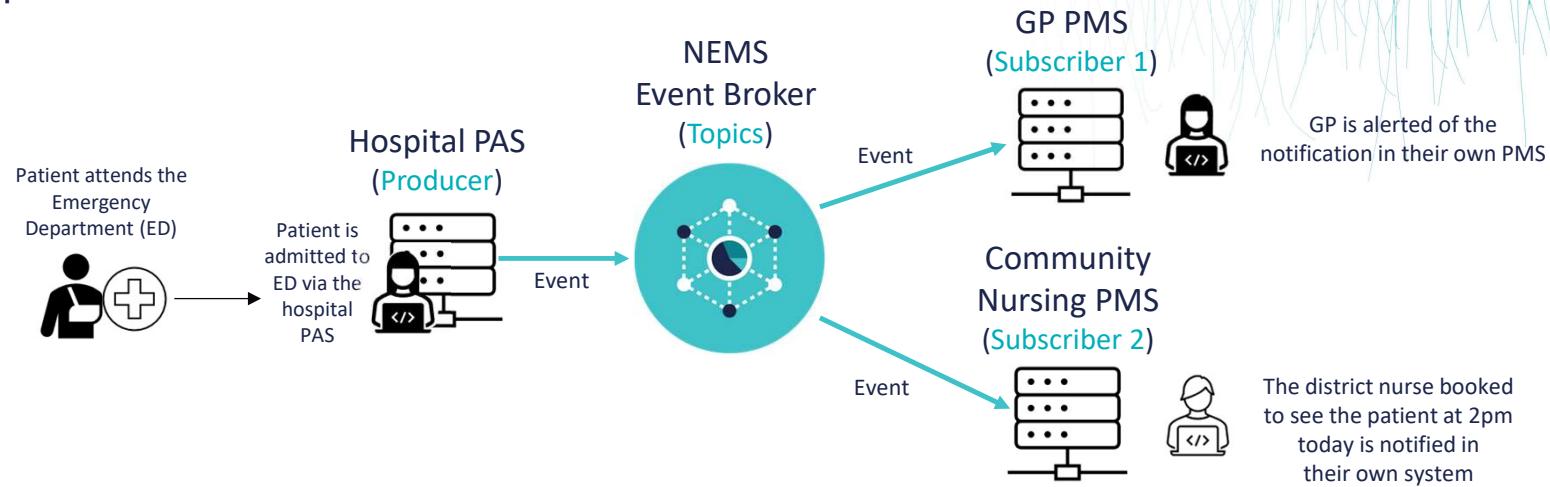
# The National Event Management Service

- Focuses on alerting of information changes occurring in systems of record (for example, PMS, PAS, Lab systems etc).
- Will let healthcare providers know when information has changed (*e.g., patient death date, address updates*), or when they have had an interaction with the healthcare system (*e.g., visited ED, discharged from hospital*).
- These notifications are sent system to system. End users will be notified of data change events within their system of choice.
- Notification of data change events will be broadcast to all subscribing systems in real time (*eliminates the requirement to poll for changes*).



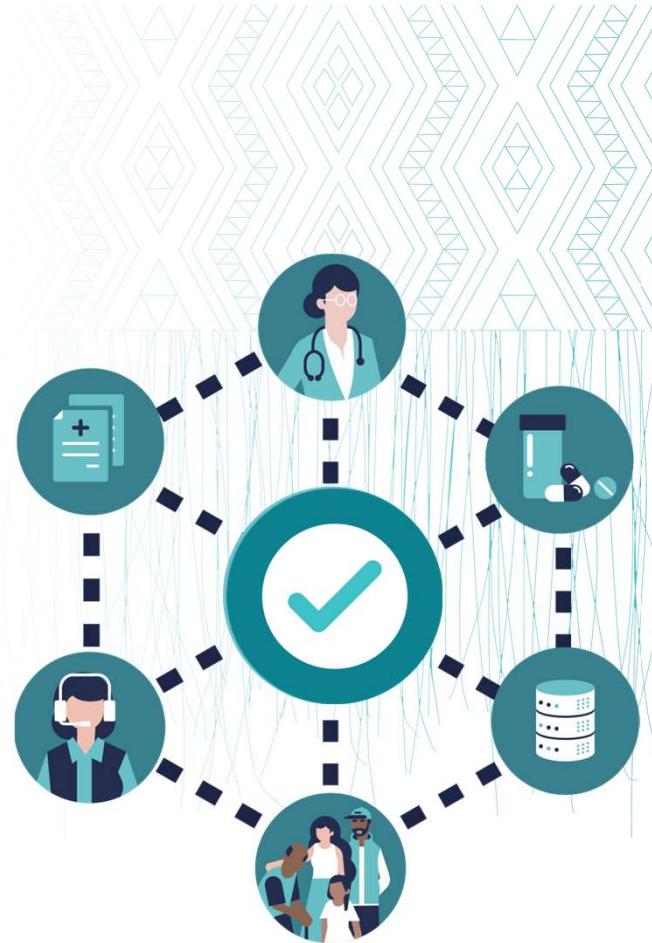
# The future

- Systems **subscribe** to notifications of data change events (**topics**) most relevant to them
- Subscribing systems are alerted by the NEMS when there has been a change in information (e.g. a patient is admitted to the emergency department)
- The new information can be automatically updated in the subscribing systems using an API
- A **subscribing system** only needs to query a provider app service once it has been **alerted** new information exists (reducing the need for polling)
- Filters may be applied to subscriptions to make them targeted, for example GPs could subscribe to their enrolled patients



# Benefits: How and to who

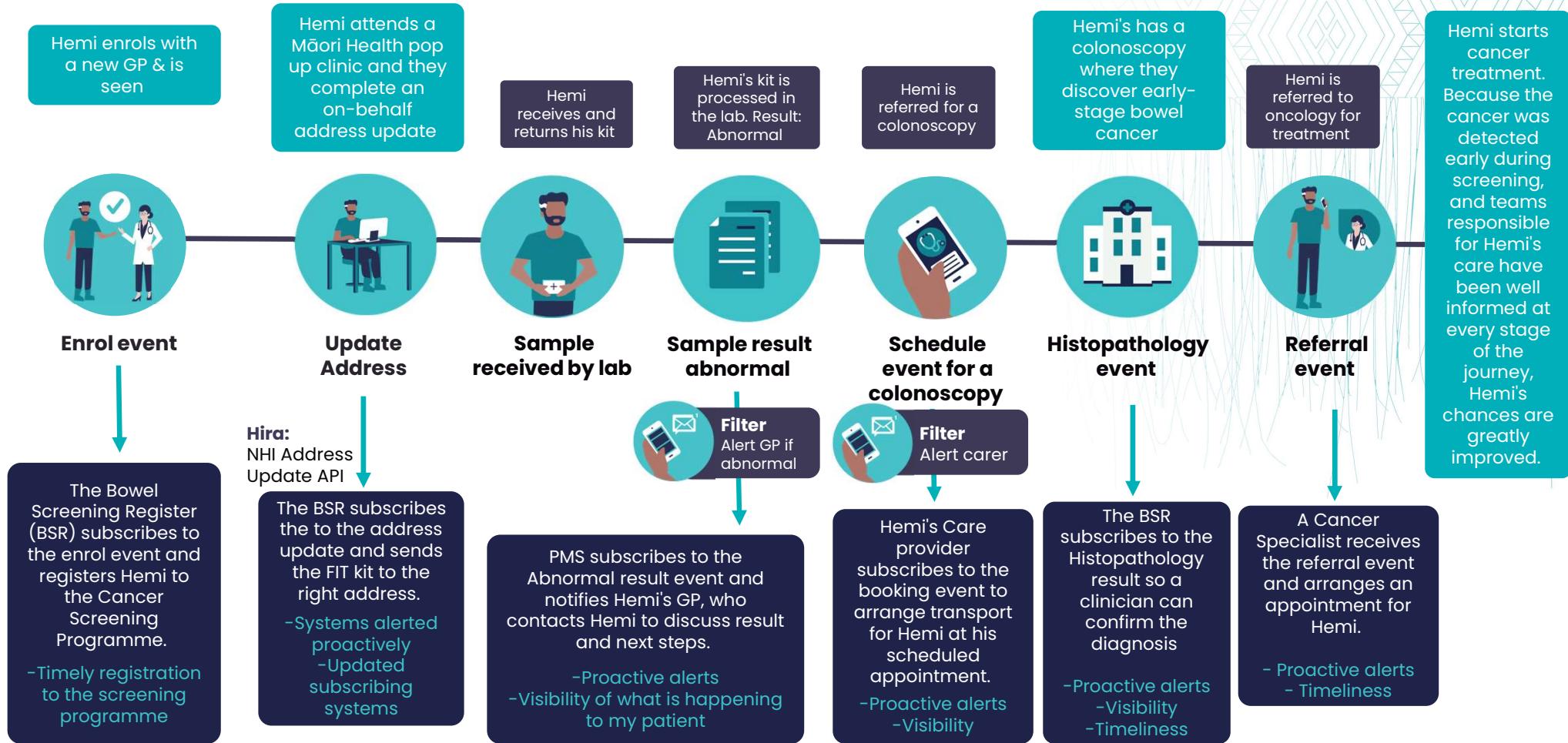
- Healthcare providers have broader and timely visibility of what's happening to patients:
  - Eg, know when a specialist referral has been accepted for a patient, or when they have been discharged from hospital
  - Notified of interactions outside their direct health care setting, eg, attendance to an afterhours clinic
- Less time spent updating data manually
- Reduced need to regularly poll databases for changes
- Systems alerted proactively when something has changed, rather than having to 'listen' for change
  - Facilitates: Proactive process change (eg cancelling future appointments when a death event is notified, deferring community nursing appointments when a patient has been admitted to hospital)
- Updated information fed directly into health subscriber's systems



Afterhours "These help us understand state, we don't need the data but knowing that someone went to after-hours improves our data about patient risk,"



# Hemi's Bowel Screening Journey



# Recap

- What is a National Event Management Service?
  - A service that sends notifications to notify other systems who have registered an interest of a change event in a source system
- How does it add value?
  - Broader and timely visibility of what's happening to Healthcare consumers
  - Less manual updates
  - Reduced polling
  - Systems alerted proactively
  - Facilitates: Proactive process change
  - Updated information fed directly into subscriber's system of choice

## Timeliness of information



*"Currently we receive death notifications via datafile download and automated processing into our PAS. It would be a big improvement to replace this with a **realtime interface**, as our clinicians sometimes end up in regrettable situations with patients' families due to out-of-date death data in our local PAS and connected systems."*

A service that sends messages (notifications) to notify other systems who have registered an interest of a change event in a source system



*"Events support a wider ecosystem that is involved in patient care. Being able to raise events when **welfare** has been requested or delivered improves information flow between disparate organisations."*

