NZ TELEHEALTH
FORUM & RESOURCE CENTRE

Enhancing Community Support Models through Remote Patient Monitoring utilising the Patient Anywhere Clinician Elsewhere model:

RPM@PACE

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Introduction:

Remote Patient Monitoring (RPM) has emerged as a valuable, and cost-effective addition to modern healthcare, offering a means to monitor patients' health remotely and provide timely interventions that improve or maintain the quality of care provided [1] Remote patient monitoring may include devices, Internet of Things, Artificial Intelligence, or patient reporting of symptoms and self-completed assessments (such as BP, glucose, weight), including patient reported experience measures (PREMS) and patient reported outcome measures (PROMS). Cost savings are achieved through reduced bed days, decreased hospital admissions, and enabling early discharge [2].

The Patient Anywhere, Clinician Elsewhere model further enhances RPM by enabling remote centralization via a national, regional, or local hub of healthcare providers to deliver care from any location, thereby improving accessibility and efficiency. This brief paper explores the application of the PACE model to RPM, highlighting its benefits, challenges, and prospects. The model is illustrated with 3 basic case examples and references are included.

Background

In early 2024, the Patient Anywhere Clinician Elsewhere model and the NZ Remote Patient Monitoring Guide were published by the NZ Telehealth Forum. These models arose from working groups within the NZ Telehealth Forum, during 2024 both working groups met separately and then combined with an aim to build upon the PACE model, using supporting information from various small local and regional pilots. The focus was on demonstrating how an RPM programme could roll out with national support in a device-agnostic manner, in accordance with PACE.

The model is demonstrated as having 3 levels where patients and whanau can be referred or seek help from community providers, inpatient services or primary care and be connected to a Clinician elsewhere in the country. The model allows for escalation, onward referral and integration and either resolution of the concern or ongoing care. This model allows for a broad range of clinicians to serve a large volume of patients who may live outside of their area and supports specialist care for example for patients with rare cancers or conditions that otherwise may need to travel large distances.
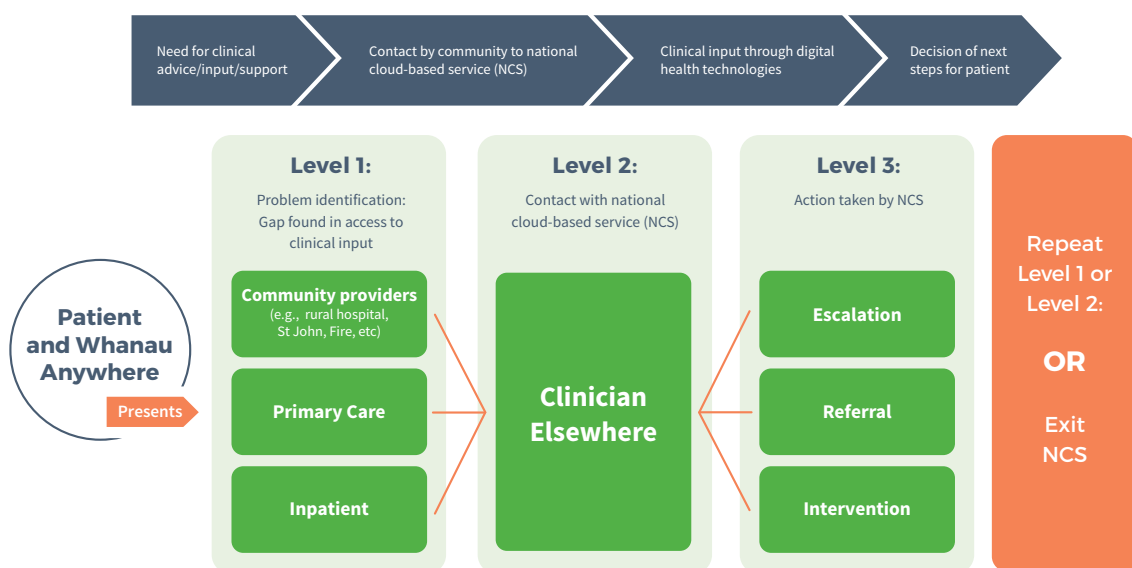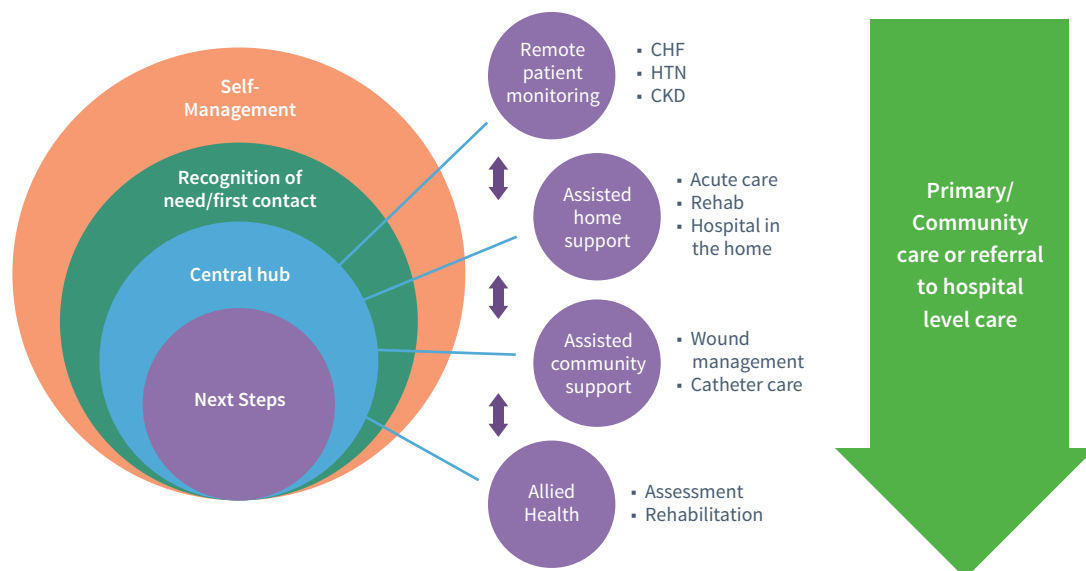

Figure 2. PACE workflow (a revision of the PASE model)

This visual representation below showcases the PACE model's application within RPM (RPM@PACE), highlighting its potential to enhance healthcare delivery. The core of the model is a nationally supporting clinical hub which provides expert telehealth-enabled clinical assistance to smaller in-person clinical centres which may supply telehealth, in-person or hybrid care. Hybrid care is showing great promise internationally giving opportunities to support on the ground Clinicians and grow suitable workforce, particularly in rural areas.

The RPM@PACE model enables expansion of current models of services such as Hospital in the Home (HiTH) with an emphasis on top of scope working, supporting communities which may otherwise not be able to support a HiTH/RPM model and providing access to specialist clinicians that may not be otherwise available across New Zealand.

It is worth noting that before the COVID-19 pandemic RPM in both New Zealand and Internationally was principally centred around chronic illness with a few early models of supported HiTH. During the pandemic there has been a rapid expansion in RPM to assist with acute patient management and this is a growing area of interest globally to address Emergency Department demand and improve hospital bed capacity.

Self-Management
Recognition of need/first contact
Central hub
Next Steps

Remote patient monitoring
- CHF
- HTN
- CKD

Assisted home support
- Acute care
- Rehab
- Hospital in the home

Assisted community support
- Wound management
- Catheter care

Allied Health
- Assessment
- Rehabilitation

Primary/Community care or referral to hospital level care

Self-management, may be supported

First contact primary care and community first contact including opportunities for the un-enrolled and opportunistic referral pathways from the community

Central clinical hub allowing for clinical support, a device agnostic platform available for crisis, After hours and integrated care models. Could include referral and coordination pathways

Next steps including HiTH, POCT, wound management, monitoring, community and ARC support

Must be able to circle back into primary/community

Developing the RPM @ PACE model

The integration process involved several key steps:

- Presenting the PACE model to the RPM working group.
- Brainstorming initial ideas with the RPM group.
- Reviewing ideas with the PACE group.
- Presenting and refining the model to both groups.
- Bringing both groups together to reflect and further refine the model.

These steps were supported by agreed principles:

- Patient centric and equity focused: The approach focuses on the needs and preferences of the patient with an equity lens.
- Top of scope practice: Ensuring that healthcare professionals work to the full extent of their training and capabilities.
- Built to scale up: Designed to be scalable to accommodate growing needs.
- Pick and mix tailored care: Offering customizable care options to meet individual patient needs.
- Primary/community care guided and integrated: Emphasizing the integration and guidance of primary and community care.
- Locally delivered and nationally supported: Services are provided locally with support from national resources.
- Quality and focused: maintains or improves on current quality of care
- Evaluation focused: Continuous evaluation to improve and adapt the care model.
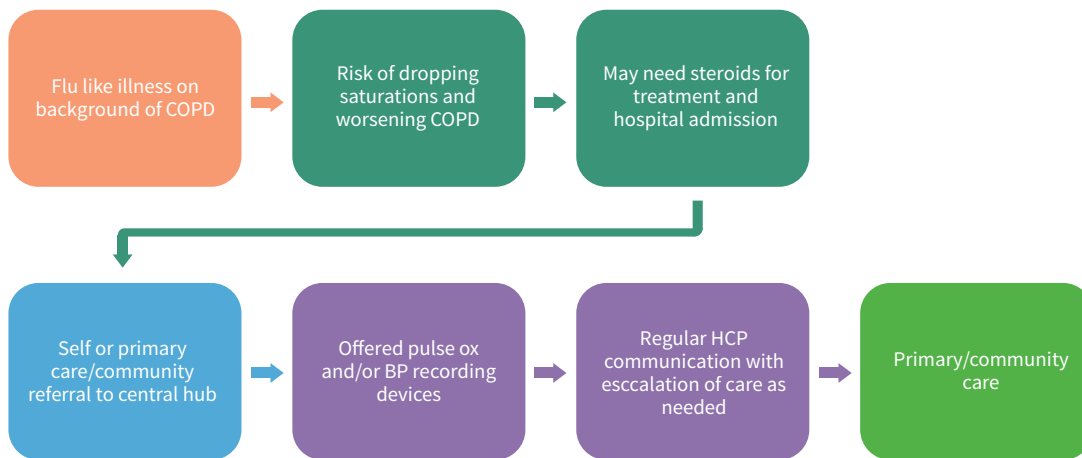- Easily accessible by referrer without elaborate steps to engage patients in care.

Proposal

Building on International and local successes and experience the integration of RPM with PACE should be developed to enhance community support models, particularly where primary care can be actively involved. The following key potentials have been postulated.

- Improved Patient Outcomes: RPM allows for episodic and continuous monitoring of patients' health regardless of location, leading to early detection of potential issues and timely interventions and improved management of chronic conditions.
- Increased Efficiency: The PACE model enables healthcare providers to deliver care remotely, reducing the need for in-person visits and thereby increasing efficiency.
- Enhanced Accessibility: By leveraging the PACE model, healthcare services can be extended to remote and underserved areas, improving accessibility for patients.
- Decreased length of hospital stay and improved access with incorporation of HiTH type models.
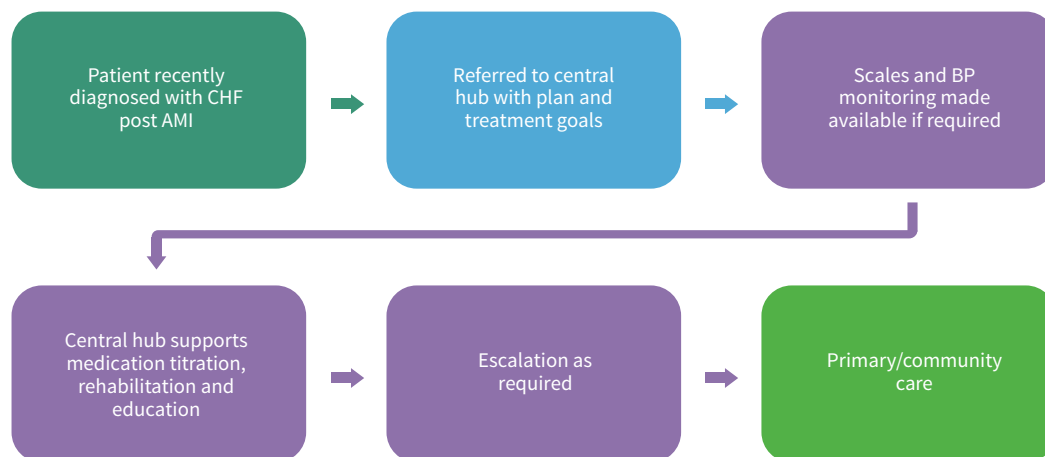
Case example 1: acute exacerbation of chronic illness

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Flu like illness on background of COPD → Risk of dropping saturations and worsening COPD → May need steroids for treatment and hospital admission →
Self or primary care/community referral to central hub → Offered pulse ox and/or BP recording devices → Regular HCP communication with esccalation of care as needed → Primary/community care
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A patient with COPD develops a flu-like illness. They can self-refer or be referred by a primary care provider to a central hub. The hub may offer a pulse oximeter or BP device and provide regular health checks. Escalation to a clinical team (GP, hospital, etc) occurs if required.

Case example 2: Early supported Discharge

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Patient recently diagnosed with CHF post AMI → Referred to central hub with plan and treatment goals → Scales and BP monitoring made available if required →
Central hub supports medication titration, rehabilitation and education → Escalation as required → Primary/community care
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A patient recently diagnosed with Congestive Heart Failure post-Acute Myocardial Infarct is referred to a central hub with a plan and treatment goals. The hub supports medication titration, rehabilitation, and education, facilitating early supported discharge (otherwise known as "Hospital in the Home or HiTH")

Case example 3: Use of image to support long term care
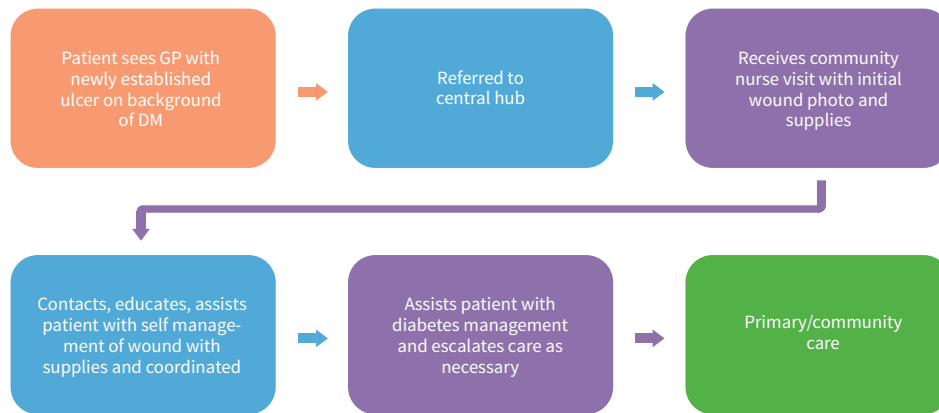
A patient with diabetes presents with a new leg ulcer. They are referred to a central hub and receive a community nurse visit with initial wound photo and supplies. The hub manages care remotely, guiding the patient through wound care and diabetes management.

Challenges

Despite the benefits, several challenges were identified:

- Integration with Existing Systems: Ensuring seamless integration of RPM with existing healthcare systems and workflows remains a challenge. A national coordination centre could provide the support required and ability to scale.

- Data Privacy and Security: Protecting patient data and ensuring privacy is crucial in the implementation of RPM.

- Training and Support: Providing adequate training and support to healthcare providers and patients is essential for the successful adoption of RPM

- Workforce and workload: ensuring appropriate levels of staffing without diverting staff from other required healthcare services is critical

- Data (information) overload: use of appropriate processing of data, such as with AI, is required to prevent information overload and valuable and needed information being missing/not seen

- Data accuracy: use of approved/regulated devices, including wearables, is needed to ensure accuracy and trustiness of data collected

Recommendations

- **Cost Model Development:** Combining current models into a hybrid model to build a cost model focusing on cost reduction, particularly for "hospital in the home" models.

- **Expansion and Evaluation of Pilot Programs:** Expanding pilot programs to include more regions and healthcare providers.

- **Integration with Primary Care Models:** Noting that many pilots have not involved primary care providers.

- **Adoption of Pilot programs into business as usual;** once proven, pilot projects are adopted and implemented nationally

- **Development of Standardized Protocols:** Creating standardized protocols and guidelines for the implementation of RPM.

- **Collaboration with Stakeholders:** Engaging with stakeholders, including healthcare providers, patients, communities and policymakers, to ensure the successful adoption of RPM

Conclusion

The integration of RPM with the PACE model offers a promising approach to enhancing community support models. By leveraging the strengths of both RPM and PACE, healthcare providers can deliver high-quality care remotely, improving patient outcomes and increasing efficiency. This model has the potential to address health targets such as faster cancer care, decreased wait times and reduced length of stay. More information can be found on New Zealand projects at **Project and Research Library - Telehealth**

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