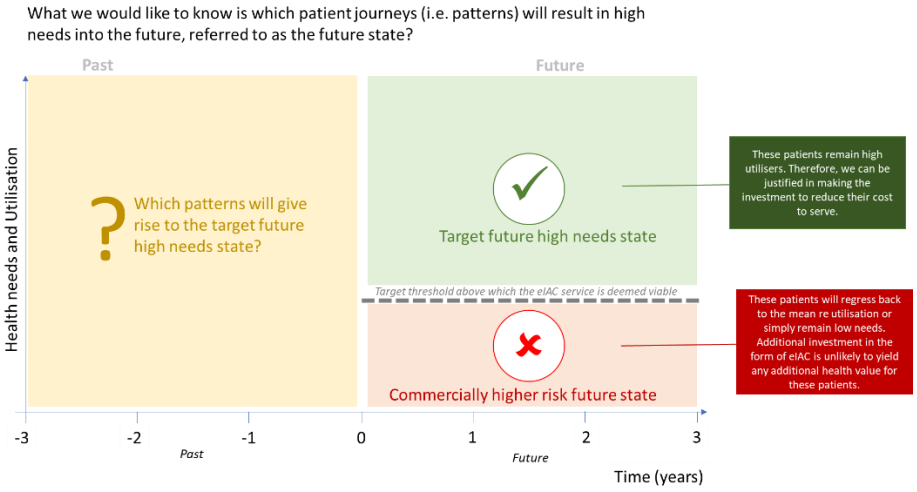
Blueprint objective	**3. A health workforce that exists to serve and meet population health needs**
Case example	**MeCare (Mobile Enabled Care) Through the Power of Partnerships** MeCare - Mobile Enabled Care. Realising the Benefits of Patient Led Healthcare – Integrating Smart Home technologies and personalising services to improve experiences and health outcomes. ■ Impacting on the patient journey ■ Empowering clinicians ■ Creating resilient communities ■ Partnering to improve.
What is the community need or problem being addressed?	West Moreton is the fastest growing Health service within Queensland, facing a 51% population increase by 2026[1]. The West Moreton population with chronic disease was showing an average increase in hospital bed days of 28 days per year and cost per day /per patient increasing by 20%. Thereby increasing the burden of chronic disease within the area and creating a burgeoning demand on resources particularly for those high needs chronically ill patients. 
What is the approach being implemented?	In 2016, West Moreton Health and Philips entered into a partnership to establish a trial program based on telehealth and a virtual care model (MeCare). MeCare aims to deliver a scalable innovative solution, better managing, the growing burden of chronic disease within West Moreton Health. MeCare technology enables patients to, securely submit from their home biometric and psychosocial data to the Philips clinical software that is monitored by a multi-disciplinary clinical team whom are ready to intervene early if a patient is outside the normal maintenance parameters. 

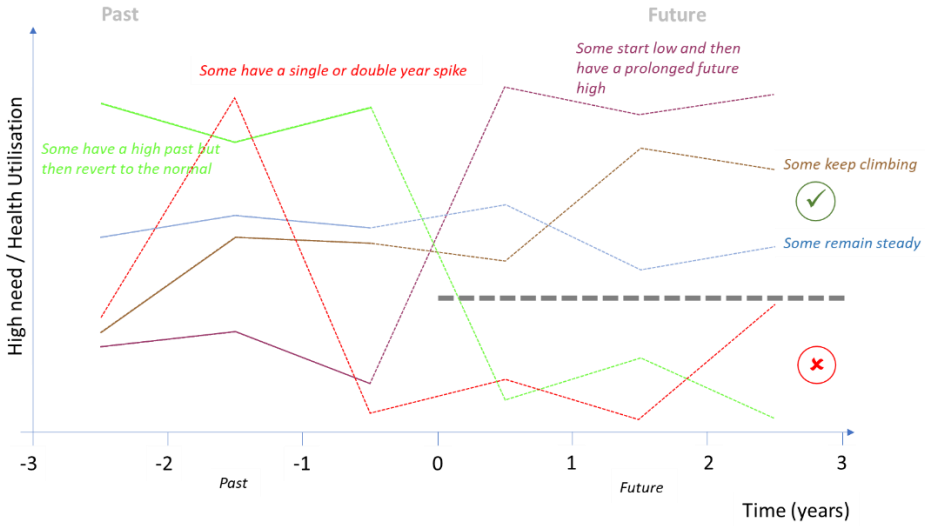
What have been the key enablers to the success of this approach?

Identifying the right patients to target is a critical component of the model.



Using 7 years of data, we utilise machine-learning algorithms to predict patients that will remain persistently high needs or have a very high probability of becoming high needs in the next year. Taking into consideration patient demographics, social characteristics, patterns of health utilisation, disease profiles including comorbidities, complexities, and health system encounters such as inpatient, emergency and outpatient clinics.

High need and health utilisation patterns with a target.



The partnership between MeCare and Philips has seen a positive impact on trending data since its implementation. The virtual model of care, tailored to meet the need of the West Moreton community and is significantly improving the quality of life for our patients living with complex conditions. Regular review and understanding of patient and performance data have enabled a good understanding of the approach and allowed for agility in flexibility in management.

Some of the key successes are:

Bed days were forecast to be at 25.16 Days per Annum and rising if they had NOT been enrolled in MeCare. MeCare has achieved:

- 30% bed day savings from forecast trends (=1,571 bed days saved)
- 20% bed day savings from baseline (= 981 bed days saved).

ED presentations were forecast to be at 6.64 visits per annum and rising if they had NOT been enrolled in MeCare. Mecare has achieved:

- 37% ED visits saving from forecast trends (=395 visits saved)
- 13% ED visits saving from baseline (= 173 visits saved).

Cost of Care: The significant change in bed day usage and ED visits of course has an impact on cost. Current data (as of June 2018) is showing a 24% reduction in inpatient cost alone with an ongoing downward trend.

Patient Outcomes: Meanwhile, we can't forget that savings in health utilisation and cost of care cannot come at the expense of patient outcomes, in particular, the health and wellbeing of patients. Since the program's inception we have continued to see a positive impact on the mental well-being of the cohort (assessed by SF12) for which the mean mental component scores of MeCare participants actually sit above the population mean. Meaning patients on the program are often feeling better than those in the population.

The value proposition put simply is the opportunity to improve patient outcomes at the same time as reducing health utilisation and thereby cost.

$$\text{Health Value} = \frac{\text{Patient Outcomes}}{\text{Health Utilisation / Cost of Care}}$$

What have been some of the challenges to the success of this approach?

Chronic disease by its very nature is complex and the capacity for fluctuations in response, while challenging, are expected. The objectives for the clinician to manage are twofold, to both engage the patients as part of a health behaviour change process and to enable early recognition of signs of deterioration to allow an agile approach to management that does not always need to result in the use of health resources. The model allows for a flexible, tailored approach.

In addition to this, understanding how to manage a large cohort in a seamless and effective way. The algorithmic support of protocols and metrics to assist in the decision-making process enables large-scale management to occur.

Not all of the patients on the program will realise the full potential of the program, and even when they do they may not realise it all of the time. Therefore, it is important to look at the program holistically as it operates at scale, measuring the systemic impacts that it has on the cohort collectively.

What is needed to scale-up the successes?

Funding: Current funding streams need to be sourced against the metrics of the success that these types of programs create. When the methodology for patient selection is applied, to identify the right patients with a high likelihood of remaining persistent utilisers of resources (AUC 0.81); the metrics of decreasing resource use can be aligned with some confidence in the results.

Funding models taking into account the confidence in patient selection as well as understanding the value proposition of reviewing the cohort as a whole mean that current ABF (activity based funding) models are not consistent with the approach. Population health models need innovative funding that focuses on metrics of selection and cohort results.

Scaling to Perform: Population Health is by its very definition the opportunity to impact on the wider group. The capacity to provide for the chronically ill population requires several elements:

1. **The Right Approach**: The model itself provides that capacity to work with a large group focusing attention when and where it is required.
2. **The Right Patients**: The first step to this approach however is ensuing the capture of the right patients; meaning a full understanding through machine learning of the patient journey and health utilisation.
3. **Flexibility / Tailoring**: The ongoing analysis of the patient journey provides the capacity for the model to remain flexible and agile dependent on patient and community need.
4. **The Right Platform**: The platform has capacity to scale as a state-wide resource to manage large scale populations without geographical impediments.

More information

Shannon Wallis
Nurse Unit Manager | MeCare Service | Ipswich Community Health
West Moreton Health
City Plaza | 2 Bell Street Ipswich QLD 4305

07 3413 5702 | 0447 475 748
shannon.wallis@health.qld.gov.au
www.westmoreton.health.qld.gov.au

References

[1] West Moreton Hospital and Health Services Strategic Plan 2017-2021