

Project Title

Improving Patient Care with the Electronic Patient Reported Outcome and Experience Measures Programme

Organisation(s) Involved

SingHealth

Healthcare Family Group(s) Involved in this Project

Healthcare Administration

Applicable Specialty or Discipline

Corporate Communications

Aims

In this article, we take a look at the 'What', 'Why' and 'How' PROMs and PREMs help both patients and healthcare staff.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Additional Information

This article was first published in HealthTech Connect by IHiS.

Project Category

Technology, Digital Health, Telehealth, Data Analytics

Care & Process Redesign, Value Based Care, Patient Reported Outcome Measures,
Patient Reported Experience Measures

Keywords

Online Survey, ZEDOC, Electronic Medical Record

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Improving Patient Care with the **ELECTRONIC PATIENT REPORTED OUTCOME *and* EXPERIENCE MEASURES** Programme



Healthcare institutions globally are increasing their use of Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs) to enhance the patient experience and improve health outcomes. What are they, how do they help both patients and healthcare staff, and how do they differ from each other? In this article, we take a look.

What are PROM and PREM?

They are both surveys or questionnaires that capture feedback from patients.

PROMs focus on a patient's perception of their own health, before and after treatment. It allows them to report on matters such as quality of life, symptoms, physical functions and even emotional well-being, such as their level of pain or distress. It supports person-centred and value-based care by measuring health outcomes from the patient's perspective.

PREM focuses on a person's perception of their experience with healthcare services, such as their time spent waiting, the quality of communication, and if they received enough support along the way.

Sample question

Why use PROMs and PREMs?

Plenty of research has shown that healthcare is improved when patients share how they feel, and what is important to them. Using PROMs and PREMs usually lead to:



Better communication between patients and healthcare professionals, and can lead to earlier detection of health risks and warning signs.



Improved ability to detect worsening of symptoms.



Closing the loop for patients when they are outside the hospital, and helps healthcare staff to **provide more holistic and personalised care** for them.



Improved healthcare services when institutions implement positive changes from feedback received.

In Singapore, both PROMs and PREMs are used at various public healthcare institutions (PHIs), but largely via pen-and-paper, or general survey platforms that are not developed for healthcare. These can lead to data administration inefficiencies, questions that are not benchmarked, and poor usability.

For more effective use of PROMs and PREMs, and a wider adoption across specialties and PHIs, there was a need to find a more configurable, scalable and sustainable electronic solution that is easy to use. The solution also needed to be able to integrate with several other existing healthcare systems to support the wide spectrum of patients, including both surgical and non-surgical patients.

In mid-2019, IHiS, in partnership with PHIs, published a Call for Collaboration exercise to invite suitable partners to deliver an optimal design of an e-PROMs solution. After a robust selection process and pilot in 2020, IHiS partnered with [The Clinician](#), a leader in digital care pathways and patient-reported health data management, to offer The Clinician's e-PROMs and e-PREMs software ZEDOC in early 2021.

Benefits of an Electronic Solution

The rollout of ZEDOC across Singapore's public health system has enabled healthcare providers to digitally capture PROMs and PREMs from patients outside the hospital and analyse the health data in real-time, providing benefits for both healthcare providers and patients.

It also **replaces existing paper forms with an integrated digital platform that automates data capture**, reducing onerous manual paperwork. **Healthcare staff can view these responses on ZEDOC, and easily copy and paste these responses to their Electronic Medical Record.** These responses can be easily compiled and downloaded.

Preview answers X

MOBILITY
1 - I have slight problems in walking about

SELF-CARE
3 - I have severe problems washing or dressing myself

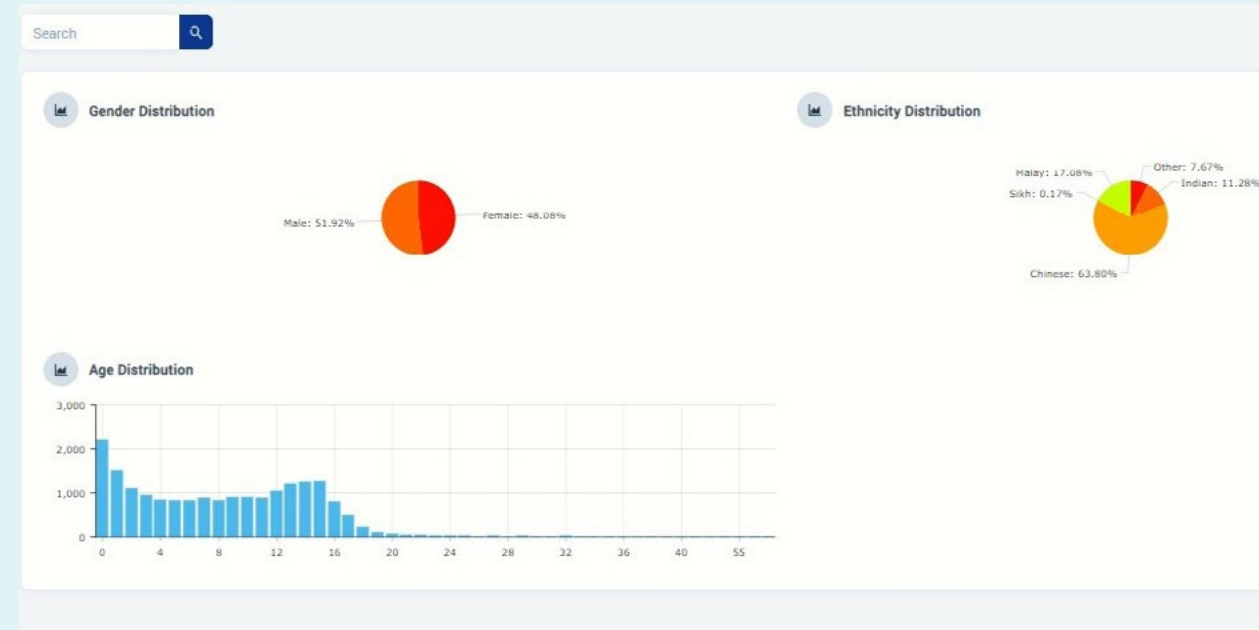
USUAL ACTIVITIES (e.g. work, study, housework, family or leisure activities)
3 - I have severe problems doing my usual activities

PAIN / DISCOMFORT
1 - I have slight pain or discomfort

Cancel

Preview of answers, and easy copy and paste feature to EMR

ZEDOC also **helps healthcare staff with data analysis by automatically calculating PROM and PREM scores** (including composite and summary scores), and presenting the responses back in easy-to-read charts. Patients too, find it more convenient to respond electronically. The **questionnaires can also be displayed in other languages commonly used in Singapore** such as Chinese, Malay or Tamil.



The platform allows sorting by filters

There has been significant interest in e-PROMs and e-PREMs, with more than 1,000 different questionnaires requested by all three clusters. This is due to the solution being easy to use and having comprehensive dashboards. ZEDOC has been implemented at several institutions so far,

such as the Singapore General Hospital (SGH), Sengkang General Hospital, KK Women's and Children's Hospital (KKH). Some departments from the National University Hospital will also be going live soon.



Over
1,000
questionnaire
requests

Use Cases of e-PREMs at SingHealth

SingHealth began the pilots of e-PREMs projects in May 2021 with two Women's Outpatient Clinics in KKH and three Outpatient Clinics in SGH.

At these clinics, paper forms were no longer given out; instead, after the patients' visit to the clinics, an SMS was sent to them within 1-2 working days containing the ZEDOC survey URL. The ability to reach out to all eligible patients with this methodology helps to ensure unbiased sampling, giving rise to a more accurate reflection of patient experience. In addition, it is now possible to increase the sampling base without having to give out huge quantities of paper forms, enabling the two institutions to have a deeper appreciation of their patient's voice.

Overall, the response rate for the pilot more than doubled - about 13.6% for SGH and 19.3% for KKH, which are significant increases from the 4-8% response rate for pen and paper.

Staff also saved time and effort from having to process the paper forms. Accuracy of data is also more complete without illegible handwriting or data entry error. Overall, using the online platform has also lowered the unit cost of survey, as there are no longer costs associated with printing and data entry.

Work is ongoing with other clusters who are interested to onboard ZEDOC, such as Khoo Teck Puat Hospital and NUHS.

MOH is also working with IHiS and the clusters to roll out an e-PROMs pilot project for total knee and hip replacement. This will allow MOH to measure the impact of healthcare services delivered from the patient's perspective. This is expected to start by 2H 2022.

Response rate of pilot for e-PREMs:

SGH -	KKH -
13.6%	19.3%

Overcoming the Challenges

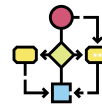
As such an extensive electronic solution was to be the first of its kind in Singapore public healthcare, there was not much reference. There were also many challenges the team had to overcome to operationalise the solution, such as:



Working through diverse and varied requirements in the relatively greenfield space of e-PROMs and e-PREMs, across different specialties and different clusters



Planning and designing how to integrate the solution with clinical systems like the Electronic Medical Record systems and patient management systems to facilitate enrolment.



Planning and designing operations to work around the constraints of Internet Surfing Separation environment in PHIs



Thanks to the diligence and cooperation of all involved – clusters, various departments at IHiS, and The Clinician, the team managed to tackle these challenges. With the current ZEDOC as the first release, users can look forward to greater convenience with the next release in the coming months where there will be more automation as well as integration with existing systems.

We thank everyone for their hard work in making the electronic solution a success so far! **If you are keen on onboarding e-PROMs or e-PREMs, please reach out to your institution's Chief Information Officer's office.**