FINAL EVALUATION REPORT

ALLIED HEALTH

BEST PRACTICE, EQUITY, ANALYSIS PILOT (BEAP)

July 2021 to June 2022

Program/Project Name	Best Practice, Equity, Analysis Pilot (BEAP) – Allied Health
Area of identified need	Information Management
Activity Work Plan Reference or Project Management Plan link	NxPH20 –A lack of health service Integration, coordination, and information sharing
Evaluation Report completed by	Jo Dean - Sr Project Officer
Project Sponsor	Catherine Turner – Executive Manager
Timeframe of evaluation	July 2021 – June 2022
Date of initial Evaluation Report	30 June 2022

1. Executive Summary 3
2. Background 5
2.1 Project Stakeholder Profile 7
2.2 Schedule 8
3. Evaluation Scope 9
4. Evaluation Method 10
4.1 Design 10
4.2 Methodology 13
4.3 Data 14
5. Results 16
5.1 Data received 16
5.2 Report results 17
6. Analysis 17
6.1 Outcome Evaluation - Dashboard Reports 17
6.2 Process Evaluation - Clinician Experience Measure 20
6.3 Technology performance 23
6.4 Quality Improvement 23
6.5 Data limitation considerations 24
6.6 Financials 25
7. Discussion 26
7.1 Key Evaluation Questions Response 26
7.2 Project considerations 28
8. Recommendations 29
9. Conclusion 32
10. Appendices 33
11. Glossary 40

1. Executive Summary

Allied health professionals currently have difficulty in proving the clinical effectiveness of their interventions due to the lack of access to collective data sets. This is a result of fragmentation within the allied health digital space, which also limits opportunity for collaboration between health care providers and impacts the ability for Allied Health providers to use an evidence-based practice (EBP) to support Quality Improvement (QI) outcomes and prove the effectiveness of allied health interventions.

The aim of this paper is to present the key findings and evaluate the outcomes of the allied health BEAP (Best Practice, Equity, Analysis Pilot) and to make recommendations for next steps. The pilot focused on Type 2 Diabetes Mellitus (T2DM) and was developed as a technical proof of concept.

The BEAP project's main purpose was to test the concept that software technology can improve allied health clinician experience in data input and in sharing of that information to other healthcare providers. It is hoped longer term, this may lead to the development of, and access to evidence-based reporting data sets to demonstrate the impact of various allied health interventions. This will support quality improvement opportunities for those treating people living with chronic diseases.

The pilot project ran from July 2021 to June 2022 and consisted of 2 phases as follows;

Phase 1: Identify a feasible technical solution and develop measures to justify phase 2.

A feasible technical workflow was developed with the secure messaging software Medical Objects (MO) as a core component. Six working group members from various allied health professions advised on the development of the key project measures for T2DM, being clinical measures, PROMs (Patient Reported Outcome Measures) and PREMs (Patient Reported Experience Measures). In addition, a Clinician Experience survey was developed by the PHN team.

Phase 2: Develop and implement measures and progress and to conduct a Diabetes Management case study.

The key measures were critiqued by the working group members, the processes and the data collection software were implemented into 5 practices. Data collection was undertaken for a 7-month period and was monitored with monthly check in meetings. The clinician experience was captured with interviews and surveys pre and post data collection phase. The key findings are outlined in the below table:

Table 1 Quadruple Aim and summary of related outcomes

Quadruple Aim domain	Results
Improving population health	• The project proved the concept that **existing software could be used to collect, and store aggregate allied health data** from various practices and professions **in a central data repository**, from which **evidence-based reports were developed**. Report output can be provided at three levels; client (aggregated by client profile criteria), practice (aggregated by individual practice) and population health (i.e., practices participating in the BEAP pilot). • The data output **indicates trends that demonstrate allied health intervention and QI improvement opportunities**, however, verification with a larger cohort is required. • The project demonstrated an **advanced digital capability** by linking both the clinical measures reported by the allied health professional (AHP) and PROMs measures reported by the patient, this linkage provides insight to the patients' view of their health and can be directly compared to the clinical measure results. This linkage is an **innovative approach and has potential to provide new opportunities** to measure clinician intervention and patient experience alongside each other, and view this data from multiple perspectives, however, verification with a larger cohort is required.
Improved patient experience	• Most patients reported **a high level of confidence in their AHP**, found the appointment helpful and over 90% would recommend their AHP to a friend. These results indicate the patient felt the AHP had provided **a quality patient experience in most instances**. • The collection and analysis of **PROMs and PREMs** data supports a **client informed approach to health care**. • Clinicians agree that the data output provided in the BEAP pilot is **valuable to help identify QI** opportunities that have the potential **to improve the patient experience.**
Value for money	• All clinicians agree the data provided was a valuable output not currently accessible within the practice, and **data reports provide insight into QI opportunities which have potential to create efficiencies**. The total cost of the pilot was $34,310 plus PHN staff FTE.
Provider experience	• Clinicians agreed access to ongoing reports such as developed in the BEAP project would enable the practice **to use data and clinical systems more effectively to drive clinical improvement, improve practice performance and improve the patient and clinician experience.** • Clinicians agreed **the BEAP model is likely to successfully be adapted to capture different measures as relevant to other chronic diseases**, this would need to be validated with a larger cohort. • Quality Improvement opportunities were created by participating in the pilot **with 3 out of the 4 learning a new process** they adapted to their practice. • Software **interoperability was a key barrier** to achieving higher data collection results, mainly due to the manual data collection of clinical measures and therefore the impact on clinician time. • **Lack of GP referral and engagement via secure messaging was also a barrier** for most practices to use the software product more broadly outside the scope of the project, therefore not achieving the full anticipated clinician benefits of secure messaging.

The key recommendation is to build upon projects lessons; conduct on a larger scale with increased rigour, ethics approval and a wider cohort of patients and practices and increased data collections timeframe, and in a different disease to prove flexibility of the model.

2. Background

Through the consultation with Allied Health professionals (AHP) during the original COVID outbreak period in 2020, HNECC PHN were informed that allied health has difficulty in proving the clinical effectiveness of their interventions. This is largely due to the wide variety of clinical software systems currently used by allied health professionals, the absence of a well adopted national data set for allied health, and lack of system interoperability. The lack of integration with common secure messaging platforms by systems used in Allied Health practices is also a limitation for interdisciplinary collaboration with other health professionals.

As a result, under the Allied Health Strategy, Clinical Health Information Management and Systems stream, the BEAP project was formulated. In November 2020, a detailed Allied Health Strategy Clinical Systems Project Options Paper (appendix 1) was proposed. The decision based on this paper was to focus on using existing software readily available in the marketplace to conduct the project, in consultation with IMIT, Medical Objects secure messaging software was selected. As a result, a revised Program Logic Model (appendix 2) and PMP (appendix 3) were developed and endorsed in July 2021.

The BEAP project's aim is to prove the concept that existing technology can provide a viable solution to collect AHP patient data from various sources and centralised data in a repository to be used to create reports that can be shared. This achievement would support Quality Improvement opportunities for those caring for people living with chronic diseases and in the long term, enable evidence-based reporting to prove allied health clinical interventions in patient care. Due to the Quality Improvement focus of this project, the ethics approval and the AH&MRC ethics application were revoked.

This project aligns to the PHN Digital Health Strategy by establishing conditions for digital success and supporting the embedment of digital foundations and promoting advance digital capabilities. The key objectives for allied health as outlined in the strategy, such as increased digital literacy and data skills, improved digital health maturity and promotion of MHR (My Health Record) usage are all within the scope of this project. The Commonwealths Chief Allied Health Officer on numerous occasions has advised the PHN of the need for data that can prove the impact of allied health intervention and that this evidence is instrumental to influence change at a Commonwealth level, the BEAP project is working towards supporting this request.

The pilot project focused on T2DM and consists of two phases as follows.

Phase 1: Identify a feasible technical solution and develop measure requirements to justify phase 2

- Engaged the selected software provider MO secure messaging.
- Establish a BEAP working group (WG) of 5 AHP as outlined in the Project Stakeholder Profile who informed the development of detailed user requirements including clinical and patient measures, with a focus on clients living with T2DM.
- Conducted a feasibility assessment against detailed requirements with key technical providers, and developed a technical workflow and the data collection process as outlined in

the Allied Health BEAP Phase 1 Findings (appendix 4). This was endorsed by the Project Sponsor to progress to phase 2.

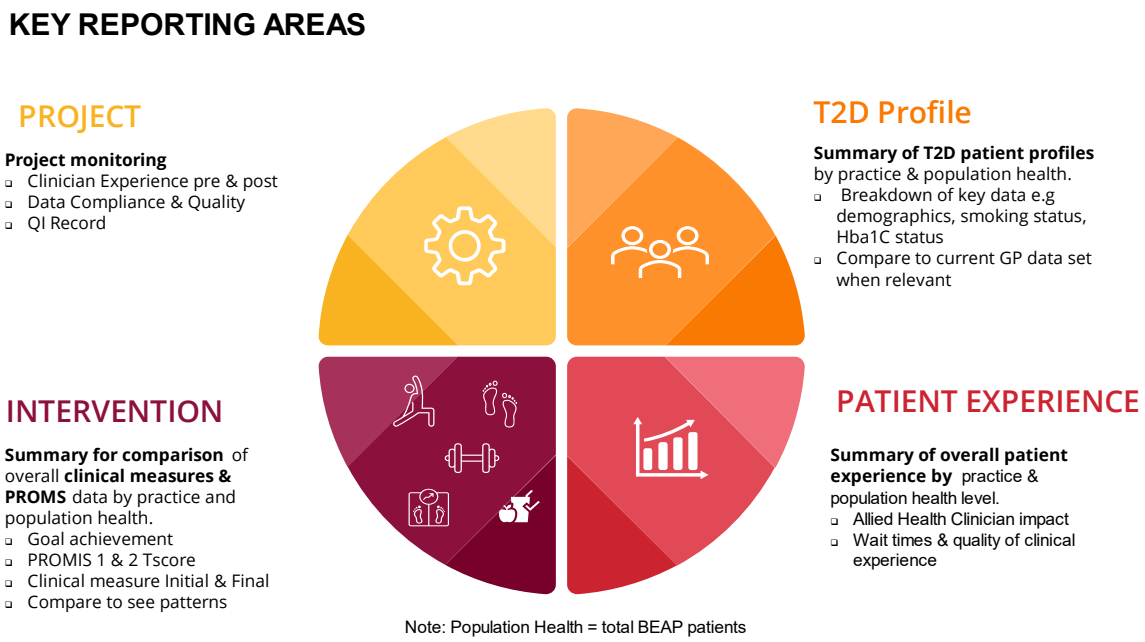
Phase 2: Develop and implement requirements and progress a Diabetes case study

- Developed the detailed project measures, data collection process and workflow.
- Implemented the software and the data collection workflow process into 5 practices and the PHN. Practice training was provided by Medical Objects and the PHN project team.
- Monitored the project via monthly QI meetings.
- Evaluate the project's ability to deliver using the Quadruple Aim framework.

A grant of $5000 was provided to participating practices plus 12-month subscription to Medical Objects Explorer, training, and support. A variable benchmark as documented in the grant agreement for participating practices, was set to collect data from 35 patients per practice over a 7-month period. This benchmark was an estimate and varied based on the profession and size of each practice.

Below is a summary diagram of the agreed reporting areas and measure used to capture the relevant data.

Table 2 Key BEAP Project Reporting areas



The data collection processes were completed in May 2022 and the evaluation conducted in June 2022.

2.1 Project Stakeholder Profile

Participating Practices

Phase 1 & 2

- Umina Podiatry – Podiatrist located in Umina
- Northwest Nutrition – APD Dietitian and CDE located in Moree
- Macquarie Physiotherapy – Physiotherapist located in Gateshead/Belmont
- Action Diabetes – Nurse partitioner Diabetes and CDE located in Nelson Bay
- Kinetic Medicine – Exercise Physiologist located in Taree

Phase 1 only

- Dietitian, Marchini Nutrition located in Swansea

Clinicians are in different regions therefore data was collected from patients unique to each practice.

Practice Technical Profile

Table 3 Practice Technical Profile

Practice	Secure Message	Practice Management Software	Other Software
Umina Podiatry	Nil	Front Desk Practice Management	Google Workplace, INCA, PACS medical imaging
Northwest Nutrition	MO	Communicare	MS Office
Macquarie Physiotherapy	Nil	Nookal	Physitraks, MS Office
Action Diabetes	MO	Best Practice	MS Office
Kinetic Medicine	Nil	Nookal	MS Office
Marchini Nutrition	MO	BP Allied	

PHN Project Team

- Project Sponsor – Catherine Turner
- Manager – Jo Coutts – Integrated Care Manager
- Lead – Jo Dean – Senior Project Officer
- Data Analyst – David Martin – Health Data Analyst
- IT Advice – Jason Rumianek – Information Management Information Technology Manager

Steering Committee members

- Kate Schmich – Health Intelligence and Performance Manger
- Jason Rumianek – Information Management Information Technology Manager
- David Martens - Health Data Analyst
- Marilyn Dickson – Manager Digital Health
- Deb Walganski – Primary Care Officer and Diabetes Alliance Rural Lead
- Catherine Turner – Executive of Commissioning and Project Sponsor
- Jo Coutts – Integrated Health Care Manager
- Jo Dean – Senior Project Officer

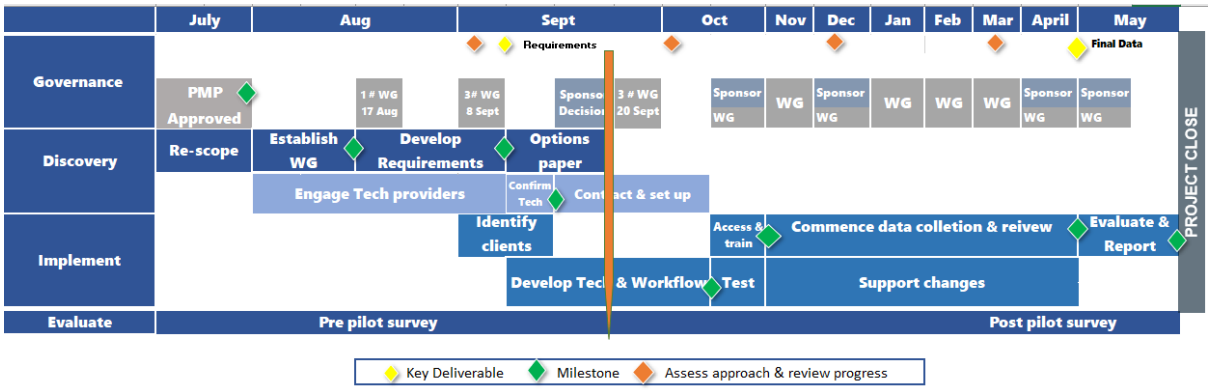
Medical Objects

- Blake Harris – Sale Manager
- Thomas Ellis – Programmer

Governance: Project Sponsor the Executive Manager of Commissioning Catherine Turner, BEAP Steering group, regular BEAP working group QI meetings which were held monthly with participants to monitor and support the process and Integrated Care Manager.

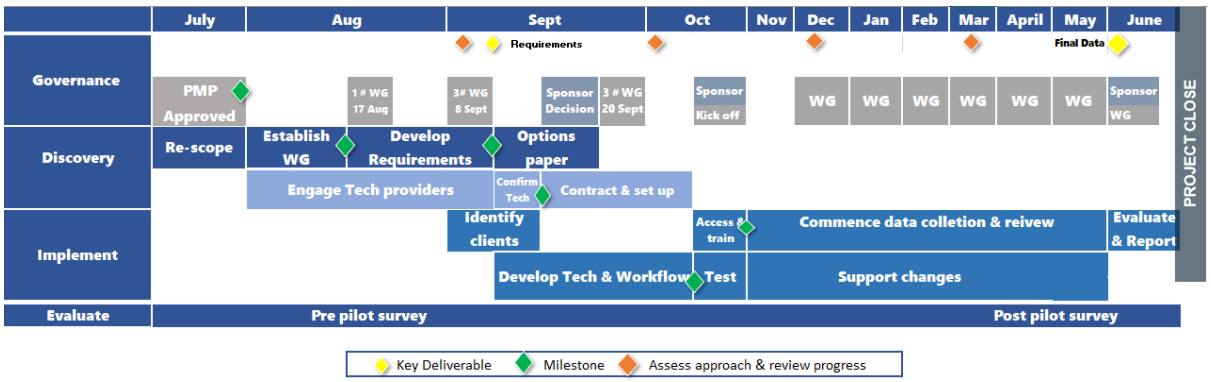
2.2 Schedule

Table 4 Baseline high-level roadmap at project start



Re-baseline of project due to COVID impacting the data collection capacity of practices therefore, an additional month of data collection was introduced.

Table 5 High-level actual roadmap



3. Evaluation Scope

An evaluation of the BEAP pilot project is required to review the findings of the data collected to measure the value against the project purpose and quadruple aim. The evaluation focused on process and outcome measures noting the economic measures are not in scope for this pilot. This evaluation considers the appropriateness, effectiveness, efficiency, and sustainability aspects of the pilot to support the decision-making process for the PHN to conduct future projects.

The key evaluation questions (KEQ) sort to be answered are as follows;

1. Did the BEAP pilot prove the concept that existing technology can improve allied health clinician experience in data collection and in sharing of that information to other healthcare providers?
2. Did the BEAP project provide access to evidence-based reporting data sets?
3. In the long term can the BEAP project demonstrate or have the potential to demonstrate the impact of various allied health interventions on patient care?
4. In the long term could the outputs from this pilot be used for Quality Improvement opportunities for those treating people living with chronic diseases?
5. Can this pilot design be used to analyse other chronic diseases?
6. Is the BEAP project sustainable and scalable at a patient practice and PHN level?
7. Should the PHN support future pilots based on this model?

The responses to the key evaluation questions above will consider the key outcomes and their link to the Quadruple Aim. The evaluation of results aimed to identify recommended changes to improve the BEAP model and provide an assessment of value to potentially measure and prove allied health clinician interventions on patient care and provide reports to identify QI opportunities.

The report will be disseminated to the BEAP Steering Committee, the project sponsor and reported to the board. A summary stakeholder version will be disseminated to the allied health professionals who participated in the project, Medical Objects AHRG and clinical council and clinical advisory committees as a clinical document. The project outcomes, lessons learnt, and recommendations will be used to inform decisions about potential future allied health data projects led by the PHN and define the linkage to the PHN digital health strategy.

4. Evaluation Method

4.1 Design

Qualitative and quantitative analysis against Quadruple Aims Quantitative data was collected via the following processes.

- **PROMIS-10 Global Health survey #1 & # 2** – are a validated tool these surveys were provided to patients at the initial and final appointment, in the form of a short 10 question survey (see appendix 7). These surveys were matched during the analysis process and compared for variation.
- **Clinical Measures** - were developed by the AHP working group. The data was collected by clinicians at the initial and final consultation and compared for variation (see appendix 6). This data was linked by a unique identifier to the patient PROMs, this linkage enabled a comparison of the clinician reported measure to the patient reported measures.
- **PREMS –** surveys were developed by the AHP working group and were provided to patients following the final appointment in the form of a short survey (see appendix 8).

These qualitive measures informed the Dashboard reports and key outcomes.

Qualitative data was collected via the following process.

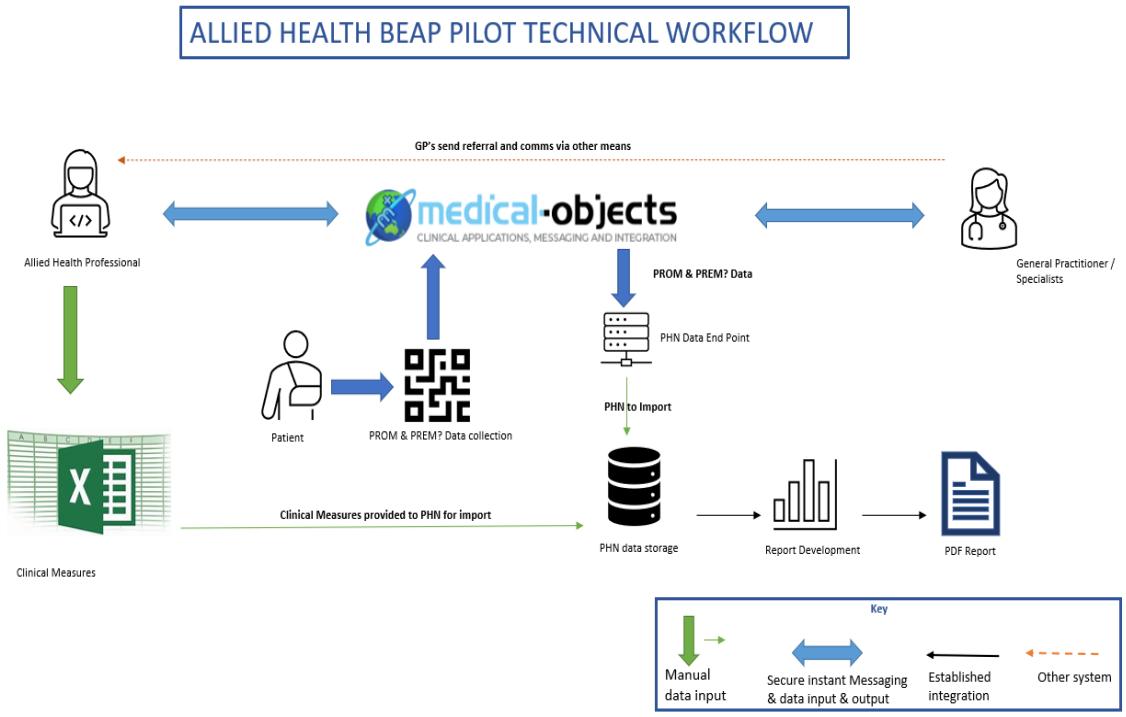
- **Clinician Experience Survey #1 & #2** – surveys were developed by the PHN with input from Health Intelligence and Performance Manager, the surveys were completed by clinicians prior to the commencement of data collection and post the data collection period. (See appendix 9)
- **Monthly QI Meetings** – clinicians met and reviewed the dashboard data monthly, comments and feedback from these meetings also informed the outcomes documented. Additional one on one ad hoc meetings were held with clinicians which also contributed.
- **Interview** - 1 Clinician experience Interview from the one practice that did not submit any data

These measures provided process feedback and feedback on the dashboard outcomes.

4.1.1 Technical Workflow

Below outlines the high level technical and workflow process used to collect store and analyse data.

Table 6 Technical Workflow



Description of how Software was used to collect data

Medical Objects

Medical Objects (MO) Explorer Online product is a web-based solution which enables the management of patient documents via secure messaging from any location.

The key features used to collect data were as follows;

- Patient Questionnaires – PROMs & PREMs were distributed by the AHP to patients via a QR Code or online link. Once accessed patients completed surveys directly in MO, the results were de-identified and delivered to a PHN endpoint.
- Secure messaging – was used to access patient information from a referral or via a direct message to a health professional. This data was sourced and updated in the Clinical Measures in Excel.
- My Health Records was set up for each practice with integration to MO which created easy access to view patient records to find data unavailable on a referral e.g., HbA1c to update Clinical Measures.

SharePoint BEAP Project site & Excel: Clinical measures were collected for each patient in Excel, each patients UI (unique identifier) as stored in the MO client profile was included in the clinical measures providing a de-identified linkage point to the PROMs data. BEAP Project SharePoint site was established to store Excel documents for clinical data collection and online collaboration.

MS Forms: was used to collect pre and post clinician surveys that were conducted by the clinicians for the purpose of measuring the clinician experience.

Data storage and report development

Primary Health Insights (PHI): is a PHN specific cloud-based data and information storage system which provided a secure data repository for data from various sources and was used as a PHN end point for MO to transfer de-identified data to.

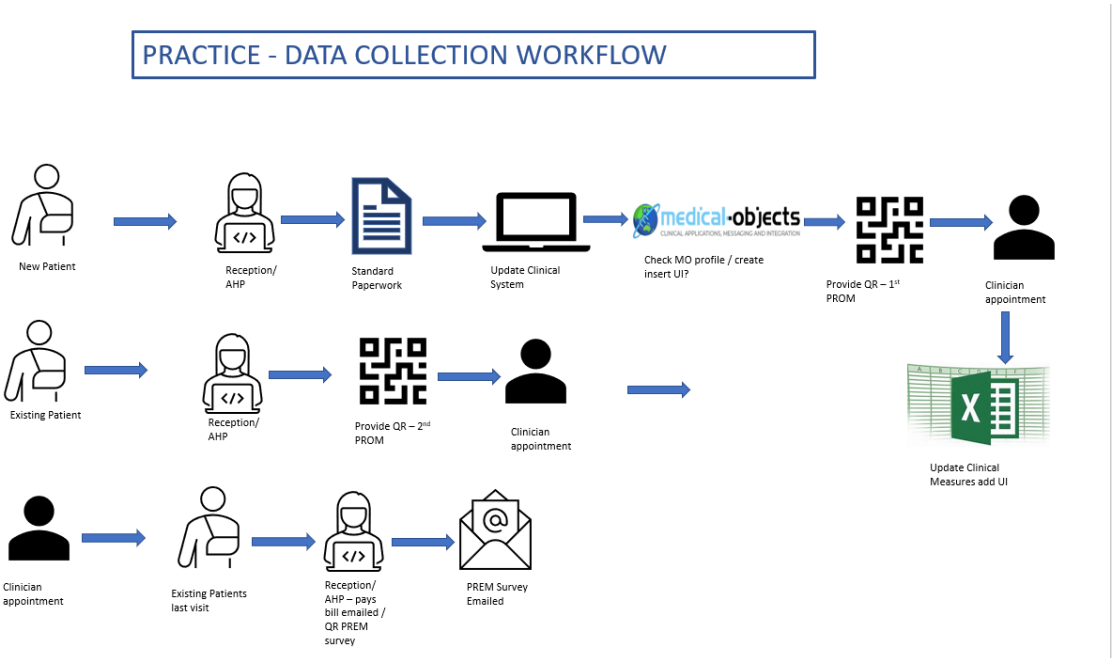
1. PROM data collected in MO and sent de-identified to PHN end point (included UI)
2. PREM data collected in MO and sent de-identified to PHN end point
3. Clinical Measures collected in excel by clinicians and linked with the MO unique identifier

Power BI: was used to build dashboards which are shared via PDF and used for the analysis process.

User Experience with data collection

The data collection workflows worked slightly different for each practice however Table 9 details show the overall data collection workflow process used.

Table 7 Data collection workflow



Clinical Measures & PROMs were collected at the initial and final appointment, PREMS were collected on the final appointment only. Clinician survey #1 was collected prior to data collection commencement and survey #2 at the end of the data collection period.

For a detailed workflow of the data collection process see BEAP Data Collection Workflow (appendix 10)

4.1.2 Privacy and Data security measures

- PREM data was collected via a generic QR code the output was deidentified and directly transferred to a PHN end point therefore not accessible to practices. The PHN had no way to identify the data by practice or patient.
- PROM data included a unique identifier (UI) for each patient which meant the data was de-identified to the PHN who do not have user access to MO.
- Clinical measures are stored on a closed PHN SharePoint site visible only to project participants and PHN staff, again the unique identifier was used therefore no identifiable profile information was shared in these measures.
- Since this is a QI project, and the data will not be published no ethics approval was sort, approval from the PHN Privacy Officer was sort to approve the QI project status. Noting the data includes Aboriginal and Torres Strait Islander information, since there is no formal ethics approval this data will not be specifically analysed by priority groups and nor shared.
- Allied Health professionals were provided a consent from for each participant see (appendix 16) the PHN recommended all participating patients completed the consent form.

4.2 Methodology

Surveys tailored with AHP advice, validated PROMIS-10 Global Health survey, data analysis, report analysis, interviews, workshops, and monthly QI meetings.

The PROMIS-10 Global Health survey has been formally validated for use within MO by the Department of Medical Social Sciences (MSS) at Northwestern University Chicago USA, see (appendix 14). The method of scoring is also outlined in the PROMIS Global Scoring Manual in (appendix 13). PROMIS 10 measures use T-score metric in which 50 is the mean for the reference population which is the US general population and 10 is the standard deviation of that population. Higher scores equal more of the concept being measured e.g., greater general health, physical health or mental health being positive.

Table 8 Outcome measures link to the Quadruple Aim

Quadruple Aim	Outcome Measure	Appendix
Improving population Health	Dashboard report analysis	11
Improved patient experience	Clinical Measures as specified by AHP working group Initial and final PROMs - validated PROMIS-10 Global Health survey #1 & # 2 PREMs - developed with AHP working group	6 7 8
Value for money	Clinician Experience Survey #1 & #2 (input from HIP team) Project outcomes compared to investment review	9
Provider experience	Clinician Experience Survey #1 & #2 Consultation QI meetings and evaluation meetings Interview	9

4.3 Data

4.3.1 Data collection

Due to the lack of integration data was collected via various sources and centralised in Primary Health Insights (PHI), a data repository or warehouse software for the PHN. Data was collected across.

Table 9 Data collection in scope

Demographics	• Data was collected by allied health professionals across various professions including a Podiatrist, APD Dietitian and CDE, • Physiotherapist, Nurse Practitioner Diabetes and CDE and Exercise Physiologist • Anyone with Type 2 Diabetes Mellitus seeking treatment for an allied health professional who will conduct at least 2 visits within the data collection period
Processes/technology	• Medical Objects to collect PREMs and PROMs from patient • PROMIS 10 validated Global Health survey – T- Score #1 & # 2 • Clinical Measures collected in Excel – Initial & Final • Clinician experience measures MS Forms survey • PHI for data storage • BI software for dashboard report development • My Health Record (MHR) set up with integration to Medical Objects
Organisations	• Medical Objects • 5 private allied health practices as outlined in the Project Stakeholder Profile

Table 10 Data Collection out of scope

Demographics	• Other types of diabetes • Paper surveys therefore limited ability to capture data from patients without digital devices and access to internet
Processes/technology	• Other securing message software or survey tools not mentioned in scope. • Economic evaluation • Measurement of external factors impacting data results e.g., treatment by other health professionals and medication • Ethics approval as QI pilot
Organisations	• Allied health professionals that don't care for people who have Type 2 Diabetes Mellitus

4.2.3 Benchmarking

Due to the lack of Allied Health data available there was no direct baseline data to reference, therefore when available, Type 2 Diabetes Mellitus in HNECC PHN (PHN GP T2DM) data set from General practice in the HNECC PHN region from December 2021 was used. BEAP measures and indicators are also be benchmarked in this report against HNECC PHN region-wide population indicators where available, which were sourced from the most recent Public Health Information Development Unit (PHIDU) Social Health Atlases. (https://phidu.torrens.edu.au/).

4.3.3 Data Limitations and Rational

- A key limitation is that patients and practices are located in different geographical regions therefore the data was not collected as a full circle of care by solely allied health professionals participating in the BEAP project. For instance, a patient may be referred by their GP perhaps as part of a broader T2DM treatment plan including other AHP or community programs not captured in this project. Therefore, outcomes cannot be solely attributed to the AH intervention, although hopefully they contributed. The rational for not measuring external factors or to further refine the profile of patients that could participate in the pilot, was the fact this pilot was designed as a technical proof of concept and deemed out of scope.

- The short time frame being inside a 12-month period did not allow monitoring of patient care within a care plan time frame. The limited duration of the data collection period also impacted the ability to identify trends in patient care, the rational for the pilot length was due to human and financial resources that the project had to be completed by June 2022.

- The PROMIS 10 Global Health survey is not a measure specific to allied health, however it was selected as the preferred PROMs measure due to the short survey length of 10 questions being suitable for online completion. Consideration was also given to the general health scope of the tool, that the tool could be formally validated providing credibility, the tool provides a scoring process and benchmark and that the PHN and WG could not identify an allied health specific PROMs that would cover the broad scope of professions in a short survey format.

- The PREMs survey is not a validated tool and therefore has no scoring system or benchmark. The survey was tailor made by the project team in consultation with the WG to achieve the short style suitable for online completion. The questions were informed by the review of various health PREM measures and then critiqued by the participating clinicians.

- The clinical measures were specifically tailored by the participating clinicians to ensure all scopes of practice were adequately represented; therefore they are in no specific AH benchmark. However, where possible the measures were aligned to HNECC PHN GP T2DM data capture where possible to provide a benchmark for data comparison against GP data.

- Clinician Surveys were designed by the PHN project team supported by the PHN Health and Performance team subject matter expert. These surveys may not be suitable for replication in other areas, or data projects.

5. Results

5.1 Data received

Data was successfully collected by 4 of 5 practices, this included:

	Initial CM	Initial PROMs	Clinician survey #1	Post CM	Post PROMs	Clinician survey #2	Interview
Practice 1	17	15	1	10	4	1	0
Practice 2	0	4	0	0	0	0	1
Practice 3	8	9	1	8	6	1	0
Practice 4	21	24	1	15	8	1	0
Practice 5	17	22	1	17	14	1	0
Total	**63**	**74**	**4**	**50**	**32**	**4**	**0**

- 50 Clinical Measures were successfully paired initial and final measures
- 32 PROMS were successfully paired initial and final measures and linked to CM
- 33 PREMS were collected however intentionally not paired nor collected in a way that permits individual practice identification.
- 4 Clinician Experience Surveys both #1 & #2 were compared.
- 1 Clinician experience Interview from the one practice that did not submit any data

Points to note:

- A number of Identifiers in the PROMs could not be matched to clients in the clinical dataset. This could be due to missing client records in the clinical measure's dataset, or errors in recording the identifiers.
- In some instances, only initial or final clinical measures or PROMs were provided therefore this data could not be considered and is not included in the data count. PROMs, we received 106 PROMS (first survey returned by 74 clients – suggesting while we had 50 complete records for the report there was a reasonable number of incomplete clinical records.
- 32 PROMS were matched/paired (i.e., 1st survey and a subsequent survey). Some clients submitted more than 2 surveys, but only the first and last surveys were used in pairing.
- A number of client records in the clinical measure's dataset had no PROMs recorded
- Some PROMs were duplicates, these have been removed from the dashboard report

5.2 Report results

1. **Full Dashboard Report** at the population health level, (see appendix 11). The initial output report provides a population health level output and includes a portion of the total data set that demonstrated the most value. Each practice was provided a practice level report in the same format however these results have not been made available in this report.
2. **Clinician Experience Measures** questions asked in the survey see (appendix 9) to see the summary of results view (appendix 12).

6. Analysis

6.1 Outcome Evaluation - Dashboard Reports

The usable data set can provide output at three levels; client (aggregated by client profile criteria), practice (aggregated by individual practice) and population health (i.e., BEAP combined practices). The exception is PREM data to protect the identity of patients.

This includes the following

Summary of Clinical Measures (CM) for all clients at start vs end of program (50) Dashboard includes population health level excluding profession specific data e.g., Cholesterol, Eating patterns, LDL, Triglycerides, eye, dental, foot review

Summary of PROMS measures for all clients at start vs end of program (29) Dashboard includes at population health level see (appendix 11)

Summary of key linked clinical measures and PROMS Clinical measures can be linked to PROMS via GH (General Health), MH (Mental Health) or PH (Physical Health) T-scores.

Additional dashboards have been included where the PROMs data has been further analysed to include an overall T-score compared to the contributing dimensions which relate to specific survey questions (see appendix 11 page 8). Also, the PROMs T-score data has been compared to various clinical measures offering flexibility to review the data from various perspectives (see appendix 11 page 9).

Summary of PREM measures at the end of the project (32) Dashboard includes at population health level

Dashboard Reports Summary

Population Health Level Reports

#	Type	Observation	Interpretation
Profile – recorded by AHP			
1	Indigenous status	24% are Indigenous	the bias due to clinic location impacted on demographic characterises
2	Age	11.4% less than 80 years or above client in BEAP compared to HNECC PHN GP T2DM	If patients treated in a RACF may be considered in GP data and are unlikely to visit AH private practice
3	Gender	0% used Self-description	Requires validation of a larger cohort
4	Client Goal	**46%** of clients exceeded or achieved client goals set by their AHP. With **94% either achieved, exceeded, or made progress**	Indicating a positive projection towards goals experience by most participants.
5	Sessions provided	Most had 2 sessions with an average of 3 visits per client	Since many patients progressed towards or reached their client goals, it would seem 2 visits is adequate however it would be ideal to assess in a larger cohort
6	Profile: Years since diagnosis	62% had T2DM for 5 plus years	
Modifiable lifestyle risk factors - recorded by AHP			
7	Alcohol Consumption	Alcohol consumption initially indicated **86%** of clients were drinking within or moderately outside the target, increasing to **95.7% at the project close**	Patients developed healthier alcohol consumptions when being treated by an allied health professional.
8	Smoking	3% reported a decrease in smoking	2 people
9	Weight	**57.2%** were within or moderately outside the RACGP T2DM weight guidelines at the start of the project this increased to **71.4% at the project close**	Significant improvement in patients' weight when being treated by AHP. When compared to HNECC PHN GP T2DM patients BEAP initial measures were similar.
10	Physical activity	**58%** were within or moderately outside the Australian Physical Activity guidelines compared to **83.7% at project close**.	Significant improvement in patients' activity levels when being treated by AHP.
Clinical Monitoring - recorded by AHP			
11	HbA1c	**77%** were within or moderately outside the recommended guidelines compared to **92.9% at project close.**	Significant improvement in patients' when being treated by AHP.

12	Blood Pressure	**71.7%** were within or moderately outside the recommended guidelines compared to **93% at project close.**	Significant improvement in patients' when being treated by AHP.
PROMS – Patient Recorded Outcome Measures			
13	General Health Mental Health Physical Health	Trend is showing a mid-point reading of 'good' being much higher for General, Mental and Physical Health in the initial measure. In the final survey less people reported 'good' with more patients reported excellent and very good. A small number of patients also did report a decline from good to fair.	Most clients are changing their reported measures from the average or midpoint position in the final survey trending healthier
14	Physical Health T-score	**Increased by 3.3 from initial to end**	Trend is showing improvement in PH measures when patients are being treated by AHP
15	Mental Health T-score	**Mental Health T-score increased by 3.8 and is now 0.5 above the** average of the general population.	Trend is showing improvement in MH measures when patients are being treated by AHP
PROMS linkage to CM			
16	Average T-Score by Client Goal Achievement – **achieved target**	The average T-score for mental health for those that **achieved the targets** set by their AHP **increased by 7.7.** **The US general population mean score is 50** this groups **score moved** from **-5.55 below** the US mean score to **+2.15 above** at project close**.**	Clients reaching the client goal targets of allied health professionals reported the greatest improvement in MH.
17	Average T-Score by Client Goal Achievement – **Progressing towards**	Patients **progressing towards** their client gaols indicated a slight decline in the T-score for MH and physical health did not change much.	Verification with a larger cohort is required
PREMS – Patient Reported Experience Measures			
18	Availability	**94.12%** could make an appointment within a month	Accessibility is high for AHP appointments
19	Overall usefulness	88.2% found the appointment helpful **90.6% would recommend the practice to a friend.**	Most patient experiences were positive

Table 11 Dashboard Report Summary

Overall, the outcome of the key measures shows positive trends in the patients' health when being treated by an allied health professional, however as noted in the limitations the outcomes cannot be solely attributed to the AH intervention, although hopefully they contributed, and that a patient may

be referred by their GP perhaps as part of a broader General Practitioner Management Plan (GPMP) and/or Team Care Arrangement (TCA) T2DM treatment plan.

A Key outcome for the BEAP project is the data linkage between CM and PROMs data. The data was linked by a unique identifier, this linkage enabled a comparison of the clinician reported measure to the patient reported measures, this capability is unique to the BEAP project for the PHN and has potential to view data from various new perspectives as demonstrated in page 8 & 9 of the dashboard report (see appendix 11)

The patient experience also trends towards positive with most reporting a positive experience.

Practice Level Reports

The practice level reports provide data specific to a practice, therefore cannot be shared more broadly. The format is identical to the population health (i.e., total BEAP population) report except for the exclusion of PREMs data, this is to ensure patient anonymity within a small data set.

Each practice was sent their individual practice report on 13 July 2021 and were provided the option to provide additional feedback. No feedback has been received to date at 12 August 2022.

6.2 Process Evaluation - Clinician Experience Measure

The Clinician Survey measures the usage and benefits of technology used, the impact of technology on business processes, clinicians experience with the process of data collection, the usefulness of data, lessons learnt, general feedback and recommendations. To view the Clinician Experience Measures aggregated data see (appendix 12)

Clinician Measures Summary

#	Theme	Interpretation	Observations
1	Impact of known benefits of secure messaging	Some practices noticed a reduction in paper use, some improvement in audit trail and environmental impact. No practices reported a change to the number of referrals, use of reports or collaboration with other health professionals	Medical Objects was not used outside the scope of the project for half of the practices which could have inhibited full benefits realisation of Medical Objects.
2	Receiving referrals	Mainly by email, fax and patient this did not change during the project	GP usage of MO is very low. For example, a practice that sends up to 50 documents per week, via Medical Objects only 5 referrals were received during the 6 months of data collection

3	Sending of AHP documents	Email and fax were mostly used for outbound communication	New users to Medical Objects did not send any documents via secure messaging
4	Usage of Medical Objects	Minimal to none outside the scope of the project	Potential to expand the use of Medical Objects
5	Data usage	Most practices used or could see the potential for analysing the data for data quality, QI, report on progress, measure the impact of patients care and experience and compliance with work practices.	Indicates the data is of value in multiple areas
6	Data value	Clinicians agreed the output provided new QI opportunities and was a valuable benchmark for future T2DM projects. Most clinicians agreed the data had the potential to improve the patient experience and demonstrated initial trends of how their profession impacts the management of T2DM Most indicating the PREM & PROMS were more valuable than CM.	
7	Key barriers of using MO	No Integration and lack of GP engagement. There was a slight decrease in practices who planned to adopt secure messaging in the future.	Practices that had not used secure messaging in the past were discouraged by the lack of GP engagement
8	MHR usage	The use slightly increased	Key barrier was to find the most current/relevant pathology and missing information for example not all pathology included
9	Understanding QI Fundamentals	All rated improved understanding	Barrier was that QI is not obvious until final data was available at the end of the project making it difficult to get traction
10	Suggested other chronic diseased to be measured with the BEAP framework	Most agreed it would be valuable suggestion heart disease, stroke, Osteo arthritis, Cancer screening, CKD	

Table 12 Clinician Survey #1 & #2 summary

The Clinician Experience surveys, monthly QI meetings and interviews with participants identified the key barriers both internal and external factors that impacted the quantity of responses. Each practice was impacted by most of these issues to various degrees, unfortunately resulting in one practice withdrawing from the data collection process.

- Impact on clinician time to follow up patient measure and record CM
- COVID impacting resource available to collect data and clinic face to face time which impacted the ability of clinicians to collect required data
- Underestimation of what was involved from a clinician perspective
- Access to devices to collect patient clinical measures
- Motivation of clinicians outside the BEAP project to collect data
- Lack of change management plan to implement
- Simply not a high number of T2DM patients presented during the study
- Physiotherapy identified at prior to the commencement of the project that T2DM was a secondary reason to attend appointments and maybe smaller numbers which was expected and realised.
- Technology literacy of patients
- Technology and internet access of patients

Overall, all members were highly satisfied with how the project was managed by the PHN. The clinician surveys indicate the key limitation in the process are the lack of GP engagement with MO and the lack of interoperability with practice clinical software systems, both factors significantly impacted the clinician's capacity to collect clinical data efficiently. Additionally, it may have contributed to the fact that MO was not fully adapted by practices who were not pre-existing users, most clinicians used the software solely for the purpose of the pilot, as a result did not achieve notable benefits that secure messaging has the potential to provide.

During the monthly QI meetings and when reviewing the data, the group noted that the data collection process did not collect information such as socio economic, bulk billing options and input form caregivers. In addition, clinicians with a higher number of older and First Nations patients found that most have mobile phones however some of the patients' phones were basic and not suitable to complete online surveys, had limited data plans available, low user knowledge and did not have access to broadband or devices at home. To mitigate this issue some practitioners provided their own devices to patients to complete survey or could not include data collection from these patients. Practice 1 stated that if they conducted the project again, they would use paper surveys as they found paper easier. This outcome highlights some of the barriers and in future projects consideration to ensure digital health solutions do not increase the divide between socio economic groups. In these cased consumer digitals upskill becomes part of the clinician role and therefore impacts clinician time which in the short-term impacts negatively on the clinician experience.

6.3 Technology performance

Medical Objects

The observations in relation to technical performance are based on feedback provided by clinicians and the PHN project team at various stages of the project.

Medical Objects (MO) help desk staff demonstrated a high level of support to allied health practices participating in the BEAP pilot. It was observed and commented on by clinicians who noted that the response times for queries were prompt and issue resolution was thorough. In addition, MO provided adequate resources and how-to-guides to support clinicians.

The PHN team members observed in the planning, development, and implementation phases of the project the MO team were accessible, flexible, solution based, reliable and delivered on time. Throughout the BEAP pilot the PHN project team had direct access to support and advice from the MO team and any issues raised were addressed promptly and thoroughly. Developments were delivered to scope with a high level of accuracy and the costs were reasonable and allowed adequate flexibility to critique outputs within reason without incurring additional charge.

Some format issues were raised with MO in relation to the surveys look and feel, particularly on a phone device, specifically readability and layout issues. MO advised they have development plans underway to enhance features of the survey function within the internal delivery schedule.

The PHN project teams consensus was that we found Medical Objects a high-quality technical and service support provider and would welcome working with the MO team on future projects.

SharePoint - BEAP Project site

The use of a central project SharePoint site (Microsoft Teams) was an effective way to store project resources and share information. Some users experience access issues mainly related to multiple locations and using a variety of emails addresses, as a result causing issues accessing the correct Microsoft account. The sharing of links directly from SharePoint was not always successful even with external users that were full members of the project site. This was overcome by providing folder instructions to direct participants to documents via folder navigation.

6.4 Quality Improvement

QI foundations training and templates were provided during the QI meetings to all participants. Practice 3 utilised QI skills to diversify the data collection process within the project however no data templates were complete.

It became clear at the regular QI meetings that analysis of data sets to identify QI opportunities was not possible with partial data outputs. Since the delivery of the final data sets including practice level dashboards were provided at the conclusion of the project and due to the low data numbers, this impacted the opportunity to work collaboratively to identify QI. Practices were provided a feedback survey on delivery of the practice dashboards however we have had no response.

In the clinician surveys 3 out of 4 practices have learnt a new process that they have adapted however details of the process were not provided. The Clinician Survey also indicated all practices agree or strongly agree that output data on a larger scale have the potential to drive clinical improvement, practice performance, patient experience and improve the clinician experience. However, there was limited opportunity to demonstrate this within the data set achieved within the project a larger scale of data collection would need to verify the QI achievements. Clinicians found a

marginal improvement in their understanding of QI fundamentals during the project which would likely relate to the lack of examples possible to identify in a partial and small data set.

6.5 Data limitation considerations

- Data collection commenced 1 November which coincided with hard lockdowns ending on 11th October 2022 for most LGA's, though restrictions were ongoing until January 2023, this needs to be noted as advised by a participating AHP as it may have impacted the results such as PROMs mental health T-scores pre and post.
- Positive outcomes in patient care cannot be solely attributed to the AH intervention. A patient maybe seeking help from other health professionals or taking medication. For example, alcohol consumption levels improved overall throughout the project, however, Practice 4 advised in the June QI monthly meeting that some diabetic medications such as Ozempic can make patients not want to drink alcohol, which could impact the result in the study. Additional factors can impact these results such as other services accessed a GP, rehabilitation programmes etc.
- Not all PREM questions were answered with some respondents submitting a blank response limiting the data value. Additionally due to the complexity of capturing free text comments on a handheld device, we were unable to capture details regarding any negative feedback which would be of value to QI.
- Practices selected to participate in the project were a convenience sample, and therefore maybe more technically advanced, or motivated than that of wider allied health practitioners in the region
- The clinical measures are not validated
- PREMs were not validated
- Several identifiers could not be matched in the PROMs to a clinical measure data set due to missing records or data loading errors.
- There were some difficulties counting the full numbers of client records in the clinical measure's dataset generally, due to different data recording practices by clinicians. Some practices loaded multiple copies of the spreadsheet so the 'running sheet' style of recording did not work well, some newer sheets missed clients in older sheets, and some versions of the sheets differed slightly requiring more data cleansing than was expected.
- During the monthly QI meeting it was raised that socio economic and bulk billing factors were missing from the data output.
- Paper options to collect data for low digital literacy and access issues were not included in the project due to the technical proof of concept therefore this group maybe underrepresented.

6.6 Financials

An economic evaluation was out of scope for this project however below is included the overall costing of the pilot.

Item	No. required	Unit cost	TOTAL
Phase 1			
PHN Allied Health project advisors Phase 1– @$150 per hour per	25 hours	$150	$3,750
Phase 2			
Allied Health Practice Grant - incentive (e.g., payment for time and input for Allied Health professional working group participation)	5	$5,000	$25,000
Medical Objects hosting fee includes set up, training and MHR integration per practice pa *** may vary for existing users**	5	$170	$850
Medical Objects user licence per clinician pa *** may vary for existing users (up to 2 licences per practice provided)**	10	$150	$1,500
PROMS Module pa	5	$180	$900
Develop PROMS survey * **may vary depending on survey**	3 hours	$160	$480
PHN end Endpoint pa	1		$1,100
PROMIS 10 survey validation	1		$730
TOTAL			**$34,310.00 ex GST**

Table 13Actual Project Spend

The Senior Project Officer approximate hours

- July 2021 to November 2021 approx. 4 days per week (Phase 1)
- November 2021 to May 2022 approx. 2 days per month (Phase 2)
- June to mid-July 2022 4 days per week (Evaluation)

Data Analyst approximate hours

- July 2021 to November 2021 approx. 1 days per week (Phase 1)
- November 2021 to May 2022 approx. 2 days per month (Phase 2)
- June to mid-July 2022 2 days per week (Evaluation)

Medical Objects inclusions: Explorer Online is a web-based system accessed via a URL therefore the setup was minimal. Existing users were upgraded to Explorer Online.

Medical Objects training - 30 minute one on one session, support materials are provided and access to the Medical Objects help desk are included in the hosting fee.

- PHN run training session - clinical measures data update process, the data collection workflow, and the report analysis process.
- MHR set up and support will be provided on a need basis.
- Ongoing support and monitoring of the project will be provided by PHN Project Officer

7. Discussion

7.1 Key Evaluation Questions Response

Responses to the KEQ are outlined below.

1. **Did the BEAP pilot prove the concept that existing technology can improve allied health clinician experience in data collection and in sharing of that information to other healthcare providers?**

- Data was collected by AHP across various professions to inform the report outputs. These clinicians all agreed and mostly strongly agreed access to ongoing reports such as developed in the BEAP project would enable allied health practices to use data and clinical systems more effectively to drive clinical improvement, improve practice performance, and improve the patient and clinician experience. (See appendix 12)

- Quality Improvement opportunities were created through participating in the pilot with, 3 out of the 4 practices learning a new process they adapted to their practice.

- It is important to note that by providing access to Medical Objects this did not result in increased confidence in the value and use of secure messaging, mainly due to the lack of GP engagement. Therefore, most practices did not achieve the full benefits the MO product could potentially offer to the clinician experience.

- The lack of GP engagement with MO and the lack of interoperability with practice clinical software systems, both factors significantly impacted the clinician's capacity to collect clinical data efficiently. The method of manual data collection impacted the clinician time and was a key area impacting negatively on the clinician experience. The practice interview identified lack of interoperability as a key barrier for non-completion of data collection.

- Data collection via Excel rather than a software system increased the chance of data loading errors and quality of data due to the lack of controls that can be applied to Excel to enforce a higher level of data quality and consistency. This was reflected in the number of PROMs that could not be matched to clients CM.

- During the monthly QI meetings and when reviewing the data, the group noted that the data collection process did not collect information such as socio economic, bulk billing options and input form caregivers. This information in the view of the AHP would have added value to the output.

- Clinicians with a higher number of older and First Nations patients experienced less access to devices, internet and low digital literacy. To mitigate this issue some practitioners provided their own devices to patients. In these cased consumer digitals upskill becomes part of the clinician role and therefore impacts clinician time, which in the short-term impacts negatively on the clinician experience.

2. Did the BEAP project provide access to evidence-based reporting data sets?

- The project successfully proved the concept that existing software could be used to collect allied health data from various practices and professions. This de-identified data was collated and stored in a centralised PHN end point from where dashboard reports were developed. The data output can be provided at three levels: client (aggregated by client types), practice (aggregated by individual practice) and population health (i.e., BEAP combined practices).

- When able to relevant data has also been compared to Type 2 Diabetes Mellitus data sets from General practice in the HNECC PHN region (HNECC PHN GP T2DM) from December 2021 and the most recent Public Health Information Development Unit (PHIDU) Social Health Atlases.

- The project provided a benchmark for future projects to help support evidence-based reporting and has the potential to impact *Improving population Health, Improved patient experience, Value for money, Provider experience*

3. In the long term can the BEAP project demonstrate or have the potential to demonstrate the impact of various allied health interventions?

- Data collected and demonstrated in the results indicated a positive trend in patients progress when being treated by an allied health professional. This trend is promising however it would need to be verified on a larger scale project with the scope to assess the impact of external factors such as treatment by other health care clinicians, comorbidities, and medication.

- Due to the incorporation of a Unique Identifier (UI) generated within Medical Objects, both the clinical data reported by the AHP and PROM data reported by the patient, are able to be linked and compared. This linkage is unique to the BEAP project for the PHN and enabled the practitioner to see how the patients view of their health compared to the treatment/clinical measures from a wide variety of perspectives. A deeper analysis of clinical measures and PROMS on a larger scale project will provide access to multiple measures from both a patient and clinician perspective, therefore has the potential to provide a greater level of evidence of allied health intervention. The manual effort required by the clinician to facilitate this linkage negatively impacted the clinician experience due to the extra time required.

- All but one clinician agreed the data output demonstrated initial trends for how their profession impacts the management of Type 2 Diabetes Mellitus.

- First Nations patients were strongly represented within the pilot. Due to the QI focus of the pilot no ethics approval was sort, therefore this priority groups data will not be analysed. However, the pilot introduced the PHN to a valuable contact for future ethics approved projects to partner with and collect valuable First Nations data for allied health.

4. **In the long term could the outputs from this pilot be used for Quality Improvement opportunities for those treating people living with chronic diseases?**

- The clinicians all agreed the BEAP project provided valuable benchmark data that can be used in future Type 2 Diabetes Mellitus quality improvement analysis and overall provided new opportunities for QI.
- All but one practice agreed the data provided information that has the potential to improve the patient experience and the data provided was a valuable output not currently accessible within the practice.

5. **Can this pilot design be used to analyse other chronic diseases?**

- The success in this pilot design capturing T2DMdata demonstrates that the model is likely to successfully be adapted to capture different measures as relevant to other chronic diseases, this would need to be validated with a larger cohort.

In the long-term access to reporting as provided in the BEAP project at on a larger scale has the potential to impact all the aspects of the quadruple aim *Improving population Health, Improved patient experience, Value for money, Provider experience*

7.2 Project considerations

Area	Consideration for future projects
Benchmark	• The number of sessions provided compared to progress of client's goals would be worth considering in a larger data set to establish the number of visits required to impact the allied health intervention. • With hindsight from the BEAP #1 pilot, plan the different ways the data can be represented for future projects such as by profession, by year since diagnosis, by priority group. Use the BEAP data as a baseline data to identify clients who could possibly benefit most from this type of project to target in a future project.
CM	• HbA1C levels measure aligns to HNECC PHN GP T2DM data, however some AHP reported some patients reported as 'considerably outside target' made a considerable improvement in their result, however they remain 'considerably outside target' within the project measures. Practice 4 advised to consider if the measure for 'considerably outside target' needs a more granular lens to capture these improvements for patients reporting high HbA1C levels.
Data Sharing	• Throughout the pilot various AHP raised the issue that GP training about AHP scope of practice and impact is required. With sufficient and regular data is there potential to provide, per-GP practice, a regular separate focused dashboard which summarised allied health interventions for their patient cohort (in the way LUMOS reports provide practice level

	feedback on their patients' attendances/admissions in LHD facilities). PREMS dashboard reports measuring the sentiment and level of confidence in AHP service and accessibility of allied health services in their region, they maybe encourage to refer more often to help manage their own backlog. This could provide motivation to GPs to refer to allied health, see the benefits etc, promote multidisciplinary team approaches to patient care, and ideally promote utilisation of secure messaging or digital platforms to make referrals and get back AH intervention summaries. • Incorporate a feedback loop into outcomes.
Data	• Consider if a more generic data collection approach using common data sets is appropriate to make the measures relevant to more professions and more transferable. Investigate the option to move away from detailed clinical measures and possibly depend on AHP to advise clinical achievements. Update the questions to include more generic questions such as what you provided, where did your referral come from, how was it received and did your client attain goals. • With adequate data consider providing key outcomes by profession type to assess the impact of each AHP involved in the treatment process.
Data Quality	• Data collection in the future we need to pay closer attention to the data collection process to ensure better integrity and completeness of the data. Ideally a centralised or shared data collection tool could assist to provide consistency and validation in recording, although in this allied health space that may not be easily achieved unless the PHN provided that tool.

8. Recommendations

Recommendation 1: **Enhance the data collection and digital process** - analyse, prioritise, provide options with prices, and implement approved key learnings from the BEAP #1 pilot to develop a more sustainable, efficient, and scalable model. The development of interoperability to practice clinical management systems is a key priority, as it will reduce the impact of data collection on clinician time, improve the data quality and the data flow.

The approach recommended is to review the key activities for the PHN as informed by the Digital Health strategy such as outlined below;

- Pilot a modern, standards-based practice management system with a small group of practices
- Develop a small number of "beacon" practices in General Practice, Allied Health, Aged Care and Specialist Services
- Develop requirements for and procure a common PROMs / PREMs platform for use across the PHN and commissioned services
- Improve data quality - Work with healthcare providers, software vendors and commissioned services to improve data validation at the point of care

Ensure strong collaboration and coordination of activities within the PHN between protfolios to leverage a digital solution to address multiple needs.

Key learnings for the PHN are outlined in the below table

Learning Area	Learning for PHN
Data	• Consider how to measure other services accessed within the project data collection period, medication taken, GP visits via MBS data, community programmes accessed, specialist such as Endocrinologist raised by various AHP. • Capture if elderly patients are treated in an RACF (Residential Aged Care Facility) as this may impact access to allied health professionals as they are less likely to visit private practice raised by various AHP. • Consider a subject matter expert to design measures to be endorsed by AHP when looking at new disease or develop a more generic approach. • Potentially on a large-scale project PREM data could consider PHN identification by practice, profession, LHD location, or LGA to provide greater insights against other data sets. • PREMS, consider including measures that generated negative feedback in BEAP #1 as this is more valuable to identify QI opportunities suggested by practice 5. • Look at options to gain further feedback on negative PREMS data. • Further define the cohort to ensure the digital solution is appropriate. Considering socio economic factors, digital literacy, First Nations needs and access. If large elderly or low socioeconomic, regional cohort digital upskill or access needs to be built into the project, if this is not possible then the cohort may need to be modified.
Recommended change to improve sustainability and scale	**Patient level:** • Shorter PREM surveys requested by Practice 5 • Support for patients with low digital literacy, internet, and device access issues suggested by Practice 1 and 4 **Practice level**: • Improved interoperability with practice clinical management systems to automate the export of clinical measures to remove the requirement for clinicians to update Excel and improve data quality. Or invest in a clinical data collection tool. Strongly supported by all AHP in the group. • Simplify the Clinical measures to collect via a survey format or remove the clinician interpretation from the data collection process • Use a long-term software solution to ensure practices embed the software into the practice to fully gain the intended benefits. • Strategy to engage GPs with secure messaging referral • Provide coaching to develop a change and adoption plan per practice prior to data collection commencing suggested via practice interview. • Engage an external subject matter expert to develop clinical measures to be endorsed by AHP

	• Cost ot practice needs to be addressed in next pilot look at renumeration based on data collected and QI activates undertaken similar to PIP principals. **PHN level:** • Automation of clinical measures to enforce data consistency unable to achieve in excel and to digitally deliver to a PHN end point. • As a provider Medical Objects were flexible, efficient, and easy to deal with, the PHN team established rapport which could be leveraged for future projects. • Seek ethics approval to publish and share data. • QI opportunities could not be assessed until the full data set had been received at the end of the project, therefore consider building time at the end of the project to identify and work on key QI activities, including interpretation of results per practice and ideally in a face-to-face supported environment. • External evaluation to add validity to output and provide direction.
Education	• Health Data Analytics training including data quality and usage to promote change for the allied health sector. • LBGTQ training is provided to clinicians prior to future pilots to ensure forms are set up appropriately within the practice and any gasps can be addressed prior to the commencement of data collection. • Invest time in digitally upskilling the patients to ensure quality data collection or engaging a proxy to collect data on behalf of the patient e.g., care giver.

Table 14 Key learnings for PHN

Once the model has been enhanced this will provide the foundations for the following proposed pilots to run simultaneously, see details below;

Recommendation 2: BEAP #2 for T2DM - upscale the number of clinicians and patients participating in a second T2DM pilot with the aim to verify the initial data trends that demonstrate the positive impacts of allied health intervention on patient's care.

Recommendation 3: BEAP #3 for other chronic diseases - engage a subject matter expert to design clinical measures for another chronic diseases and run the BEAP model pilot against these measures. The main aim is to confirm the transferability of the model to manage other diseases. A project plan has already been drafted with focus on Pain Management.

Each project will require full ethics approval, including approval from the Aboriginal Health & Medical Research Council (AH&MRC) ethics committee. A commitment from the PHN for long term support for the technology used is critical for successful adoption. A professional external evaluation of all three BEAP projects is also recommended. The intention is to provide adequate rigour and increase credibility for PHN to confidently publish and share the outcomes externally. The BEAP #1 pilot outcomes indicate there is potential for future projects to deliver valuable evidence-

based reporting that demonstrates allied health intervention, from which the PHN can disseminate to support QI, advocacy and change within the allied health sector.

9. Conclusion

The BEAP pilot has provided a new method of data collection that was previously not possible, and initial analysis of results are indicating positive trends on patient's health while being treated by an allied health professional for Type 2 Diabetes Mellitus. The BEAP project aligns to the PHN's Allied Health Strategy at both HNECC PHN level and PHN national level. It also aligns to all the strategic areas of the PHN's Digital Health Strategy by supporting conditions for digital success, providing digital foundations and advanced capabilities also supporting digital-enabled models of care.

The outcomes of the project specifically adds knowledge to the advanced digital health capabilities (A6) 'Develop requirements for and procure a common PROMs/ PREMs platform for use across the PHN and commissioned services' for The PHN against theDigital Health Strategy.

Therefore, further activities incorporating the enhanced BEAP model is an appropriate and effective way to support the allied health sector at a practice, regional and national level.

10. Appendices

Appendix 1: Allied Health Strategy Clinical Systems Project Options Paper- FINAL

Appendix 2: PHN Project Logic BEAP Project.pdf

Appendix 3: PMP

Appendix 4: Allied Health BEAP Phase 1 Findings .pdf

Appendix 5: Data collection Workflow

Appendix 6: Clinical Measures

Appendix 7: PROMIS 10 Survey

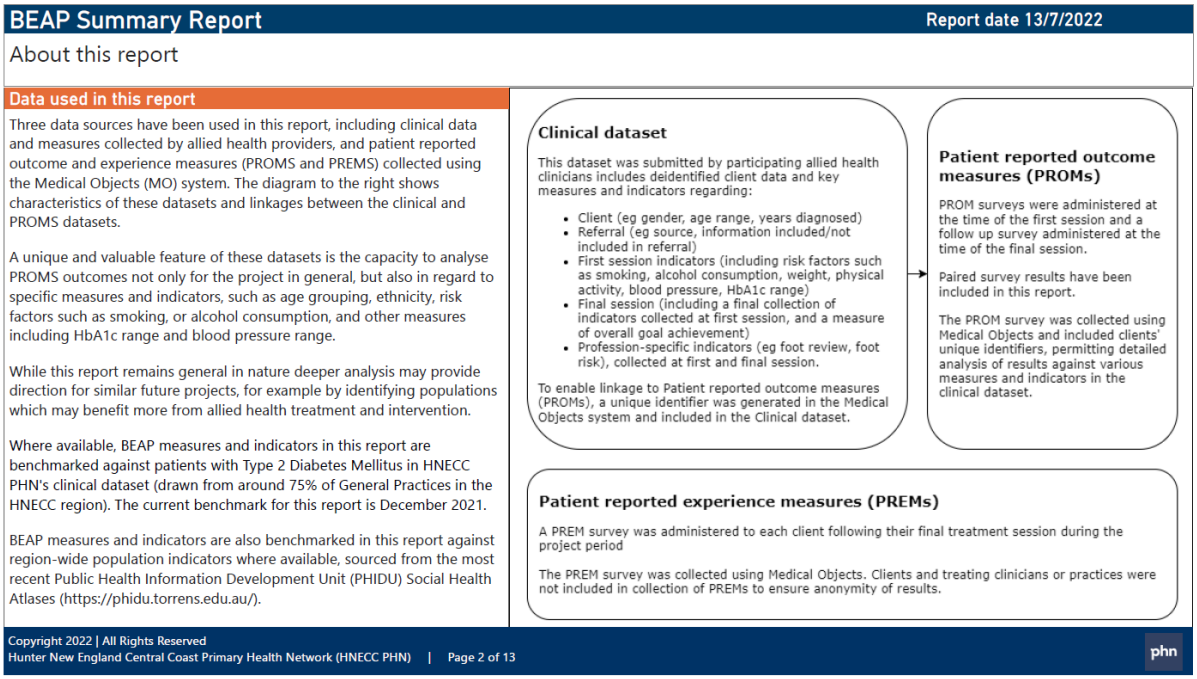
Appendix 8: PREM

Appendix 9: Clinician Survey #1 / Clinician Survey #2

Appendix 10: BEAP Data Collection Workflow.pdf

Appendix 11: BEAP Dashboard Report

a. Population Health level (BEAP population)



BEAP Summary Report Report date 13/7/2022

About this report

Data used in this report

Three data sources have been used in this report, including clinical data and measures collected by allied health providers, and patient reported outcome and experience measures (PROMS and PREMS) collected using the Medical Objects (MO) system. The diagram to the right shows characteristics of these datasets and linkages between the clinical and PROMS datasets.

A unique and valuable feature of these datasets is the capacity to analyse PROMS outcomes not only for the project in general, but also in regard to specific measures and indicators, such as age grouping, ethnicity, risk factors such as smoking, or alcohol consumption, and other measures including HbA1c range and blood pressure range.

While this report remains general in nature deeper analysis may provide direction for similar future projects, for example by identifying populations which may benefit more from allied health treatment and intervention.

Where available, BEAP measures and indicators in this report are benchmarked against patients with Type 2 Diabetes Mellitus in HNECC PHN's clinical dataset (drawn from around 75% of General Practices in the HNECC region). The current benchmark for this report is December 2021.

BEAP measures and indicators are also benchmarked in this report against region-wide population indicators where available, sourced from the most recent Public Health Information Development Unit (PHIDU) Social Health Atlases (https://phidu.torrens.edu.au/).

Clinical dataset

This dataset was submitted by participating allied health clinicians includes deidentified client data and key measures and indicators regarding:

- Client (eg gender, age range, years diagnosed)
- Referral (eg source, information included/not included in referral)
- First session indicators (including risk factors such as smoking, alcohol consumption, weight, physical activity, blood pressure, HbA1c range)
- Final session (including a final collection of indicators collected at first session, and a measure of overall goal achievement)
- Profession-specific indicators (eg foot review, foot risk), collected at first and final session.

To enable linkage to Patient reported outcome measures (PROMs), a unique identifier was generated in the Medical Objects system and included in the Clinical dataset.

Patient reported outcome measures (PROMs)

PROM surveys were administered at the time of the first session and a follow up survey administered at the time of the final session.

Paired survey results have been included in this report.

The PROM survey was collected using Medical Objects and included clients' unique identifiers, permitting detailed analysis of results against various measures and indicators in the clinical dataset.

Patient reported experience measures (PREMs)

A PREM survey was administered to each client following their final treatment session during the project period

The PREM survey was collected using Medical Objects. Clients and treating clinicians or practices were not included in collection of PREMs to ensure anonymity of results.

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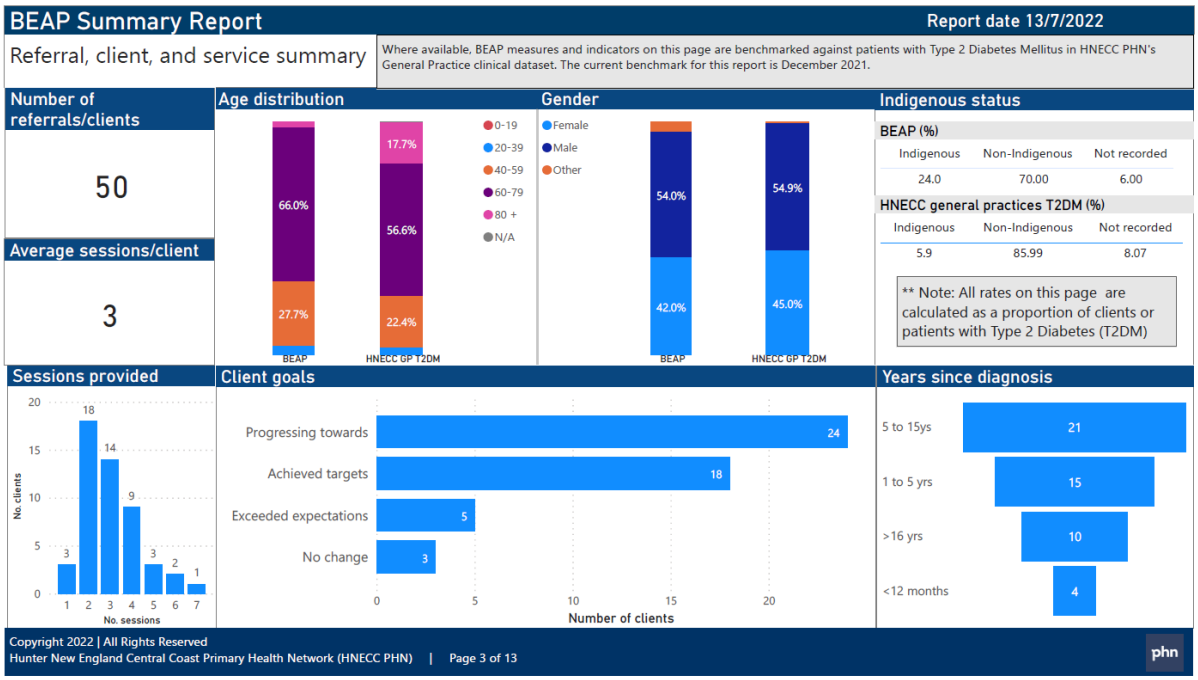
Hunter New England Central Coast Primary Health Network (HNECC PHN) | Page 2 of 13


BEAP Summary Report
Report date 13/7/2022
Referral, client, and service summary
Where available, BEAP measures and indicators on this page are benchmarked against patients with Type 2 Diabetes Mellitus in HNECC PHN's General Practice clinical dataset. The current benchmark for this report is December 2021.
Number of referrals/clients
50
Average sessions/client
3
Age distribution
0-19
20-39
40-59
60-79
80 +
N/A
66.0%
27.7%
17.7%
56.6%
22.4%
BEAP
HNECC GP T2DM
Gender
Female
Male
Other
54.0%
42.0%
54.9%
45.0%
BEAP
HNECC GP T2DM
Indigenous status
BEAP (%)
Indigenous
Non-Indigenous
Not recorded
24.0
70.00
6.00
HNECC general practices T2DM (%)
Indigenous
Non-Indigenous
Not recorded
5.9
85.99
8.07
** Note: All rates on this page are calculated as a proportion of clients or patients with Type 2 Diabetes (T2DM)
Sessions provided
No. clients
No. sessions
Client goals
Progressing towards
Achieved targets
Exceeded expectations
No change
Number of clients
Years since diagnosis
5 to 15ys
1 to 5 yrs
>16 yrs
<12 months
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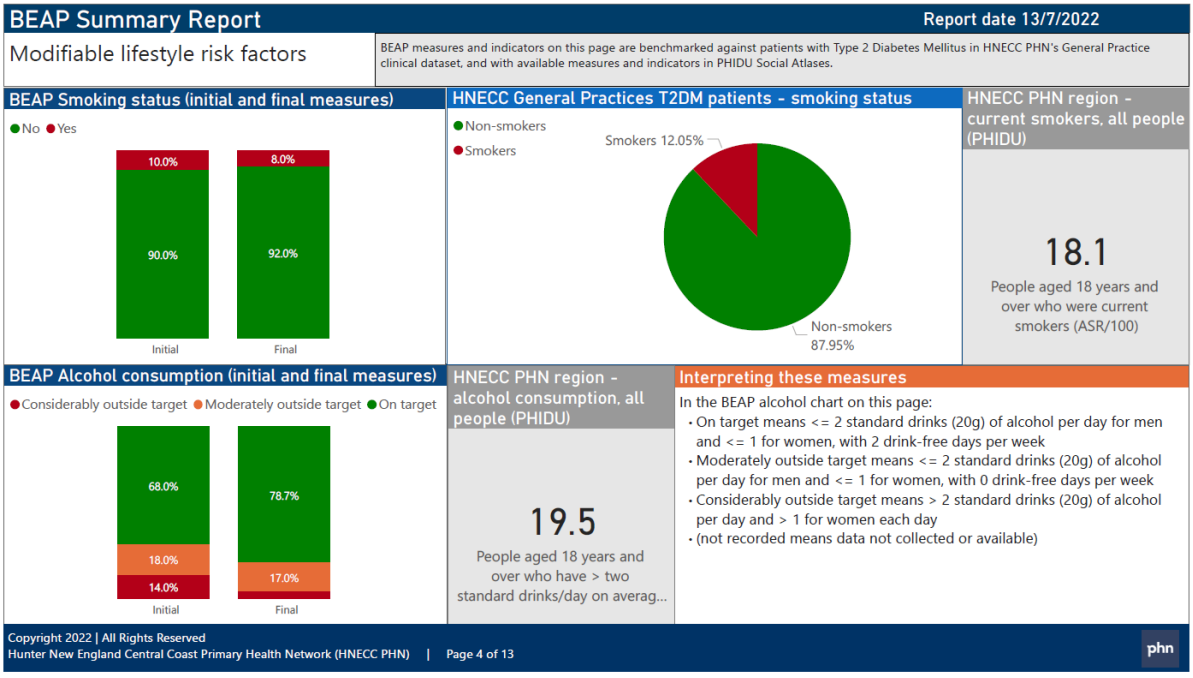
Hunter New England Central Coast Primary Health Network (HNECC PHN) | Page 3 of 13
phn


BEAP Summary Report
Report date 13/7/2022
Modifiable lifestyle risk factors
BEAP measures and indicators on this page are benchmarked against patients with Type 2 Diabetes Mellitus in HNECC PHN's General Practice clinical dataset, and with available measures and indicators in PHIDU Social Atlases.
BEAP Smoking status (initial and final measures)
No
Yes
10.0%
90.0%
8.0%
92.0%
Initial
Final
HNECC General Practices T2DM patients - smoking status
Non-smokers
Smokers
Smokers 12.05%
Non-smokers 87.95%
HNECC PHN region - current smokers, all people (PHIDU)
18.1
People aged 18 years and over who were current smokers (ASR/100)
BEAP Alcohol consumption (initial and final measures)
Considerably outside target
Moderately outside target
On target
68.0%
18.0%
14.0%
78.7%
17.0%
Initial
Final
HNECC PHN region - alcohol consumption, all people (PHIDU)
19.5
People aged 18 years and over who have > two standard drinks/day on averag...
Interpreting these measures
In the BEAP alcohol chart on this page:
• On target means <= 2 standard drinks (20g) of alcohol per day for men and <= 1 for women, with 2 drink-free days per week
• Moderately outside target means <= 2 standard drinks (20g) of alcohol per day for men and <= 1 for women, with 0 drink-free days per week
• Considerably outside target means > 2 standard drinks (20g) of alcohol per day and > 1 for women each day
• (not recorded means data not collected or available)
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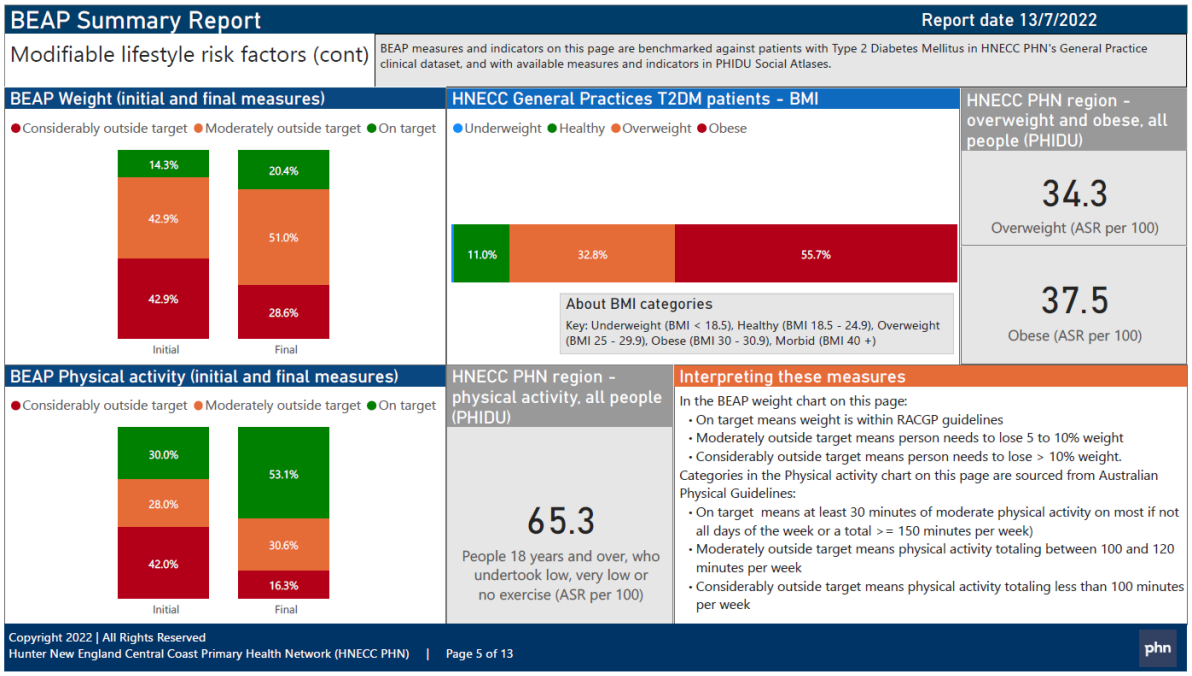
phn


BEAP Summary Report
Report date 13/7/2022
Modifiable lifestyle risk factors (cont)
BEAP measures and indicators on this page are benchmarked against patients with Type 2 Diabetes Mellitus in HNECC PHN's General Practice clinical dataset, and with available measures and indicators in PHIDU Social Atlases.
BEAP Weight (initial and final measures)
Considerably outside target
Moderately outside target
On target
14.3%
42.9%
42.9%
20.4%
51.0%
28.6%
Initial
Final
HNECC General Practices T2DM patients - BMI
Underweight
Healthy
Overweight
Obese
11.0%
32.8%
55.7%
About BMI categories
Key: Underweight (BMI < 18.5), Healthy (BMI 18.5 - 24.9), Overweight (BMI 25 - 29.9), Obese (BMI 30 - 30.9), Morbid (BMI 40 +)
HNECC PHN region - overweight and obese, all people (PHIDU)
34.3
Overweight (ASR per 100)
37.5
Obese (ASR per 100)
BEAP Physical activity (initial and final measures)
Considerably outside target
Moderately outside target
On target
30.0%
28.0%
42.0%
53.1%
30.6%
16.3%
Initial
Final
HNECC PHN region - physical activity, all people (PHIDU)
65.3
People 18 years and over, who undertook low, very low or no exercise (ASR per 100)
Interpreting these measures
In the BEAP weight chart on this page:
• On target means weight is within RACGP guidelines
• Moderately outside target means person needs to lose 5 to 10% weight
• Considerably outside target means person needs to lose > 10% weight.
Categories in the Physical activity chart on this page are sourced from Australian Physical Guidelines:
• On target means at least 30 minutes of moderate physical activity on most if not all days of the week or a total >= 150 minutes per week)
• Moderately outside target means physical activity totaling between 100 and 120 minutes per week
• Considerably outside target means physical activity totaling less than 100 minutes per week
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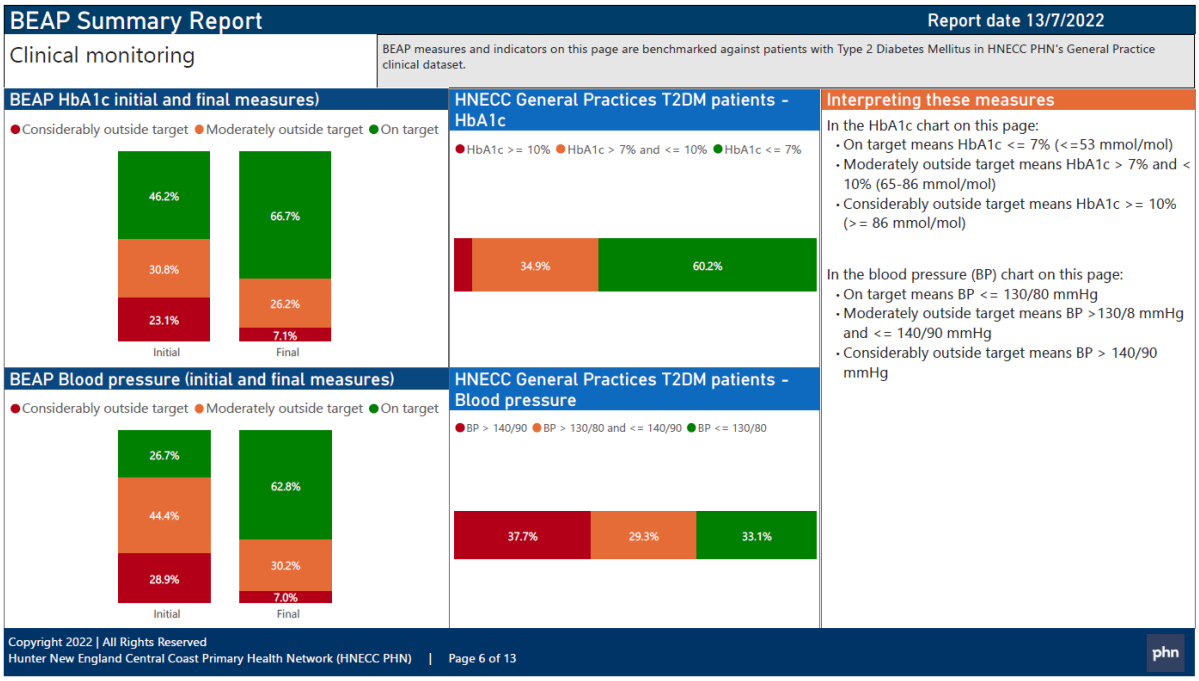
phn


BEAP Summary Report
Report date 13/7/2022
Clinical monitoring
BEAP measures and indicators on this page are benchmarked against patients with Type 2 Diabetes Mellitus in HNECC PHN's General Practice clinical dataset.
BEAP HbA1c initial and final measures)
Considerably outside target
Moderately outside target
On target
46.2%
30.8%
23.1%
66.7%
26.2%
7.1%
Initial
Final
HNECC General Practices T2DM patients - HbA1c
HbA1c >= 10%
HbA1c > 7% and <= 10%
HbA1c <= 7%
34.9%
60.2%
Interpreting these measures
In the HbA1c chart on this page:
• On target means HbA1c <= 7% (<=53 mmol/mol)
• Moderately outside target means HbA1c > 7% and < 10% (65-86 mmol/mol)
• Considerably outside target means HbA1c >= 10% (>= 86 mmol/mol)
In the blood pressure (BP) chart on this page:
• On target means BP <= 130/80 mmHg
• Moderately outside target means BP >130/8 mmHg and <= 140/90 mmHg
• Considerably outside target means BP > 140/90 mmHg
BEAP Blood pressure (initial and final measures)
Considerably outside target
Moderately outside target
On target
26.7%
44.4%
28.9%
62.8%
30.2%
7.0%
Initial
Final
HNECC General Practices T2DM patients - Blood pressure
BP > 140/90
BP > 130/80 and <= 140/90
BP <= 130/80
37.7%
29.3%
33.1%
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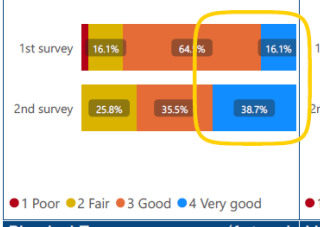
Hunter New England Central Coast Primary Health Network (HNECC PHN) | Page 6 of 13
phn

Best-practice, Equity, Analysis Pilot (BEAP) for Type 2 Diabetes

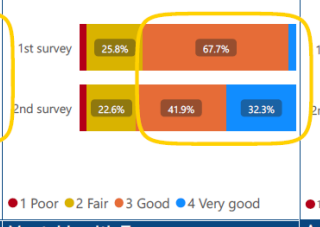
Report date 15/8/2022

Patient recorded outcome measures (PROMS) - selected results

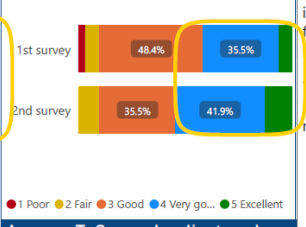
General health (1st and 2nd survey)



Physical health (1st and 2nd survey)



Mental health (1st and 2nd survey)



Interpreting these results

PROMIS Scale v1.2 - Global Health measures were used in patient survey instruments for this project at the initial and final (post treatment) stage of client intervention.

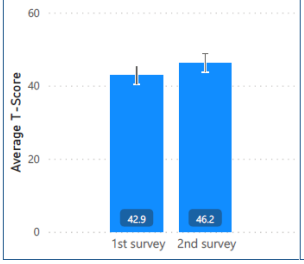
Three initial and final sets of measures are summarised on this page (for full set of measures see appendix):

- Global01 - Self rating of general health
- Global03 - Self rating of physical health
- Global04 - self rating of mental health

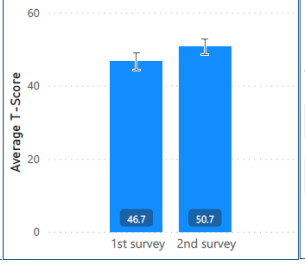
Responses to surveys were scored and converted to standardised T-scores to enable analysis of changes between survey occasions. T-score distributions are standardised so that 50 is the mean score for the general US population (no Australia mean was available at time of this report).

Changes in T-scores and the mean between surveys, along with upper and lower confidence intervals enable testing of results for statistical significance.

Physical T-score summary (1st and 2nd survey)



Mental health T-score summary (1st and 2nd survey)



Average T-Scores by client goal achievement (1st and 2nd survey)

Survey	1st survey		2nd survey	
Goal achievement	Phys.	MH	Phys.	MH
Achieved targets	40.69	44.98	45.15	52.24
Exceeded expectations	39.95	44.10	45.43	47.18
No change	42.30	45.80	47.70	48.30
Progressing towards	46.67	49.53	46.72	49.37

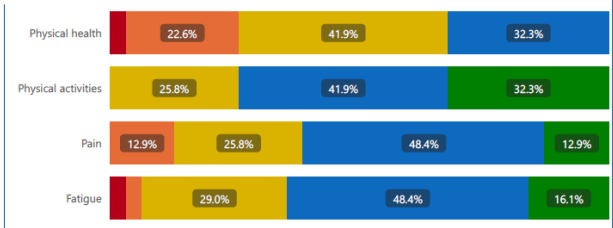
Best-practice, Equity, Analysis Pilot (BEAP) for Type 2 Diabetes

Report date 15/8/2022

Patient recorded outcome measures (PROMS) (cont)

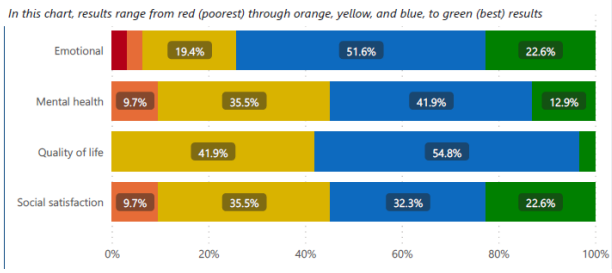
Final overall physical T-score, contributing dimensions

In this chart, results range from red (poorest) through orange, yellow, and blue, to green (best) results



Final overall mental health T-score, contributing dimensions

In this chart, results range from red (poorest) through orange, yellow, and blue, to green (best) results



Average T-Scores by overall self-rating of general health - Global01 (1st and 2nd survey)

Survey	1		2	
Self-rating	Phys.	MH	Phys.	MH
Very good	52.00	53.78	50.64	52.54
Poor	26.70	25.10		
Good	41.93	46.33	47.85	49.09
Fair	41.92	45.90	36.61	49.24

Average T-Scores by self-rating of undertaking social activities - Global09 (1st and 2nd survey)

Survey	1		2	
Self-rating	Phys.	MH	Phys.	MH
Excellent	42.35	57.90	47.78	53.31
Fair	36.10	47.05	33.93	42.63
Good	43.34	44.45	44.70	47.97
Poor	26.70	25.10		
Very good	45.01	48.15	49.06	51.93

Key to PROMIS v1.2 Global Health dimensions

Reference	Dimension	Question
Global01	Your health	In general would you say your health is (Poor / Fair / Good / Very good / Excellent)?
Global02	Quality of life	In general would you say your quality of life is (Poor / Fair / Good / Very good / Excellent)?
Global03	Physical health	In general, how would you rate your physical health?
Global04	Mental health	In general, how would you rate your mental health, including your mood and ability to think?
Global05	Social satisfaction	In general how would you rate your satisfaction with your social activities and relationships?
Global06	Physical activities	To what extent are you able to carry out your everday physical activities such as walking, climbing stairs, carrying groceries or moving a chair?
Global07	Pain scale	How would you rate your pain on average (range 0 [no pain] to 10 [worst pain imaginable])
Global08r	Fatigue scale	How would you rate your fatigue on average?
Global09r	Social activities	In general, please rate how well you carry out your usual social activities and roles (this includes activities at home, at work and in your community, and responsiblilities as a parent, child, spouse, employee, friend, etc)
Global10r	Emotional scale	How often have you been bothered by emotional problems such as feeling anxious, depressed, or irritable?

BEAP Summary Report

Report date 13/7/2022

Patient recorded outcome measures (PROMS) by selected client/program indicators (cont)

Average T-Scores by number of sessions - (1st and 2nd survey)

Survey	1		2	
Sessions	Phys.	MH	Phys.	MH
1 session only	47.55	46.15	54.25	49.55
2-3 sessions	43.93	47.63	46.07	51.64
4 or more sessions	40.40	45.89	44.36	49.12

Average T-Scores by final assessment of physical activity (1st and 2nd survey)

Survey	1		2	
Status	Phys.	MH	Phys.	MH
On target	46.25	47.99	49.98	52.24
Moderately outside target	40.68	46.46	43.06	48.46
Considerably outside target	37.68	44.66	40.40	49.84

Average T-Scores by final smoking status (1st and 2nd survey)

Survey	1		2	
Smoker (yes/no)	Phys.	MH	Phys.	MH
No	42.58	47.01	45.32	50.77
Yes	45.80	46.03	52.07	49.13

Average T-Scores by final weight status (1st and 2nd survey)

Survey	1		2	
Status	Phys.	MH	Phys.	MH
On target	46.56	43.48	50.28	50.84
Moderately outside target	43.78	49.13	46.62	51.47
Considerably outside target	39.06	44.86	42.31	48.79

Average T-Scores by final HbA1c status (1st and 2nd survey)

Survey	1		2	
Status	Phys.	MH	Phys.	MH
On target	43.93	47.11	47.54	51.64
Moderately outside target	39.44	44.44	44.24	47.44
Considerably outside target	49.50	49.75	50.80	56.15

In the HbA1c data above:
- *On target means HbA1c <= 7% (<=53 mmol/mol)*
- *Moderately outside target means HbA1c > 7% and < 10% (65-86 mmol/mol)*
- *Considerably outside target means HbA1c >= 10% (>= 86 mmol/mol)*

Average T-Scores by final blood pressure status (1st and 2nd survey)

Survey	1		2	
Status	Phys.	MH	Phys.	MH
On target	45.94	47.58	49.78	51.40
Moderately outside target	38.61	47.40	40.49	49.98
Considerably outside target	43.25	45.90	41.60	44.80

In the blood pressure data above:
- *On target means BP <= 130/80 mmHg*
- *Moderately outside target means BP >130/8 mmHg and <= 140/90 mmHg*
- *Considerably outside target means BP > 140/90 mmHg*

Interpreting these results

Linkage of PROMIS Scale v1.2 - Global Health measures with the clinical dataset collected during the BEAP Pilot permit deep dives into self-reported outcomes for clients grouped by clinical indicators and client characteristics.

On this page, standardised T-scores from the first and final PROM survey are presented in some of these groups to indicate and compare variations in outcomes within and between groups.

T-scores are provided for two sets of PROM outcomes: physical, and mental health. The tables allow comparison within an indicator of groups of clients (for example smokers compared to non-smokers), comparison of changes from 1st to 2nd (final) survey at program completion, as well as confirmation (or not) that clinical assessment aligns with client self-reported outcomes.

Generally, an increase in T-score from 1st to 2nd survey indicates an improvement in self-rating of physical or mental health, however further analysis is required to indicate statistical significance of this.

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Best-practice, Equity, Analysis Pilot (BEAP) for Type 2 Diabetes

Report date 15/8/2022

Patient recorded outcome measures (PROMS) by selected client/program indicators (cont)

Average T-Scores by number of sessions - (1st and 2nd survey)

Survey	1st survey		2nd survey	
Sessions	Phys.	MH	Phys.	MH
1 session only	47.55	46.15	54.25	49.55
2-3 sessions	43.87	47.07	45.75	51.15
4 or more sessions	40.40	45.89	44.36	49.12

Number of sessions - insights from PROMS T-Score analysis

Clients received different numbers of sessions from allied health practitioners during the project. Analysis of T-Scores for clients shows that regardless of the number of sessions, clients reported improvements in both their physical health and mental health demonstrated by an increase in initial (1st survey) and final (2nd survey) T-scores in all dimensions.

While all results here are encouraging, a larger cohort of clients would help identify other factors contributing to results (eg whether clients receiving fewer sessions are already motivated or generally healthier, whether session numbers simply reflect allied health standard interventions, etc.).

Average T-Scores by final smoking status (1st and 2nd survey)

Survey	1st survey		2nd survey	
Smoker (yes/no)	Phys.	MH	Phys.	MH
No	42.49	46.63	45.09	50.42
Yes	45.80	46.03	52.07	49.13

Smoking status - insights from PROMS T-Score analysis

Analysis of PROMS T-Scores by final smoking status shows clients reported improved physical and mental health irrespective of their final smoking status.

It is interesting to note that clients still recorded as smokers at the end of the program had a strong improvement in their mental health T-score. A deeper dive into this group would be helpful to identify what may have contributed to this, including what allied health interventions they received, and whether they improved on other risk factors or clinical measures. A larger study cohort would also determine the validity of these results generally.

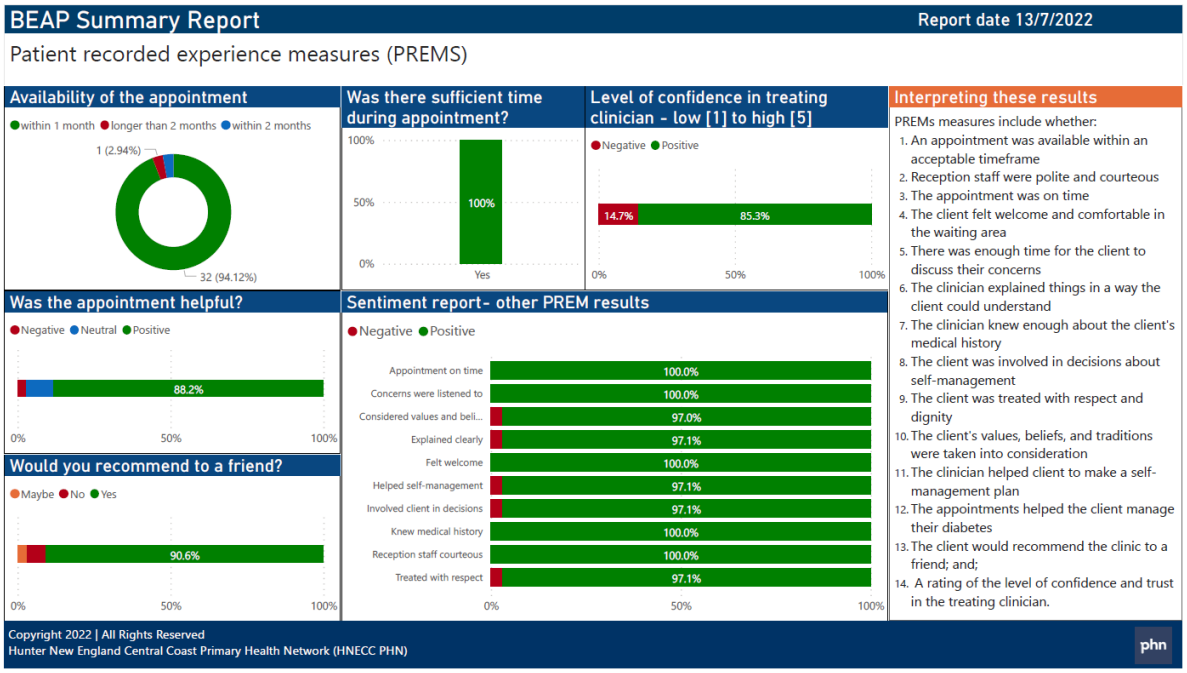
Interpreting these results

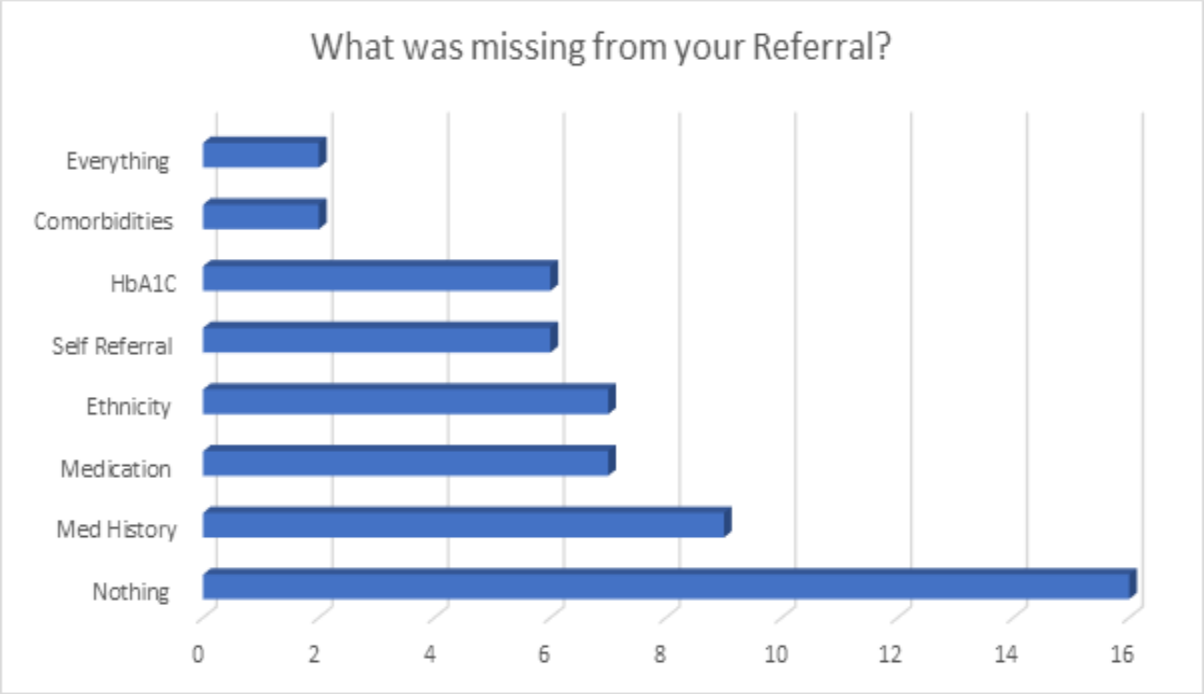
Linkage of PROMIS Scale v1.2 - Global Health measures with the clinical dataset collected during the BEAP Pilot permit deep dives into self-reported outcomes for clients grouped by clinical indicators and client characteristics.

On this page, standardised T-scores from the first and final PROM survey are presented in some of these groups to indicate and compare variations in outcomes within and between groups.

T-scores are provided for two sets of PROM outcomes: physical, and mental health. The tables allow comparison within an indicator of groups of clients (for example smokers compared to non-smokers), comparison of changes from 1st to 2nd (final) survey at program completion, as well as confirmation (or not) that clinical assessment aligns with client self-reported outcomes.

Generally, an increase in T-score from 1st to 2nd survey indicates an improvement in self-rating of physical or mental health, however further analysis is required to indicate statistical significance of this.





Appendix 12: Clinician Experience Measures aggregated data

Key findings from Clinician Experience survey at start #1 and end of project #2

Finding	Details
Impact of known benefits of Secure messaging: Some practices noticed a reduction in paper use, some improvement in audit trail and environmental impact.	• Access to a clear audit trail of sent and received information x 1 Slight improvement • Ease of access to patients' documentation, Access to a clear audit trail of sent and received information 1 x improved • Efficiency and environmental impact by using less paper x1 much improved x 1 improved
Impact of known benefits of Secure messaging: Areas where secure messaging is expected to demonstrate improvement remained unchanged for all participants.	• Access to the number of referrals received weekly • Access to the number of reports shared weekly • Collaboration with other health professionals
AHP Receiving Referrals: Fax, email and patient were the most common forms of Referral delivery to AHP regardless of long or short term access to MO secure messaging.	• Email: 3 often, 1 rarely • Fax: 3 often, 1 rarely • Patient: 2 often, 2 rarely • MO: 5 referrals were received via MO during the project to a practice using MO prior to the project • SeNT eReferral has never been used to receive a referral
AHP Sending documents: Regardless of access to MO email and fax were most commonly used to send client documents. Long term MO users were the only practices to send documents via MO.	• Email: 3 often, 1 rarely • Fax: 2 rarely, 1 often, 1 never • Client: 1 often, 1 rarely • MO: 1 always, 1 rarely, 2 never • 1 x practice uses MO to send a high volume of documents (50 per week) yet rarely receives referrals via MO • The use of sending documents by mail reduced from survey #1 compared to #2 • SeNT eReferral has never been used to send documents to other health professionals
System usage: MO was used for PREMS & PROMS by all, yet minimal to no use for other purposes with the exception of 1 long term MO practice	• **Collaborate with other health professionals** 1 often, 3 never • **Track and sent comms** 1 rarely, 3 never • **Collect other data** 1 rarely, 3 never • **Follow up on missing information** 1 often, 1 rarely, 2 never When asked if a user successfully followed up on missing information all said No

Finding	Details
Data collected in the BEAP projects was used by our practice to analyse ….	• **Data quality:** 3 Y with limitations, 1 x not possible • **QI:** 3 Y with limitations, 1 possible but not done • **Impact of patient care:** 1 Y meets expectations, 2 Y with limitations, 1 possible but not done • **Trace and report on progress:** 3 Y with limitations, 1 possible but not done • **Patient experience:** 1 Y meets expectations, 1Y with limitations, 1 possible but not done, 1 unsure • **Compliance to Work practices:** 1Y with limitations, 2 possible but not done, 1 unsure
Were there any additional key benefits of using Medical Objects Explorer in your practice?	• 2 x No, 1 x PROMs & PREMs & 1 security of info
Key barriers to using MO	**All anticipated in Survey #1 and confirmed in survey #2** • No Integration – information leaving a secure environment to be re-entered • Time as clinician led • GP did not have or use MO **Clinician interview at end of project** • Staff adoption to change and digital adoption
MHR usage: A slight increase in using MHR for 2 participants during the project change from never to rarely	• Key barrier for using MHR in the project is the difficulty in locating the most current pathology report.
Rate how likely your practice is to adopt to secure messaging out of 5?	• An average Initially 4 this dropped to 3.75
Agreed value of data collected	• the data output provided valuable output to my practice not currently accessible – 1 unsure / 1 disagree • the data output provided new opportunities for Quality Improvement • the data output demonstrated initial trends for how my profession impacts the management of Type 2 Diabetes - 1 unsure • the data output provided information that has the potential to improve the patient experience – 1 disagree • the pilot provided valuable benchmark data that can be used in future Type 2 Diabetes Quality Improvement analysis • Value of data in order 1. PREM, 2. PROM and 3. CM
Was Data collection method sustainable for future projects	• 2 x Yes not paper fairly simple to complete, 1 x spreadsheet clumsy prefer online option, font small on PREM and PROMS, 1 x No too time consuming, 1 x need interoperability to clinical software

Finding	Details
Access to the types of reports provided in the BEAP project would enable me, to use data and clinical systems more effectively to ...	All agreed or strongly agreed to below • Drive Clinical improvement • Improve practice performance • Improve the patient experience • Improve the clinical experience – 3 x Strongly agree
All rated one level higher in survey #2 as to understanding of QI fundamentals	
Expectations being met from the BEAP project	• 3 x partially reasons process, due to profession, workload too busy due to COVID, 1 x Yes learnt a lot from clients
3 out of 4 practices learnt new processes they will adopt in practice	
If you could do the project again, what would you change?	• Data collection method , longer time frame, engage with other clinicians to help with collection of data, ideally not during COVID
Incorporating the lessons learnt from this pilot, do you see value in undertaking a similar project to measure allied health contributions in managing other chronic diseases ?	• 1 x No 3 x Yes • Suggestions Stroke , Heart Disease and Osteo arthritis, Cancer prevention. Why does it have to be a chronic disease?
All members were highly satisfied with how the project was managed, over all comments and feedback	• Chat forum for practitioners to provide more opportunity for collaboration with peers, earlier meetings to allow for more collaboration • The Chief Commonwealth Allied Health Officer spoke at the APodA conference last week about how they draw on this type of study when governments want to increase funding in certain areas. I'm sure the results/report will be useful to her and other peak bodies. • Good experience, PHN supportive but not sustainable • Fun Great meeting new AHP in region

Appendix 13: PROMIS_Global_Scoring_Manual.pdf (healthmeasures.net)

Appendix 14: PROMIS 10 validation letter

Appendix 15: Consent form individual participant BEAP Pilot.pdf

Appendix 16: Medical Objects price model

11. Glossary

The following table lists acronyms and abbreviations that are used in this report

Term	Definition
AHP	Allied Health Professional
AH	Allied health
PHN	Primary Health Network
PROMs	Patient Reported Outcome Measures
PREMs	Patient Reported Experience Measures
CM	Clinical Measures
MO	Medical Objects
PHI	Primary Health Insights
PROMIS 10 – Global Health Survey	Validated Survey tool used for PROMS
T-score	PROMIS 10 metric
MH	Mental Health
GH	General Health
PH	Physical Health
HNECC PHN GP T2DM	Type 2 Diabetes Mellitus in HNECC PHN's General Practice clinical dataset
T2DM	Type 2 Diabetes Mellitus
LHD	Local Health District
MHR	My Health Record
RACF	Residential Aged Care Facility
RACGP	Royal Australian College of General Practitioners
SeNT	Secure eReferral Network Transfer
PHIDU	Public Health Information Development Unit (PHIDU) Social Health Atlases. (https://phidu.torrens.edu.au/).
EBR	Evidence Based Reporting
UI	Unique Identifier
KEQ	Key Evaluation Questions
LHD	Local Health District
Local Government Area	Local Government Area
IMIT	Information Management Information Technology
Practice	Allied Health Practice