National Primary Care Data Service (NPCDS)

Expression of Interest

EOI Released: 13 November 2017

Deadline for Respondent Registrations: 20 November 2017 at 5:00 PM

Deadline for Questions: 27 November 2017 at 5:00 PM

Deadline for Submissions: 13 December 2017 at 5:00 PM

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1. Overview of Request for Expressions of Interest

1.1 Introduction

This Request for Expressions of Interest (referred to in this document as the EoI), seeks responses from vendors and/or vendor consortia to develop and operate a National Primary Care Data Service.

Collectively, General Practice holds a wealth of information on the health and wellbeing of the majority of New Zealanders. Only a small fraction of this data is currently assembled in any meaningful way to support the sector's understanding of population health, quality improvement initiatives and health system planning, including the value of investment options.

Individually, Primary Care Networks (PCNs) currently collect practice data for a variety of purposes and in a variety of infrastructures, but without the ability to compare or contrast this information across PCNs. There is limited capacity to combine this data with other national, regional or local datasets to support clear and meaningful changes that will improve the performance of the New Zealand health and social systems and the wellbeing of all New Zealanders.

The majority of PCNs, having recognised the benefits of establishing a National Primary Care Data Service (NPCDS), have jointly funded this EoI with a view to gauging the capacity, capability, cost and feasibility of implementing a NPCDS for the sector.

This process aims to enable the selection of a vendor partner or consortium to work with the sector to progress the NPCDS into being a reality for New Zealand. Submissions addressing the development or the operational aspects of the requirement alone will be considered, but comprehensive submissions will be preferred.

1.2 Overview of this document and request for EoI responses

This document is divided into six sections (plus appendices):

1. **Overview**: Overview of the EoI and envisaged National Primary Care Data Service including its purpose, process and timeframe, scope and desired objectives.
2. **Instructions** for respondents as to the process and corresponding policies being applied.
3. **Information required** to be submitted by respondents.
4. **The requirements** of the NPCDS, split by Architectural & Technical Requirements and Reporting & Output Requirements.
5. **Additional requirements** including privacy, security and audit, implementation, operational management, commercials, risks and assumptions.
6. **The draft assessment criteria** that are proposed to be applied to the process and responses.

1.3 Potential outcomes of the EoI process

Any design considerations and/or corresponding questions in the EoI do not pre-suppose these will be in the final design of the solution.

There are a number of potential outcomes depending on the level and suitability of responses to this EoI.

1. This is not a binding tender process. The Commissioners of this service may decide to progress, partly progress, alter some requirements or cease the process.

2. The Commissioners have complete discretion as to whether to select one, many (or no) respondents as a result of this EoI process.

3. The Commissioners have complete discretion as to whether the EoI will evolve into an RFI and/or RFP, or the selection of one or a shortlist of respondents from the EoI to move into a design phase.

1.4 Process and timeframe for the EoI

An Interim Governance Group has been established for the EoI. This group is referred to in this document as the "Commissioners". The Commissioners will co-opt sector expertise as advisors to form an Evaluation Team to review submissions and make recommendations to the Commissioners.

The planned EoI timetable is outlined below – this may be altered by the Commissioners at their discretion:

Planned Date	Step
13/11/2017	Publication of EoI
20/11/2017	Vendor registration as respondent to the EoI
27/11/2017	Close off date for questions
13/12/2017	Close off date for EoI submissions
22/12/2017	Initial evaluation of responses
22/12/2017	Vendors advised as to shortlisting decision
18/1/18	Shortlisted vendors briefed on co-design process
1/2/18 – 15/2/18	Evaluation workshops
22/2/18	Decision as to how project will proceed

For the purposes of clarity or background, some additional documentation may be made available to the respondents during the process of the EoI. This remains confidential and for the sole purpose of responding to the EoI.

While the EoI is active (from the date of publication to the end date of responses), there is a strict protocol that any questions seeking clarification are to be channelled through the nominated contact point (Rosie.Harty@francishealth.co.nz) only and no approach to other related parties seeking any feedback on the content, scope or any other detail is to be made. Where it becomes apparent that any responding party has breached this protocol, the Commissioners reserve the right to disqualify the respondent from the EoI assessment and subsequent processes.

Responses to questions will be made available to all parties at the same time to ensure a level playing field.

1.4.1 The Process

Vendors will provide a comprehensive response to this EoI. The Commissioners have appointed an Evaluation Team comprising:

- Clinicians;
- PCN Managers;
- Invited input from the Ministry of Health and DHBs; and
- Architects and other technical specialists.

The Evaluation Team will consider all responses against the Evaluation Criteria set out in this EoI (see Section 6). Depending on the number of responses received, the Evaluation Team may initially create a shortlist of respondents for further consideration. The shortlisted respondents will present their solution to three evaluation panels covering the:

- commercial and managerial,
- development and hosting, and
- reporting, business intelligence and clinical quality improvement aspects of the service.

These panels will seek to test the proposals through vendor presentations and question and answer sessions with the Evaluation Team. These sessions will be used by the project to gain a better understanding of the vendors' proposals and, where appropriate, to work with vendors to improve the mutual understanding of the optimum approach to the project. The Commissioners reserve the right to use any of the outputs from these evaluation workshops in the event that a subsequent RFP or RFI is developed as part of a final vendor selection process. However, it should be noted that there will only be limited time available during this stage of the evaluation, and vendors are encouraged to propose and present solutions that are comprehensive and that have been carefully considered.

1.4.2 Outcome of the Evaluation Process

Following this initial evaluation, the Commissioners will consider a number of options as to how to progress the process:

- Not proceeding with the development of the NPCDS.
- Choosing a vendor (or consortium) to request a tender for the design phase of the development.
- Choosing a shortlist of vendors (or consortia) to request a tender for the design phase of the development.
- Choosing a shortlist of vendors to enter into a competitive dialogue relating to the design, development and operation of the NPCDS, leading to a request for tenders from those vendors.

The option chosen by the Commissioners will relate to the comprehensiveness and credibility of the responses and their competitive positioning. The Commissioners do not wish to require vendors to enter into an expensive and protracted competitive process where the preferred supplier can clearly be identified at this stage. However, in the case of a single tender being requested, any significant variation from the EoI response in that tender would bring into question whether the Commissioners would wish to proceed with that vendor.

Where a competitive tender is sought, this would indicate that more than one competitive, comprehensive and credible response has been received. Where a competitive dialogue is initiated, this would indicate that no single response fully meets the criteria from a credibility, competitive and/or comprehensiveness perspective and the objective of the dialogue would be to develop a more comprehensive and credible baseline against which a competitive process could be initiated.

 At any event, the Commissioners reserve the right to reconsider all options, including not proceeding at all, following completion of the design phase.

1.5 Innovative Approach

We recognise that there will be more than one possible way of approaching the task outlined in this document and encourage respondents to be innovative and creative in their response. This EoI represents an opportunity to drive a different approach to looking at and working with information in the health sector. Respondents are asked to respond to all mandatory questions in the document in order to comply with the process, but also to provide innovative and alternative approaches and solutions as appropriate.

1.6 Scope and Desired Objectives of the NPCDS

1.6.1 Why are we doing this?

To provide:

- A data analytics service that supports our understanding of:
    - o population health;
    - o quality improvement;
    - o health system planning; and
    - o the value of investment in different care settings.
- Data to PCNs to support their quality improvement initiatives, organisational planning, policy submissions and patient care.
- A broad, consolidated, anonymised view of PCN data for use by the PCNs, DHBs or MoH in more effective analysis of the population and trends.
- Health intelligence as a collective primary care asset.
- Quality and outcomes information at the GP's desktop.

In order to:

- Compare and contrast collected data across PCNs to assess variation for quality improvement purposes.
- Reduce duplication and cost of data collection and analysis.
- Enable PCNs to more easily meet the reporting requirements of the Ministry of Health.
- Tell the primary care performance story in a more cohesive and evidence-based way.
- Close the gap in transparency of primary care (account for use of public funds, contribute data to inform policy) to fix the current perceived under-investment in more cost-effective primary interventions.
- Enable a lower compliance burden with General Practitioner professional standard reporting (MOPS/CPD requirements) and clinical audit.
- Make reflective practice easier and more of a day-to-day activity.
- Level the playing field on capacity and capability for information and analysis in the sector – addressing existing inequities in the ability to report.

1.6.2 What will the NPCDS comprise?

- A service that utilises a single consolidated data service that all PCNs populate with key data (a national data service).
- Open to all PCNs to:
    - o Contribute data; and
    - o Access data and reports.
- Owned and governed by Primary Care together with the DHBs and the Ministry of Health.

- o Potentially an independent, not-for-profit entity, owned by participating PCN members;
  - o That has detailed procedures and policies to ensure clarity of governance and ownership, protection of data privacy and security for members and customers, and collaboration between parties;
  - o A subscription-based model with:
    - Full suite of standard PDF reports available quarterly for downloading; and
    - Website tools for PCNs to generate reports on specific indicators, or to conduct specialised comparative analyses with appropriate drill-down to the patient level at the local practice and practitioner level.
  - o The PCNs will be providers of a PCN-defined data set, and receive standard and *ad hoc* reports; the Ministry, DHBs and IDI would be joint customers of data subject to service level agreements and will be part of the co-design of the solution.
- Operated by a 3rd party entity on behalf of member PCNs.
- Consistent, affordable and cost-effective (compared to each PCN maintaining their own infrastructure).
- Easy to access (to undertake analysis and planning).
  - o Accessed via an 'Access Deed' (sets out standard reporting that can always be accessed/provided) and provides a transparent mechanism for securing additional analysis through the NPCDS governance process.
- More than just the 'minimum dataset', and a common information intelligence platform for the PCNs.
- Driven by PCN requirements, and linked with the NZ Health Strategy, the social investment framework, and DHB and Ministry needs.

The data that supports the NPCDS will be:
- A standardised collection including:
  - o Clinical data;
  - o Service utilisation data;
  - o Demographic data; and
  - o Some data on social determinants.
- Based on an agreed primary care data set.
- Contributed by participating PCNs across the country and combined with other national health data sets.
- Identifiable primary care data to be collected from PCNs; this will be matched with National Collections or DHB data.
- Protected from inappropriate access or use.
- Anonymised as well as identified to the relevant points of care and stewardship of the patient.

The NPCDS will provide:

- A standardised data set using NHI as unique identifier of patients
- Standardised analytical/reporting tools.
- A common, highly capable analytical function across primary care and national collections data.

The NPCDS will have:

- Robust clinical governance as a key component.
- An effective approach to managing information privacy and security.
- The ability to support the strict security requirements of the health sector.
- A shared ownership and governance model across participating PCNs.
- Design and construction supported by a privacy impact assessment.

1.6.3 A non-technical overview
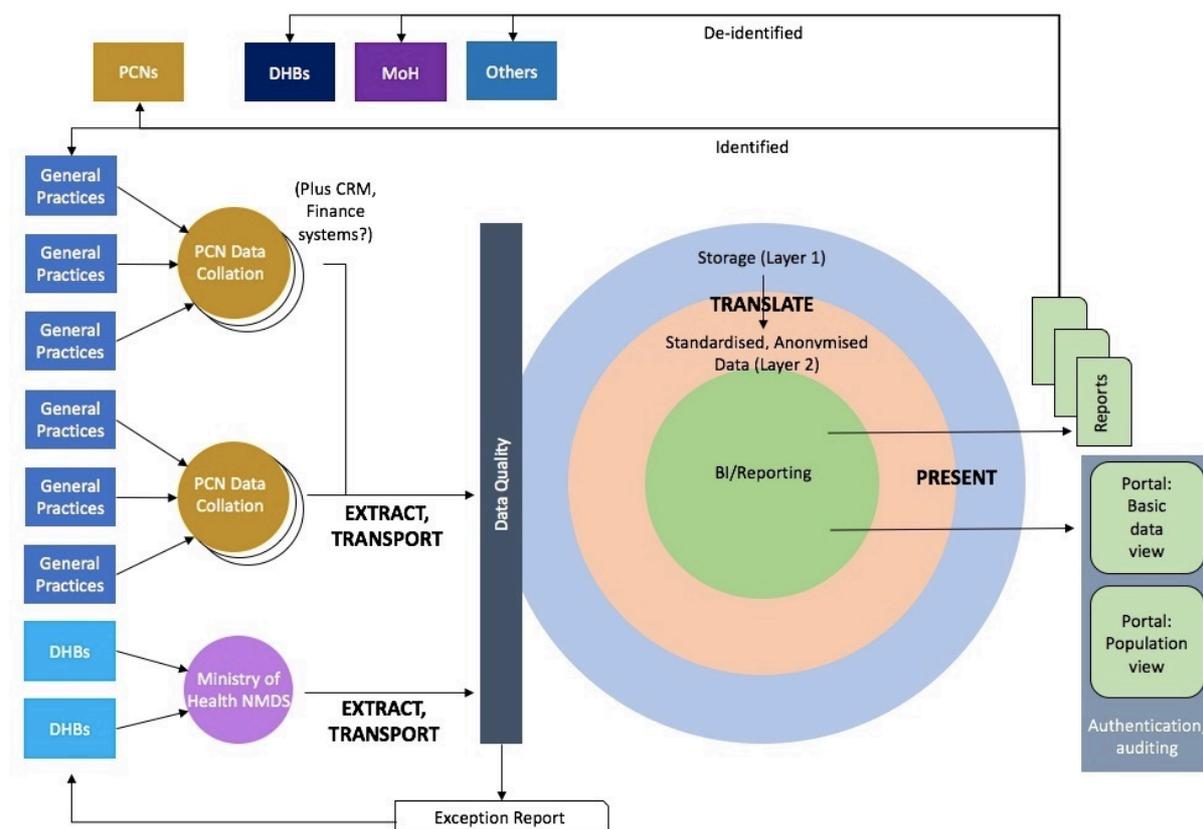
1.6.4 Stakeholders

The NPCDS is envisaged to serve multiple stakeholders:

Who benefits	How?
Patients	More effective and cohesive care delivery for the patient, enabled through better analysis of joined-up data.*
General Practitioners	Analysing patient cohorts in more detail. Being able to see like-for-like comparison across broader populations (not just local geography and population) for quality improvement. Assisting with clinical audit. Assisting with maintenance of professional standards.
Practice Nurses	Analysing nurse interventions, clinics and prescribing behaviour.

Primary Care Networks	Having the opportunity to tell the primary care performance story in a more cohesive and evidence-based way.
	Analysing trends and helping plan alternative and more effective care delivery.
DHBs	Better population health analysis and better ability to plan new service delivery models that provide more effective (Safe, Timely, Effective, Efficient, Equitable and patient-centred care).
Ministry of Health	Broader and deeper population health analysis and corresponding policy and budget planning.
RNZCGP	Assessing quality of care delivery, clinical variation and corresponding training and quality improvement initiatives.
	Minimising duplication of activity, making it easier for GPs to meet Medical Council requirements, ensuring that activities provided by GPs are more meaningful and assisting GPs to provide better care.
HQSC	Meeting the primary care commitments of its quality charter.

* patient level data will have strict role and context controls to ensure it is restricted to enabling clinicians to identify their patients within a broader cohort and otherwise protect patient identification.

1.6.5 Principles

The creation of the NPCDS is underpinned by the following principles:

The National Primary Care Data Service should

1. Be primary care led.
2. Be clinically relevant and able to positively influence point of care delivery.
3. Provide improved consistency and quality of care through utilising standardised datasets to measure primary care performance and its impact on health and social care.
4. Leverage information to make a better contribution to patient and population outcomes.
5. Be national and inclusive (information and use).
6. Have an open architecture – both at business and technology levels (i.e. new systems or other organisations can come on board at later dates).
7. Provide fair and equitable use of information across primary care.
8. Be transparent in terms of process, what data is included and how it is used.
9. Be secure and trusted.
10. Remove duplication (of processes).
11. Support the quadruple aim (the triple aim of the New Zealand Health Strategy and the additional aim of supporting those people delivering it).
12. Be sustainable.
13. Be a not-for-profit model.
14. Add value to information (driving data up the value chain).
15. Be a learning system (both in development and use).
16. Create an environment for innovation in primary healthcare.

2. Instructions to EoI Respondents

2.1 Ability to respond to all or part of the EoI

The Commissioners have a clear preference to enter into a prime contracting relationship with a vendor or consortium of vendors. Vendors are encouraged to seek partners if that is necessary to address the totality of the requirements. However, due to the contrasting nature of the capabilities involved in the technology provision and the reporting/business intelligence deliverables of the solution, the Commissioners *will* accept Expressions of Interest that address:

1. The Architecture & Technical component;
2. The Reporting and Output component; or
3. Both components.

There is a section of core and common questions that respondents must answer regardless of which of the above options they choose (see section 5, Additional Requirements).

2.2 What you need to provide

There are three stages:

1   Send an email notifying the intention to submit an Expression of Interest, which must be sent within five working days of this document being published, to Rosie.Harty@francishealth.co.nz

2   Ask any questions relating to any aspects of the EoI which require clarification for you to be able to respond.

3   Provide a formal response by the closing date (see Section 1.4), which must include all elements requested.

Respondents should provide a full, though concise, submission. Generic marketing material should only be included if it is specifically referenced by, and relevant to, the content of the Expression of Interest.   Where respondents wish to submit such material or information, it must be attached separately and clearly labelled "Supporting Material".

2.2.1 Lateral thinking

Respondents are invited to think laterally about the NPCDS requirements and submit any proposals or strategies which they believe may better meet the requirements described or which would offer increased benefits. This does not preclude the respondents from the need to respond to the mandatory questions.

2.2.2 Joint responses

Both individual and joint responses are acceptable. Any joint responses submitted must identify one of the joint respondents as the contact point for all communications.

Please also provide information in respect to any joint proposal as follows:

- details of each joint respondent;
- nature of the relationship;
- the roles and responsibilities of each party;
- previous partnership / joint venture experiences / successes; and
- level of formality around the relationship.

2.3 Response format and terms and conditions of responding

EoI responses must be submitted by the date specified in the timetable (or as subsequently advised by the EoI contact point). They must be submitted via email with a MS Word (or compatible) document that provides all of the details requested in the format outlined. PDF copies will not be accepted. The Commissioners acknowledge that the content will not be changed following receipt of the response.

The Respondents, in formally engaging with the EoI process, acknowledge that:

1. Any costs incurred by the respondent in providing the EoI response or participating in the EoI (including on-site presentations) are the sole responsibility of the respondent.
2. The respondent will not solicit or canvas any member of the Commissioners or any party associated with preparation or assessment of the EoI on any matter relating to the EoI while the process is underway. Any breach of this may result in the respondent (at the discretion of the Commissioners) being disqualified from the process.
3. Any conflict of interest or potential conflict of interest with any party formally related to the Commissioners or the Project Team working on the EoI will be declared as part of the respondent's EoI submission.
4. All information provided is warranted by the respondent to be complete and accurate.
5. No part of the solution proposed will breach any third party intellectual property rights.
6. The Commissioners
   a. Have the rights to change any of the requirements;
   b. Have the right to engage with one some, all or none of the respondents on any elements of their submissions;
   c. Retain the right to change any of the timeframes outlined;
   d. Retain the rights to all material in the submissions;
   e. Acknowledge that the information provided within the responses will only be used for the purposes of evaluation of this EoI;
   f. May share data (under confidentiality) with third-parties to assist in the evaluation of the EoI; and
   g. Will not be liable either directly or indirectly or through consequential loss for any losses incurred by the respondents as a result of this EoI.

2.4 Information Requirements

Respondents to the EoI are required to provide the following accompanying detail in addition to the (referenced) responses to the requirements outlined in this document.

Company Information

1. Company name, formation date (including any acquisition or merger activity in the last 10 years), staff (domiciled in New Zealand), NZ legal entity status, annual turnover, location(s) in NZ, key staff profiles (i.e. any staff being considered for a role in the solution if you are successful), company profile, company's history and market profile as it relates to your submission.
2. Where this is a joint proposal, the company details for each company/organisation that is part of the submission.

3. The Nominated contact person for the EoI (only one contact point for each response including any joint responses). This should include name, title, email and contact phone number.
4. Company strategy – where relevant to the EoI response.
5. Notice of any current or pending or known: litigation, merger of acquisition activity or expressly stating "none" in answer to this question.
6. Any relevant certification, accreditation or affiliations held by the company/organisation.
7. Relevant references – relating to the elements of the EoI you are responding to. This should include any previous or current work relating to provision of information or advisory services to primary care in New Zealand.
8. Interests Register – any active or pending contracts with any primary care organisations, DHBs, Ministry of Health, HQSC or any other health related entity, including the name of the entity and the current (or pending) work you are doing for them.

3. EoI Pro-Forma Response Form (to be completed and submitted by all respondents)

3.1 Organisation details

Name of organisation	
Name of contact person	
Position of contact person	
Email address of contact person	
Telephone number of contact person	
Postal address of organisation	

3.2 Statement

We have examined the Expression of Interest (EoI) for the National Primary Care Data Service and have read and understood the terms and conditions set out in this document.

We attach our Expression of Interest response in accordance with your request for Expressions of Interest and warrant that this is complete and accurate based on our interpretation of your requirements. We warrant that all company information requested is complete and accurate as at the time of submitting the EoI.

We attach all information requested for the EoI and can be contacted during the course of the EoI evaluation via the contact person noted above.

We further undertake to update the nominated contact point for the EoI with any updates to the company information disclosed in this submission.

Signed by:…………………………………………………………… Dated:……………………………......

On behalf of:…………………………………………………………(the submitting organisation)

4. Outline Requirements

You are required to respond to any question that is not labelled as 'Optional' (all questions considered as mandatory response unless stated otherwise).

The questions are divided into the following areas:

Section	Coverage	Question Ref *	Instructions
Respondents can choose to respond to 4.1/4.2 or 4.3 or both coverage areas			
4.1, 4.2	Architecture & Technical	[A*n*]	Can choose to respond to this (optional) section only
4.3	Reporting and Outputs	[R*n*]	Can choose to respond to this (optional) section only
Mandatory sections for all respondents			
5.1	Privacy, Security and Audit	[P*n*]	All respondents must complete
5.2	Implementation	[I*n*]	All respondents must complete
5.3	Operational management	[O*n*]	All respondents must complete
5.4	Commercials	[C*n*]	All respondents must complete
5.5	Risks	[R*n*]	All respondents must complete
5.6	Assumptions	[AS*n*]	All respondents must complete

*refers to the numbering convention for the questions in each section

Descriptive rather than prescriptive

The nature and purpose of the EoI is to find a suitable (and the best) partner to work with to collectively refine and deliver the best and most (cost) effective NPCDS. Accordingly, the requirements are not designed to be prescriptive, rather to define some parameters, current thinking and boundaries for the solution.

The structure of the questions in this Outline Requirements section generally solicit description responses i.e. describe how you support the following design principles and describe your views on the best way of achieving the required solution.

While this flexibility is the case, the areas where the Commissioners and project team will not compromise are in the areas of ensuring data integrity, confidentiality and high availability of the architecture.

Architectural and Technical Requirements – two different options

There are a number of schools of thought on the approach to designing and delivering the data service. Rather than limit the options at this stage, the EoI seeks to gain input from the respondents to gauge the best approach.

The options include:

1. A classic enterprise data warehouse (centralised) approach that includes transport, storage and translation (sometimes referred to at ETL – extract, transform and load) [see Section 4.1].
2. A Health Information Exchange (HIE) model that takes a distributed approach to reporting and introduces the concept of an Application Program Interface (API) that is managed by each PCN to make relevant data available with relevant controls [see Section 4.2].

The majority of technical/architectural questions raised in the EoI relate to the first option. The second option is also outlined and respondents are asked to comment on which of these options they prefer and how they would approach the implementation for their preferred architectural option.

4.1 Architectural and Technical Requirements: Centralised Approach

4.1.1 Architecture and Layers of the Enterprise Data Warehouse

In line with the generally accepted layers and principles of data warehouse architecture, the technical/ architectural scope of the data warehouse includes 5 layers:

Extract ➤ transport ➤ Storage ➤ Translation ➤ Data Presentation/ BI

The relevant considerations and recommendations for these are outlined in the following sections.

The commonly accepted design of a data warehouse is based on Bill Inmon's top-down approach (4 key principles, see below).

Subject-oriented: The data in the data warehouse is organized so that all the data elements relating to the same real-world event or object are linked together.

Time-variant: The changes to the data in the database are tracked and recorded so that reports can be produced showing changes over time.

Non-volatile: Data in the data warehouse is never over-written or deleted -- once committed, the data is static, read-only, and retained for future reporting.

Integrated: The database contains data from most or all of an organization's operational applications, and that this data is made consistent.

Question:

A1: Describe how your proposed solution conforms with the Inmon principles of a data warehouse and, if it differs, why?

4.1.2 Extract

The assumption is that the data warehouse will operate on an opt-in basis per PCN and, within that, an opt-out basis per practice and/or per patient.

The scope of extracts for the data warehouse will ultimately be from multiple sources including primary care sourced data and external data sources. The primary care data sources will primarily be from Practice Management Systems (PMS) although other sources (such as CRM and finance systems) may also be added.

There are already several PMS-specific and 3rd party tools used for extracts from PMS (including though not limited to: BPAC, Karo data management, Dr Info, IQE and other localised and proprietary methods).

It is recommended that the EoI and ultimate data warehouse solution remain agnostic to the method and tool for extract, providing it meets the most up-to-date published extract standard. Agnostic does not mean that the extract is out of scope of the EoI. In some cases, some primary care (and ultimately other) organisations may not have toolsets to enable extracts; therefore, the EoI seeks a fall-back alternative(s) from the respondents that provides a solution for extract where the users do not have one or wish to seek an alternative.

Data integrity is key to trust in the system and, therefore, it is recommended that the data warehouse be designed to accept extracts from a point-in-time that complies with a published standard. Any data that fails to meet the standard is reported in an extract file exception report provided back to the source system owners for review and correction. The corresponding data that is accepted into the data warehouse needs to be transparent as to the quantum and type of data excluded due to data quality issues.

The currency of data that drives frequency of extract is largely determined by the type and purpose of the various reports. As a rule-of-thumb, local primary care extracts should be provided on a weekly basis as a minimum.

Secondary care data can be sourced from the Ministry of Health´s National Minimum Data Set (NMDS) and includes Emergency Department encounters. The reporting frequency specified by the Ministry is 20 days from admission/discharge/event with a two-day turnaround by the Ministry once it receives the data. Therefore, from day of encounter, the data is made available 22 days later. It is recommended that a weekly feed from NMDS is preferable to seeking direct feeds from each DHB and strikes a balance between a 22-day turnaround and waiting an additional $n + 22$ days for the data to be caught up. On this basis, the Ministry data would be approximately one month behind the actual episode date.

Pre- or co-requisites	
Item	**Narrative**
Protocol for opt-out	The assumption is that the warehouse will operate on an opt-in basis per PCN and, within that, an opt-out basis per practice and/or per patient. A standard opt-out protocol needs to be in place for all PCNs contributing to the data warehouse.
Specification for extract	Definition including exclusions and inclusions, format, data type and acceptance of null values for each data element introduced into the data warehouse.

Pre- or co-requisites	
Item	**Narrative**
Exception processing and reporting	Method of validating each extract to check content against the specification rules and reporting back to the data source owners/custodians the specific records that have failed the validation and the reason for the failure. A repeat extract to pick up corrections will need to be designed.
Report of type and volume of data excluded from the extract	A report or detail made available to the users of the data warehouse that outlines the number and type of records excluded from the data warehouse for a specific period. This should be made available with the reports that correspond to the period in question to enable the user to gauge the completeness of the data in the cohort being analysed. Data exclusions should be based (and reported) based on different types, namely: 1. Opt out practices; 2. Opt out patients; and 3. Data elements excluded due to failing extract data integrity checks.

Ref	Recommendations
1	The data warehouse will operate on an opt-in basis per PCN and, within that, an opt-out basis per practice and/or per patient.
2	Providing a single extract mechanism from source systems (e.g. PMS) for the data warehouse is not in the scope of the EoI.
3	A published standard for any data element and corresponding definition and business rules is a pre-requisite to that element being part of the data warehouse. Each of these will be part of a published Extract specification.
4	No historic data will be fed into the warehouse unless it passes the data integrity and quality control checks of the extract specification.
5	Where Ministry of Health national collection data is timely (e.g. published/available within one month of submission), this will be the preferred ´source of truth 'to DHB data and direct DHB feeds will not be made to the data warehouse.
6	Extracts from practices shall be on a weekly basis.
7	Extracts from the Ministry of Health shall be on a weekly basis.
8	The preferred ´source of truth' for secondary care data including Emergency Department visits is the Ministry of Health and not direct-feeds from DHBs.

9	Any contributing party to the NPCDS can opt out and the note about exclusion will be transparent to those reading the reports.

Questions:

A2: How would your solution support the principles and steps of the proposed design (be specific)?

A3: The process proposes a "standard" for the extract that is developed, maintained and enforced. How does your proposed solution cater for this? What do you think needs to be covered in the standard and how can it best be maintained and enforced?

A4: The proposed design needs to cater for an opt out scenario and the corresponding reporting needs to include detail of what data is excluded. How do you propose to deal with this?

A5: The extract layer is agnostic to the solution – i.e. it is proposed that existing (and new entrant) 3rd party tools can be used to perform the extract. However it is also proposed that, for those participants who do not have an extract tool, one be provided by the NPCDS solution. What do you propose for a 'default' extract tool in this case?

A6: The suggested design calls for exception reporting where there are data integrity issues in the extract. Describe what your solution would provide for such exception reporting and how you would best support the quality controls to improve compliance and data integrity over time?

A7: Comment on each of the extract recommendations above as to whether you agree or disagree and how you would either support or provide an alternative?

A8: What elements do you believe are missing from or would help improve on the extract recommendations?

4.1.3 Transport

Transporting data from the extract files will use secure and encrypted methods, preferably Hypertext Transfer Protocol Secure (HTTPS) based.

The technology provider may wish to consider the use and adoption of the Eight Wire platform for the transmission of data between health and social services.

Ref	Recommendations
10	End-point transport will use best practice (HTTPS or Connected Health) and not FTP.
11	Any data transport mechanism will comply with best practice and any relevant standards

Questions:

A9: How would your solution support the principles and steps of the proposed design (be specific)?

A10: What transport mechanism(s) does your current solution use and why?

A11: Describe what experience you have with using Connected Health and Eight Wire?

A12: Comment on each of the extract recommendations above as to whether you agree or disagree and how you would either support or provide an alternative?

A13: What elements do you believe are missing from or would help improve on the transport recommendations?

4.1.4 Storage

The Ministry of Health has recently updated its advice regarding cloud-based storage and use of off-shore cloud facilities in line with Government policy. This has relaxed the stipulation of data needing to be hosted within New Zealand. However, strict guidelines have been set by the Government Chief Information Officer (GCIO) that include a 105 question instrument to assess the risk of the solution proposed.

The general acceptability of off-shore hosted data for General Practice is unclear. Please state in your response the basis of any proposed cloud-solution and where it resides (including any copies or backup).

In line with the (Inmon model of) generally accepted principles of data warehouse architecture that the design be:

> **Time-variant**: The changes to the data in the database are tracked and recorded so that reports can be produced showing changes over time; and

> **Non-volatile:** Data in the data warehouse is never over-written or deleted -- once committed, the data is static, read-only, and retained for future reporting;

It is recommended that the staging table contain and retain (i.e. persist in perpetuity) all data from the extract.

The data must be securely stored. As there will be patient identifiable data in the storage table, the storage area must have security and audit logging and checking in place (as must the rest of the data warehouse on all layers beyond the transport layer (which is controlled by way of encryption)).

Ref	Recommendations
12	Storage will persist – i.e. any data that is extracted and sent will remain in perpetuity and unadulterated in the storage area (for the purposes of future reconciliation and linkage back to source).
13	Any cloud-based service needs to undergo a risk audit based on the GCIO risk assessment framework.

Relevant standards – Storage layer	
Standard/Guidelines	**Refer**
GCIO Cloud services guidelines	https://www.ict.govt.nz/guidance-and-resources/using-cloud-services/assess-the-risks-of-cloud-services/ https://www.ict.govt.nz/guidance-and-resources/using-cloud-services/assess-the-risks-of-cloud-services/cloud-computing-mitigating-risk/

A14: How would your solution support the principles and steps of the proposed design (be specific)?

A15: Where do you propose hosting the data? Would it be in the cloud and, if so, on (NZ) or off shore? Where are any backups of this data stored?

A16: Describe what exposure you have you had to GCIO and/or Ministry of Health security and risk assessment processes for data?

A17: What elements do you believe are missing from or would help improve on the Storage recommendations?

4.1.5 Translation

This layer considers 3 main factors:

1   The data warehouse design;
2   Up-to-date reporting and transparency of translation rules; and
3   Patient privacy and traversing between aggregate, non-patient identifiable information and patient-identifiable data.

The data warehouse design

A key recommendation is to be as agnostic as possible in the data warehouse design. Do not hard-code or design the dimensions or facts around PMS specific design. At the core, there should be a master patient dimension and a master provider dimension. Beyond that, if you can uniquely identify a patient you can tie various data to that patient (i.e. grow the model over time).

EOI respondents are requested to provide a data warehouse design including dimensions and facts to provide the most flexibility for reporting and ensure that the design is not predicated on PMS or source system specific design.

Up-to-date reporting and transparency of translation rules

For the purposes of interpretation, trust in the reporting and analysis by 3rd parties, all translation must be transparent, reported and up-to-date. Consideration should be given to tools that facilitate this (e.g. the Ministry of Health and Pegasus use Wherescape Red, which supports all three of the industry standards – Dimensional (Kimball), Third Normal Form (Inmon) and Data Vault (Linstedt)). Any recording and reporting of this needs to be available in a standard format and using automated tools wherever possible.

Patient Privacy and Confidentiality

The translation stage needs to cater for two levels of patient data:

1. The identifiable level or method of being able to present the patient(s) or relevant cohorts back to the relevant provider(s); and

2. A non-identifiable set of information for these patients that allows a rich profile, pattern and analysis searching and reporting.

The Ministry of Health have released a paper on patient-identifiable information sharing **Guidelines for disclosure and use of NHI level health information** [see Appendix B]*.* (Extract from*: "The Ministry has concluded that DHBs and PCNs are entitled to request unencrypted NHI level health information for the purposes of planning, monitoring and quality improvement of health services to enable*

successful implementation of the System Level Measures and improving health outcomes of their population. Specifically:

• PCNs are entitled to request information on patients enrolled at that PCN; and

• DHBs are entitled to request information on patients domiciled within the DHB AND information on patients enrolled at PCNs they fund AND information on patients who do not live in the DHB district but to whom the DHB has provided health services.")

The degree to which the relevant controls and checks/balances are built into the data warehouse will determine whether it meets the criteria for such sharing of information.

Rather than re-invent the wheel, it is recommended that the design of the data warehouse adopt the Pegasus/Canterbury model for creation of these two different views of data. This is outlined in the appendix of this document [Appendix C]*.*

The recommendations and relevant standards for the translation layer of the data warehouse are summarised below:

Ref	Recommendations
14	The EoI should have very broad recommendation regarding data warehouse design to see what the responses are and to ensure the result is not too prescriptive.
15	The adoption of a tool to automate the documentation of what and how data is translated in the data warehouse and keep this detail transparent, accessible and up-to-date.
16	Ensure the contract with the data warehouse solution provider stipulates any tools and detail must be transferable to other/future suppliers/providers of the data warehouse in future years (e.g. as the result of a contract review or re-tender).
17	Adopt the Pegasus/Canterbury model of differentiating patient identifiable data and non-identifiable data for analysis purposes.

Relevant standards – translation layer	
Standard/Guidelines	Refer
Ministry guidelines on sharing of identifiable information.	▪ Guidelines for disclosure and use of NHI level health information ▪ National Collections Data Disclosure and Confidentiality Deed ▪ Data Sharing Security Accreditation Policy (24 May 2012)

Questions:

A18: How would your solution support the principles and steps of the proposed design (be specific)?

A19: Describe your proposed data model including dimensions and facts and outline why you propose the design in this way.

A20: Comment on each of the translation recommendations above as to whether you agree or disagree, and how you would either support or provide an alternative.

A21: Review the Canterbury design in the appendix of this document and comment on how you would support this, an equivalent or alternative model that achieves the same requirements. Describe why you are proposing an alternative approach (if you are).

A22: What elements do you believe are missing from or would help improve on the extract recommendations?

4.2 Architectural and Technical Requirements: Health Information Exchange and API Option

The image below suggests an EoI scope but also existing environments and future-state environments. HIE is a catch all term for an interoperable exchange and there are many examples of different technologies being used for population health and clinical intervention globally.

4.2.1 API over ETL

1. Putting in place an NPCDS API gateway would standardise the input/output for the NPCDS. With an API approach whatever transformation is necessary is handled by the data supplier i.e. PCN, DHB, MoH. The management entity can focus on data and technical governance and not data mapping and validation.

2. The second benefit from an API gateway is that it opens up the platform for innovation by external parties, creating an app marketplace.

4.2.2 A non-technical overview
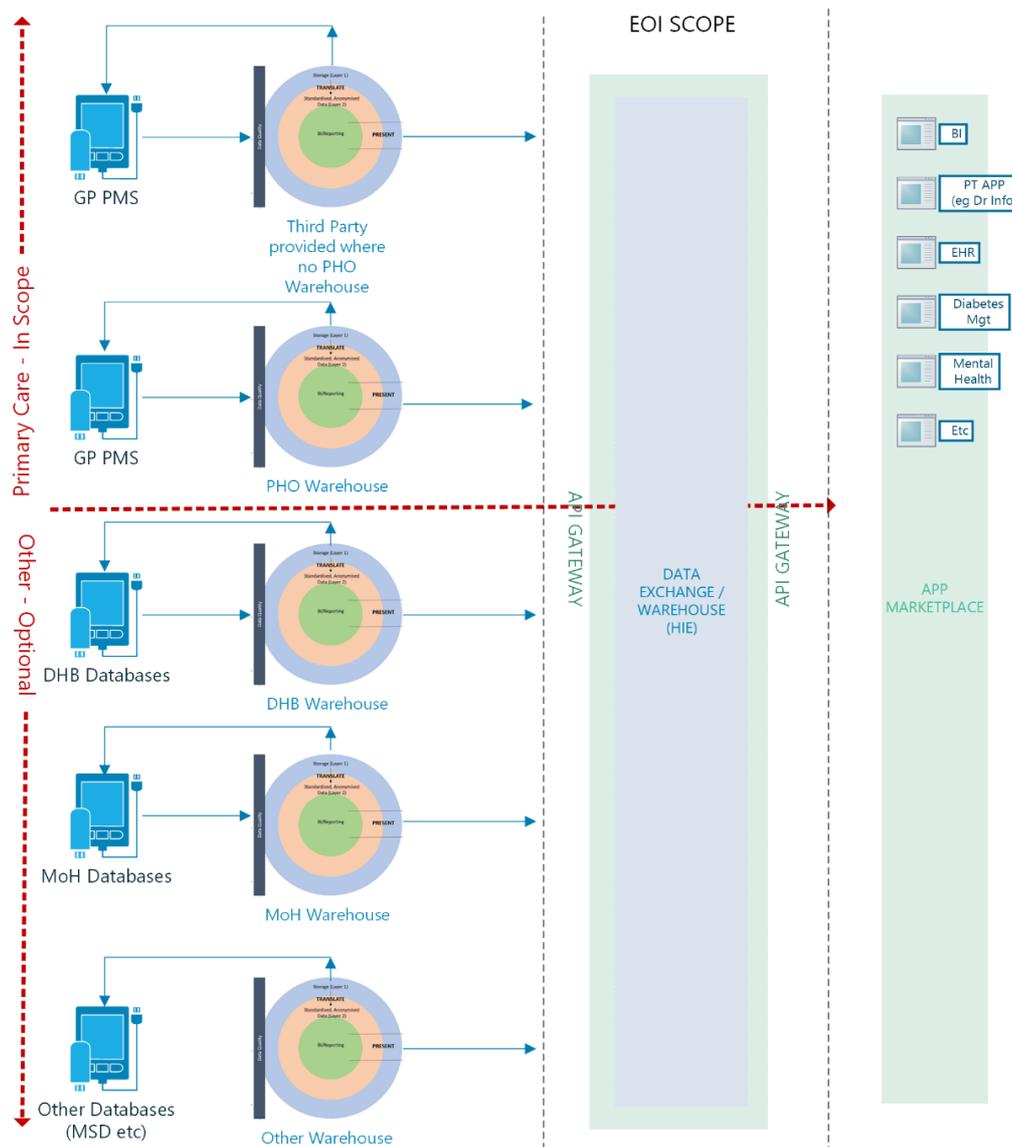
A23: Do you prefer to provide and support an architecture using this distributed approach?

A24: if your answer is yes, describe, in detail, the scope and approach to your proposed solution.

A25: Describe any benefits you see in this approach over the more traditional central enterprise data warehouse.

A26: Describe any disadvantages you see in this approach over the more traditional central enterprise data warehouse.

A27: What pre- or co-requisites would you require to implement a solution using this distributed model?

4.3   Reporting and Output Requirements

This layer of the data warehouse is the clinical and business end of the spectrum compared to the aforementioned technical layers. Respondents may elect to respond to the questions relating to the technical layers of the data warehouse, or (this) the reporting layer or both.

The layers of a data warehouse at a conceptual level include:

Extract → transport → Storage → Translation → Data Presentation/ BI

The last layer "Data presentation and Business Intelligence" covers a broad spectrum of choices from:

1. Providing a minimum set of standard and static reports that represent routine reporting (e.g. compliance reporting, system level measures);

2. Providing data for (authorised) 3rd parties to analyse/mine and report;

3. A basic data view enabling clinicians to view various permutations of their practices data and their specific cohort of patients.

4. A population view enabling analysts to view population based data.

5. Detailed and rich analysis of the data and presentation of dynamic reporting and analysis functions; or

6. A mix of some or all of these.

Reports cover a range of types and a horizon of maturity which has been described in various documents and by various stakeholders as:

		Maturity curve			
		Descriptive	Predictive	Prescriptive	Comparative
Type	Practice benchmarking				
	Patient List				
	Clinical Performance				
	System Level Measures				

- **Descriptive analytics** (basic analytics & reporting of what has happened).
- **Predictive analytics** (data is used to predict what will happen, e.g. ProCare Health predicting likelihood of acute hospital admissions for individuals).

- **Prescriptive analytics** (provide recommendations to GPs for specific patient-centred care).
- **Comparative analytics** (where groups can benchmark against each other to understand variance, and promote learning and improvement) (similar to Health Round Table).

The end-game is to provide enough data to enable a joined-up primary care, social services and secondary care spread and depth that, in addition to providing static compliance reporting and supporting local practice decisions, can be mined to create a picture of the populations, individuals, risks, patterns and to model hypotheses on.

However, this needs to be tempered with the balance between short term achievability and the long-term journey. The argument that we already have or are already collecting this information stands scrutiny only at a basic level – as there are different methods of collecting and consolidating data and, in some cases, differing interpretations of the data.

Common and static compliance reporting

By taking the national System Level Measures (SLMs) as an initial goal, it reduces the (duplication) burden of reporting, provides a common focal point based on common definition and common structure of nationally reported data (i.e. practices are 'comfortable' with this data being presented for national scrutiny). The aim is to create something useful for clinicians and the coal face practice delivery.

Regardless of how the data is used or to what level it is aggregated, its unit-level (atomic level) source is through clinical contact with a patient. The implementation of the NPCDS needs to keep that in mind and be respectful of that relationship and provide value back to that level of interaction.

Provide initial (basic) level of patient cohort/population analysis

While the initial reporting may focus on System Level Measures and a basic list of reports, it is useful to consider how we can mine the data to determine any patterns and trends in terms of population analysis. What cohorts and patterns can we examine within the limitations of the initial set of data that will provide some valuable insights?

General guideline regarding equity

It is important that variation in equity can be measured.

As a rule, all reporting or data views and extracts provided by the NPCDS should be able to be filtered or reported by ethnicity and deprivation (in addition to any other filters made available).

Example list of reports

The following list has been provided by way of example of reporting that will initially be useful from the NPCDS (see appendix for report layout examples). It is hoped that the NPCDS would provide greater visibility on a range of other conditions over time.

1. Patient List – Alcohol brief advice – missing patients
2. (Annual standardised) ASH rate admissions – practice benchmark within PCN
3. ASH admission patient list by practice and principal diagnosis
4. ASH analysis by age band and as a percentage of practice population
5. Patient list – CVD risk assessment – list of patients with CVRA and value and latest statin prescription date
6. Patient List – Patients outside of clinical guidelines for Diabetes (Retinal screening, CVRA, prescribing)
7. Practice benchmarking – Patient Diabetes Report

8. Patient List – All ethnicities, patient in cohort (covering risk factors)
9. Population summary overview (practice to PCN comparison) – age/sex risk, conditions per patient
10. Quality indicator report – practice summary (dimensions: capacity/capability, patient experience, health and equity for all populations, best value for public health system resources (ASH and ED admissions)
11. Practice benchmarking – smoking report
12. Ratio of workforce
13. Doctor/nurse consults
14. Prescribing behaviour

This list incorporates both primary and secondary health information. Noting that the data needs to be identifiable by each DHB and PCN and showing total, Maori, Non-Maori, Pacific Island and Asian ethnicity categories.

The list below incorporates the System Level Measures.

Primary
• CVD Risk assessments
• Smoking Brief Advice and Cessation support given
• Childhood Immunisation at 8 months
• Cervical screenings – eligible women
• Breast Screenings – eligible women
• Flu vaccination 65 year plus
• PCN Enrolment
• Number of Patients who have attended ED
• Patients who have been admitted to hospital acutely
• Current inpatients
• Patients with pending elective admissions in Secondary Health
• Patients with pending outpatients appointments by speciality
• Patients receiving on-going support from community allied health and nursing services;
• Ambulatory sensitive hospitalisations ASH admissions aged 0 to 4 years by condition
• Dental ASH admissions aged 0 to 4 years
• Serious Skin Infections presentations to ED and IPD admissions – include age groups; and above categories
• Patient Portal access
• PES Patient participation
• Patients referred to, and attending, smoking cessation services both primary and secondary health sectors
• Patients with COPD - Numbers of admissions and length of stay in both primary and secondary health sectors
• Diabetes patients – include type and by primary and secondary health sectors

Secondary
• Numbers of smokers admitted into Hospital and either referred to Quitline, Regional Stop Smoking Service or offered smoking cessation support

- Elderly admissions for end of life care within Secondary Care
- DNA rates for Maternity specialist appointments
- Decline rates for surgical elective specialities – include speciality
- Numbers of ECPs dispensed within Primary and Secondary Health sectors
- Numbers of LARCs used in both Primary and Secondary Health sectors
- Number of smoke free households at six weeks post-partum
- Preschool children enrolled with the dental service
- New-born babies enrolled with the dental service
- Pregnant women enrolled with a LMC in first trimester of pregnancy
- Pregnant women accepting smoking cessation support

Appendix D provides examples of reports.

Which reports to include in which phase of the rollout?

The sector does not want a long lead-time for delivery of the first round of reports. Equally, the reports need to be of good quality. The respondents are asked to consider what they would be able to deliver within the first six months of the system being commissioned, then what other reports could be phased in within 6-month cycles thereafter.

Please include the following in your response:

1. Provide an indicative timeframe for release cycles (e.g. 6 monthly) stating which reports you believe make the most sense to provide in what release – and why.
2. Highlight what other reporting you believe to be achievable and useful from the data service in the broader context (i.e. do not be constrained by the list presented above, but rather, reflect on the scope and desired objectives of the NPCDS).

4.3.1 Data Presentation, Reporting and Business Intelligence

NB - All reporting is to provide filtering by key elements of demographics, specifically including ethnicity and deprivation.

There should be choice by the participants and users of the data warehouse as to whether to use this as the sole or main source of data and analysis, or, depending on their level of in-house or contracted capability, whether to use data extracts or views of information within the warehouse for their own analysis.

There should be a basic level of business intelligence functionality enabled for those PCNs and end users who do not have the capability in-house. Access to static reports and basic slice/dice queries should be via a common front-end portal that has a robust security, access and auditing capability underpinned by role, (geographic and provider) context and data access matrix.

Rather than pre-supposing the full list or phasing of what reports should be made available via the data warehouse and when, the EoI presents a sample list of reports and the EoI respondents are asked to provide some indicative phasing of reports for quarterly or 6-monthly release cycles.

This will need to be reconciled back to (available) data and data sources and one of the rate-limiting factors will be the common (data) definition/standard and corresponding access to and extracts of data to achieve the reports.

Third parties who respond to the reporting/BI layer of the EoI only will need to provide the list of reports, phasing, corresponding data requirements and their rationale as to the sequencing and assumptions on the availability of data.

Similar to the questions around the data model, the reporting component of the EoI is designed to be broad and inclusive and allow flexibility for respondents in addition to the list of reports envisaged.

Pre- or co-requisites – Reporting layer	
Item	**Narrative**
Develop an access matrix.	Develop a security and data access matrix based on role and context (geographic location, role [e.g. practitioner, analyst, manager], practice, DHB of domicile).
Agree secure mechanism for authentication and front end (portal) for access to reports and data.	Recommend/land-on best option for login/authentication and auditing.
Agree audit reporting for access of data.	Recommend/land-on best option for auditing and exception reporting-reviewing of access.
Scope out the long-list of reports.	Tie this back to a minimum dataset required.
Develop a data dictionary/specification for data elements, definitions and sources.	Build the data dictionary/minimum dataset based on identified reports and phasing and tie this into the data extract specifications.

Questions:

R1: Looking at the principles of the data service and the scope and desired objectives as outlined in the front sections of this EoI, which reports would you target providing in a first wave of reports from the solution (i.e. within the first 6 months of establishing the service)?

R2: How would you sequence the provision of the reports outlined in this section (i.e. over how many releases and which reports in which releases)?

R3: For each of the reports, what data sources would you need to ensure you have flowing into the data warehouse?

R4: In the broader context what other reporting do you believe to be achievable and useful from the data service (i.e. reflecting on the scope and desired objectives of the NPDCS)?

R5: Which data would you need flowing into the data warehouse to enable these additional reports?

R6: How would you present data back to end users (at the clinical coal-face i.e. patient identifiable) to be of most use for the "slice and dice" analysis?

R7: How would you present data back to end users (of anonymised and aggregate information) to be of most use for the "slice and dice" analysis?

R8: What 3rd party tools do you propose for presentation and use of data and why?

R9: What 3rd party tools do you propose for presentation and use of reports and why?

R10: How do you propose to make data available for other 3rd party providers, vendors and toolsets to be able to utilise the data (e.g. consider those PCNs and practices that already have toolsets they use)?

R11: From your perspective, what's missing from the list of reports and should be added and why?

R12: Describe how you would achieve driving data up the value chain (i.e. using the paradigm of Descriptive, Predictive, Prescriptive and Comparative as outlined at the beginning of this section).

5. Additional Requirements

5.1 Privacy, Security and Audit

Developing trust is a critical success factor of the NPCDS. There are a range of factors to consider in designing and providing the solution which include – national policy settings, data sharing protocols, audit and review of data access and use, role based access and strict controls to ensure the confidentiality of data, to name a few.

It is expected that the solution will embed the ethos of security, privacy and control into the solution rather than regarding it as an adjunct or overhead consideration.

Questions:

P1: How do you propose to build and maintain trust in the security and data privacy of the system with the end users?

P2: What specific audit and security controls do you propose for each layer of the solution?

P3: What audit logs do you propose to provide and how can these be accessed?

P4: Describe any privacy impact assessment you have been engaged in and the results and learning from this?

P5: What access control mechanism does your proposed solution have – for access to reports and for access to data?

P6: What accreditation do you have already for any data you are managing on behalf of clients?

P7: Describe how you comply with the relevant legislation regarding data security and access (e.g. the 2015 Health Information Security Framework)?

P8: Describe how you would honour the principles of Maori Data Sovereignty as outlined in Te Mana Rauranga.

5.2 Implementation

Any vendor/partner chosen as a result of the tender will need to work with and alongside the sector in helping co-define, co-develop and ultimately deliver the solution. Any corresponding planning will need to take this co-production approach.

In the meantime, we would like to understand your ideas and views about how the solution (based on the requirements outlined in this document) can best be implemented.

Questions:

I1: Provide an outline plan of phasing and timeline for the proposed implementation

I2: Describe the implementation approach including technical, architectural, design and change management elements of the project.

I3: Outline what you perceive to be the key risks to the project and corresponding mitigation strategies.

I4: What is your suggested project structure for effective implementation?

I5: What is your testing strategy to ensure the design is as per user requirements and that the outputs meet these requirements?

I6: Provide 2 references of recent and relevant implementation experience.
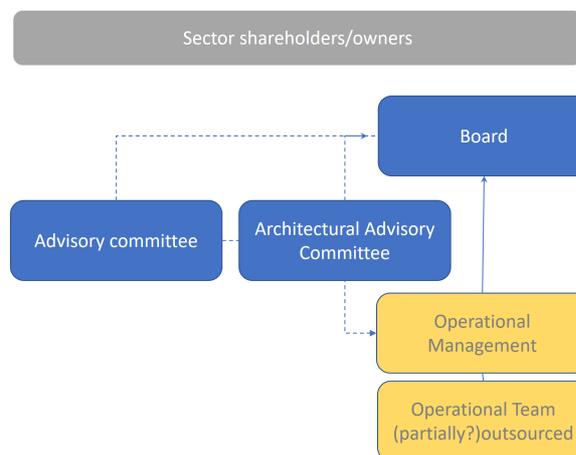
I7: What resources would you commit to the project and for what timeframe (roles, named key resource and estimated effort and estimated duration).

I8: Provide a clear breakdown of the corresponding budget and cost based on the model you have outlined in this section, including day rates for the various roles.

5.3 Operational management

The proposed solution will most likely be operated via an independent and sector owned entity working in partnership with one or more 3rd parties to provide the solution.

A general model may look similar to the one outlined below:

Sector shareholders/owners

Board

Advisory committee

Architectural Advisory Committee

Operational Management

Operational Team (partially?)outsourced

Questions:

O1: From your responses to the EoI, what resources do you recommend providing to support the effective operation of the NPCDS and why?

O2: What resources (and what FTE) do you recommend the NPCDS operational vehicle maintain in house and why?

O3: How do you propose you could work most effectively with a blended team that includes sector resources and your own resources?

O4: How will you guarantee continuity of resource and service to the operation?

O5: What resources do you propose should be applied to working with the sector on getting the most out of the data and the system?

O6: What existing references can you provide of an equivalent service you are currently providing?

O7: What up-time can you commit to for the system and the availability of data and reporting?

5.4 Commercials

Commercial terms will need to address the:

1. Design and implementation of the solution;
2. Operation and support of the solution; and
3. Any licensing for 3rd party products, tools and software.

The solution will be a partnership between the sector and the successful bidder, however the design also needs to consider review checkpoints and contract review/re-tender options. As such, the solution needs to survive the effective possibility of transition between providers.

Questions:

C1: From the response you have provided, give high level estimates and associated assumptions for timeframes, resources and costs for implementing the solution to a phase 1 delivery (first round of reports).

C2: From the response you have provided, give high level estimates and associated assumptions for timeframes, resources and costs for implementing future waves of reporting.

C3: From the response you have provided, give high level estimates and associated assumptions for resources and costs for maintaining the operation of the system.

C4: Describe how you would ensure continuity of toolset, documentation and operation in the event of a change of supplier.

C5: Describe any pricing or risk share arrangement you believe may be of use to both you and the sector in providing the most cost effective and quality service.

C6: How can we best and fairly gauge your performance in implementing the system?

C7: How can we best and fairly gauge your performance in maintaining and delivering the operational system?

C8: What KPIs do you propose for the overall operation and which of these do you propose you should be measured on?

5.5 Risks

Question:

R1: What do you see as the main risks to the development and implementation of the NPCDS? How might you mitigate these risks?

5.6 Assumptions

Inevitably any EoI response will be underpinned by many assumptions. So there are no surprises, we would like to understand the basis of any underlying assumptions in your EoI response.

Questions:

AS1: Please provide a comprehensive list of any assumptions that underpin your Reponses. This includes any assumptions about what is in and out of scope and what you need from various parties in the sector to make this a successful and sustainable system.

6. EoI Evaluation Criteria

All respondents will be measured against the same Evaluation Criteria.

The Evaluation Criteria that will be used to evaluate this EoI are:

1. Capability and capacity to co-design and produce the service (i.e. establishment); *
2. Capability and capacity to provide the operational services (i.e. operation); *
3. Timeliness of provision and iterative improvement to the service;
4. Ability to (and demonstrated history of) build(ing) an effective and trusted working relationship with the sector;
5. Best practice including the areas of architecture, security, controls and auditing;
6. The cost of the establishment and operation of the service;
7. Flexibility and innovation; and
8. The governance and custodianship over the service.

*Would be omitted if this requirement is not addressed by the submission.

The Commissioners retain the right to change or adapt these assessment criteria before commencing the evaluation process. In this instance vendors will be informed of any changes made.

A wide range of supporting definitions will be used by evaluators when considering vendor performance against the Evaluation Criteria. These include, but are not limited to:

1. Their capability and capacity to engage with the relevant stakeholders in the sector including Primary Care and other agencies where guided including (but not limited to) the Ministry of Health, DHBs;
2. Their knowledge and understanding of primary health care related information;
3. Experience in data warehouse design and implementation in primary care;
4. Their proven approach and capability for co-design of a suitable solution (secure, trusted, cost effective, quality, flexible, responsive) that meets the goals of the primary care data service;
5. The robustness and quality of the technical solution;
6. Demonstrated understanding and alignment with the principles as outlined by the commissioners of the solution;
7. Adaptability and flexibility of the proposed solution to develop and mature over time (i.e. a learning system);
8. The ability to work as a long-term partner in a formal collaboration model within the whole of sector on a national basis;
9. Proven experience in the field of driving data up the value chain to support more effective decision making;
10. Cost profile of the establishment and ongoing operation;
11. Ability to effectively implement the solution;
12. Ability to effectively work as part of a team (i.e. subcontracted) to operate the solution;
13. Demonstrable proof of hosting and providing relevant data custodianship that safeguards the privacy and disclosure of data; and
14. Demonstrated knowledge and understanding of current standards and how they relate to primary care information and how these standards will be adopted as part of the solution.

Appendices

A: The Commissioners

Person	Organisation
Vince Barry	Pegasus Health
Steve Boomert	ProCare
Chiquita Hansen	Central PCN
Martin Hefford	Compass Health
John Macaskill Smith	Pinacle Health
Richard Medlicott	RNZCGP
Andrew Miller	GP, Whangerei
Helmut Modlik	Patients First
Michelle Murray	Eastern Bay of Plenty PCN
Fiona Thomson	GPNZ

B: MoH Guidelines for disclosure & use of NHI level health information

Refer to: NPCDS_EOI_Appendix B.pdf

C: Pegasus/Canterbury model outline (HealthSafe)

Refer to: NPCDS_EOI_Appendix C.pdf

D: Report examples

Refer to: NPCDS_EOI_Appendix D.pdf

E: Glossary

Term / Abbreviation	Definition
Primary Care	Professional health care provided in the community, usually from a general practitioner (GP), practice nurse, pharmacist or other health professional working within a general practice[1]. A broad range of health services are covered by primary care, including diagnosis and treatment, health education, counselling, disease prevention and screening.[1]
PCN	Primary Care Networks, also called Primary Health Organisations (PHOs), provide primary health services either directly or through their provider members (General Practices) to people who are enrolled. There are 32 in New Zealand, and they are funded by District Health Boards (DHBs).[1]
Primary interventions	Clinical interventions delivered in the primary care setting aimed at reducing risks or threats to health.
National Collections	The Ministry of Health provides health information to support decision making in policy, development and at the point of care through its National Collections.[1]
DHB	District Health Boards (DHBs) are responsible for providing or funding the provision of health services in their district. There are 20 DHBs in New Zealand.[1]
RNZCGP	The Royal New Zealand College of GPs (RNZCGP, the College) is a professional body and post graduate educational institute for general

	practitioners. The College strives to ensure a high standard of care in general practices across New Zealand by setting the standard for quality systems.[2]
HQSC	The Health Quality & Safety Commission (HQSC) works with clinicians, providers and consumers to improve health and disability support services. HQSC's programme areas include medication safety, infection prevention and control, adverse events, reducing harm from falls, health quality evaluation, consumer engagement, reducing perioperative harm and mortality review.[3]
PMS	Practice Management System software is a category of healthcare software that deals with the day-to-day operations of a medical practice. Often allows users to capture patient demographics, schedule appointments, perform billing tasks and generate reports.
Secondary Care	A second tier of the health system, in which patients form primary care are referred to specialists (often in hospitals) for treatment.
NMDS	The National Minimum Data Set (NDMS) is a national collection of public and private hospital discharge information, including coded clinical data for inpatients and day patients. It is used by the Ministry of Health, DHBs, PCNs, clinicians, researchers and members of the public for statistical information, clinical benchmarking, and planning and funding.[1]
NHI	The National Health Index (NHI) number is a unique identifier that is assigned to every person who uses health and disability support services in New Zealand. A person's NHI number is stored along with their demographic details. [1]

SLMs	System Level Measures are high-level aspirational goals for the health system that align with the five strategic themes of the Health Strategy and other national strategic priorities. The SLMs have a focus on children, youth and vulnerable populations and are part of the DHB annual planning process.
	They include:
	  – Ambulatory Sensitive Hospitalisation (ASH) rates for 0-4 year olds (i.e. keeping children out of hospital)
	  – Acute hospital bed days per capita (i.e. using health resources effectively)
	  – Patient experience of care (i.e. person-centred care)
	  – Amenable mortality rates (i.e. prevention and early detection)
	  – Proportion of babies who live in a smoke-free household at six weeks post-natal (i.e. a health start)
	  – Youth SLM (i.e. youth are healthy, safe and supported) [1]

Alcohol brief advice	A screening and intervention tool used in relation to alcohol.
ASH	Ambulatory Sensitive Hospitalisations (ASH) are mostly acute admissions that are considered potentially reducible through prophylactic or therapeutic interventions deliverable in a primary care setting.[3]
CVD risk assessment	Cardiovascular disease risk assessment.
PES Patient Participation	Patient Experience Survey (PES), an online survey developed by the Ministry of Health and the HQSC to measure patient experience of primary care, focused on the coordination and integration of care.[3]

COPD	Chronic Obstructive Pulmonary Disease.
DNA rates	Did Not Attend rates (e.g. for GP clinic appointments).
ECPs	Extended Care Paramedic (ECP) service – aimed at reducing hospital emergency department attendances by treating more patients in the community. [4]
LARCs	Long Acting Reversible Contraceptives.
LMC	Lead Maternity Carer.

[1] health.govt.nz

[2] rnzcgp.org.nz

[3] hqsc.govt.nz

[4] wfa.org.nz