

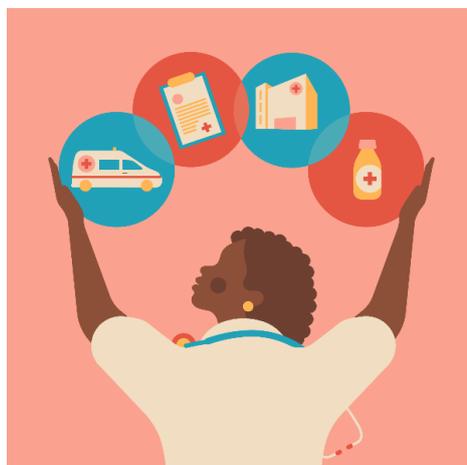
Lumos Monitoring and Evaluation Framework

September 2021



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Executive summary

NSW Health is shifting towards Value Based Healthcare as a long-term strategy, with success measured by outcomes and experiences that matter to patients, communities, clinicians, and the system overall. This relies on routine data about the whole patient journey, and the Lumos program plays a central role in providing this unique data.

The Lumos Monitoring and Evaluation Framework focuses on monitoring the establishment of the Lumos program. Findings from the evaluation are essential for understanding the effectiveness of the program and its role in delivering Value Based Healthcare, and informing continuous improvement in the Lumos program. Findings also inform an annual program evaluation report.

The Framework consists of six key elements:

1. **Program aims**, with five program aims identified that are crucial to achieving the program ambition
2. **Overarching evaluation questions** which capture the program ambition, aims and measurable milestones
3. **Evaluation domains**, which each identify detailed measurable objectives and milestones. The evaluation domains are engagement, technical solutions, analytics and reporting, and delivery of value
4. **Indicators and milestones**, with annual interim milestones identified and measured through a variety of indicators
5. **Data capture**, with a range of data sources used including routine program data, surveys, and stakeholder interviews
6. **Timeline**, which maps the annually evaluation for three years.

The Lumos Monitoring and Evaluation Framework is formally endorsed by Systems Integration Monitoring and Evaluation (SIME) Manager James Linden.

For further information about the Lumos program, please visit www.health.nsw.gov.au/lumos

To subscribe to our program newsletter, contact us at Lumos@health.nsw.gov.au



Context and purpose

Context

With the growth and ageing of Australia's population and rising rates of some chronic conditions, many people require more intensive management of complex health needs. To meet these changing needs, the challenge for the health system is to provide integrated and value-based care across different settings.

However, accessing health information is complicated in Australia because it is collected in different care settings as well as by private organisations. Therefore, 'whole of system' information is not available in one place. Because the data remains separated, the view of the patient journey – the care that patients receive and the outcomes that they experience – is fragmented.

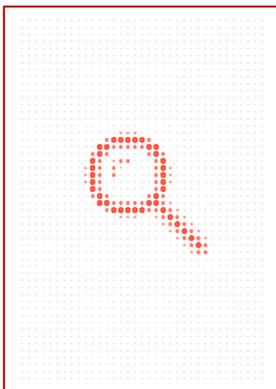
Value Based Healthcare in NSW

NSW Health is shifting towards Value Based Healthcare as a long-term strategy. Value Based Healthcare focuses on using all health resources, across settings, more effectively and efficiently to deliver value.¹ It concentrates on ensuring sustainability of the system to meet the ongoing challenges while recognising that focusing only on efficiency is insufficient; the care delivered must achieve the outcomes that matter to patients and carers.

To truly achieve and sustain great healthcare, each aspect of the quadruple aim (Figure 1) must be addressed throughout the patient journey. The quadruple aim consists of the patient and carer experience, population health, sustainable cost, and the clinician experience. These four elements work together and significantly influence health outcomes across populations.



Figure 1 - the quadruple aim for Value Based Healthcare



Four state-wide programs are designed to support the ambition of value-based healthcare throughout NSW: Leading Better Value Care, Integrated Care, Commissioning for Better Value, and Collaborative Commissioning. Effective measurement in these programs is crucial to drive success across the quadruple aim, to monitor and refine program quality, and to measure ultimate impact on value. Previously, success was measured by volume and costs, however this is shifting towards measuring outcomes and experiences that matter to patients, communities, clinicians, and the system overall. This relies on routine data about the whole patient journey. The value of Lumos is providing this unique data, giving Lumos a central role in supporting measurement of Value Based Healthcare.

¹ NSW Health 2020, *Value based healthcare in NSW*, viewed 28 July 2021 , <https://www.health.nsw.gov.au/Value/Pages/value-based-healthcare-in-nsw.aspx>



Program objectives

By bringing together 'whole of system' information, Lumos provides a more comprehensive view of the patient journey across the continuum of care. The program aims to create an enduring data asset that is routinely updated, with actionable insights provided back to service providers. The data asset is designed to help identify the best places and times to intervene or influence health care practices to improve patient outcomes, patient experiences, and the efficiency of health services.

The ambition of the Lumos program is to deliver a data asset to underpin state-wide priority programs and system-wide enablers that accelerate Value Based Healthcare, and to create a



reliable evidence base to inform decision making and policy across the system to benefit patients and the broader community. To achieve this ambition, the Lumos program aims to link data from more than 500 general practices across all 10 Primary Health Networks (PHNs) by 2023, inclusive of data sets across patient journeys. This will generate insights on up to 4 million patients in the NSW health system, providing invaluable insights to inform and underpin the transformation of patient care in NSW.

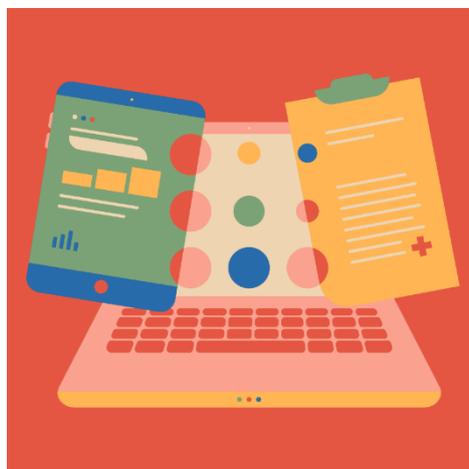
Purpose of this document

This Lumos Monitoring and Evaluation Framework describes the program aims, evaluation questions, evaluation domains, implementation approach and data sources for assessing the impact of Lumos, with details located in the appendices.

The Lumos program began as a pilot project in 2016 then transitioned to scale-up in early 2020. This framework spans the Program scale-up which is funded by the Commonwealth Government under the Health Innovation Fund (HIF) for 2019 - 2022, and its establishment in scaled form as a proxy for business-as-usual through further HIF funding over 2022 – 2023.

Monitoring and evaluation of the Lumos program is regularly performed to support the establishment of an enduring high-value asset. It is essential for understanding the effectiveness of the program in line with our program objectives and informs continuous improvement.

Findings will be reported in annual evaluation reports.



Monitoring and evaluation framework overview

Framework focus

This framework focuses on monitoring the establishment of the Lumos program. This program evaluation is undertaken by the Lumos project team as part of Plan-Do-Study-Act Cycles of continuous improvement.² Evolution of the program and the asset that it creates relies on systematic measurement of program performance to inform refinements of approach based on feedback and outcomes.

Lumos program logic

A program logic for Lumos was developed at program inception to describe the expected causal links between program inputs, activities, outputs, impacts and ultimate outcomes (see Figure 2 below, with full version at [Appendix 1](#)). By translating the objectives of the program into measurable milestones, it ensures the program activities and measurement of performance align with the overall program ambition.

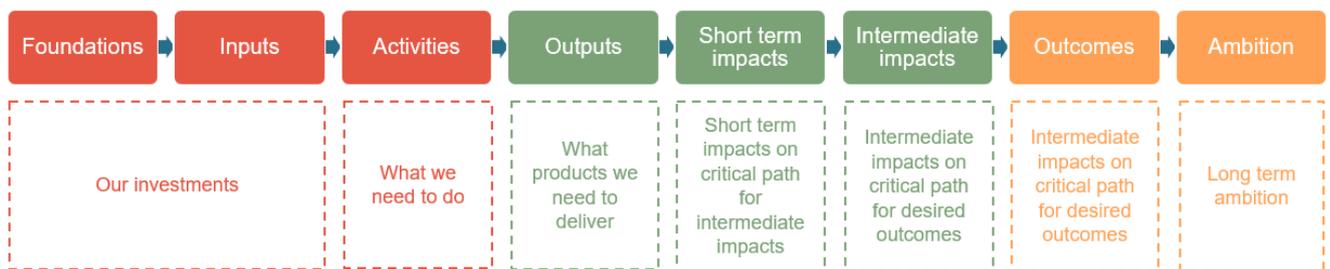
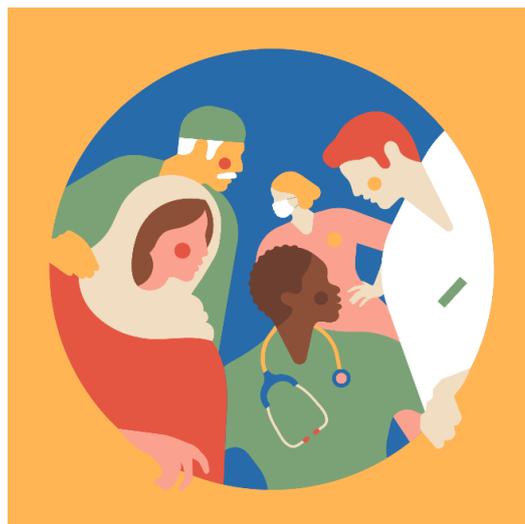


Figure 2 - overview of the Lumos program logic

This program logic is used throughout the project cycle to support a shared understanding of how Lumos is proposed to work, what it is expected to achieve, key evaluation questions and the information required to address those questions. It is a central reference point for informing the evaluation plan ([Appendix 2](#)).

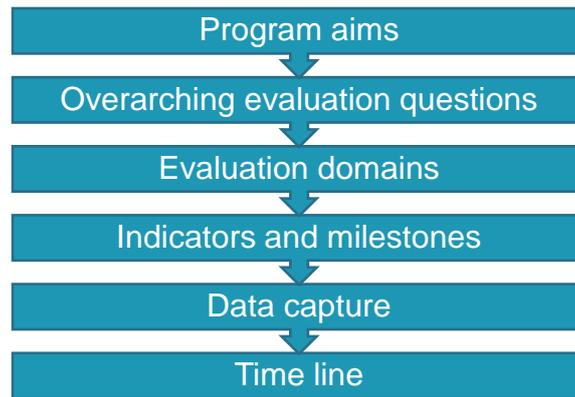


² Clinical Excellence Commission 2020, *Model for Improvement and PDSA Cycles*, viewed 28 July 2021, <https://www.cec.health.nsw.gov.au/Quality-Improvement-Academy/quality-improvement-tools/model-for-improvement-and-pdsa-cycles>.



The framework

The Lumos monitoring and evaluation framework consists of 6 key elements:



These are detailed below.

Program aims

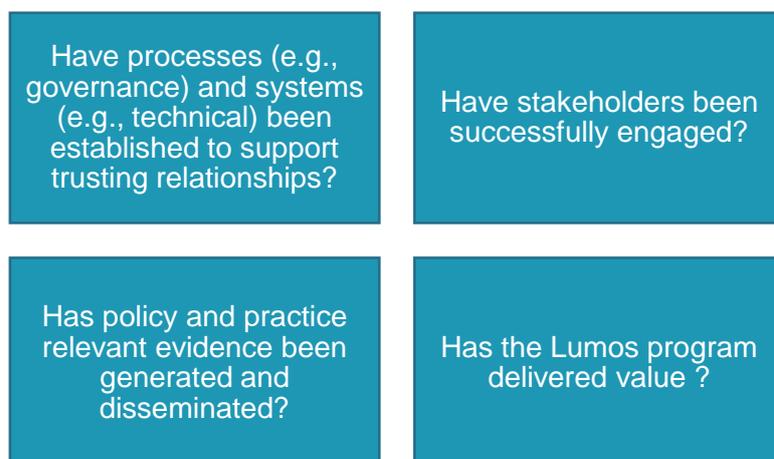
Development of the Monitoring and Evaluation Framework commenced with identifying the key aims that are central to achieving the ambitious Lumos vision. Each aim plays a critical role in the success of the program. The five program aims are:

- Strong stakeholder endorsement and partner participation;
- Successful technical proof of concept;
- Creation of an evidence base that is relevant, accessible, policy- and practice-relevant;
- A foundation to support delivery of Value Based Healthcare in NSW; and
- An impact beyond NSW to other states in Australia.

These aims inform the overarching evaluation questions below.

Overarching evaluation questions

Four overarching evaluation questions capture the program ambition and aims, and the measurable milestones described in the program logic ([Appendix 1](#)). These questions guide the program evaluation and are:



Evaluation domains

Evaluation domains provide the foundation for translation of high level and overarching evaluation questions into detailed measurable objectives and milestones. The overarching questions suggest four domains (Figure 3), each with its own ultimate objectives and outcomes.

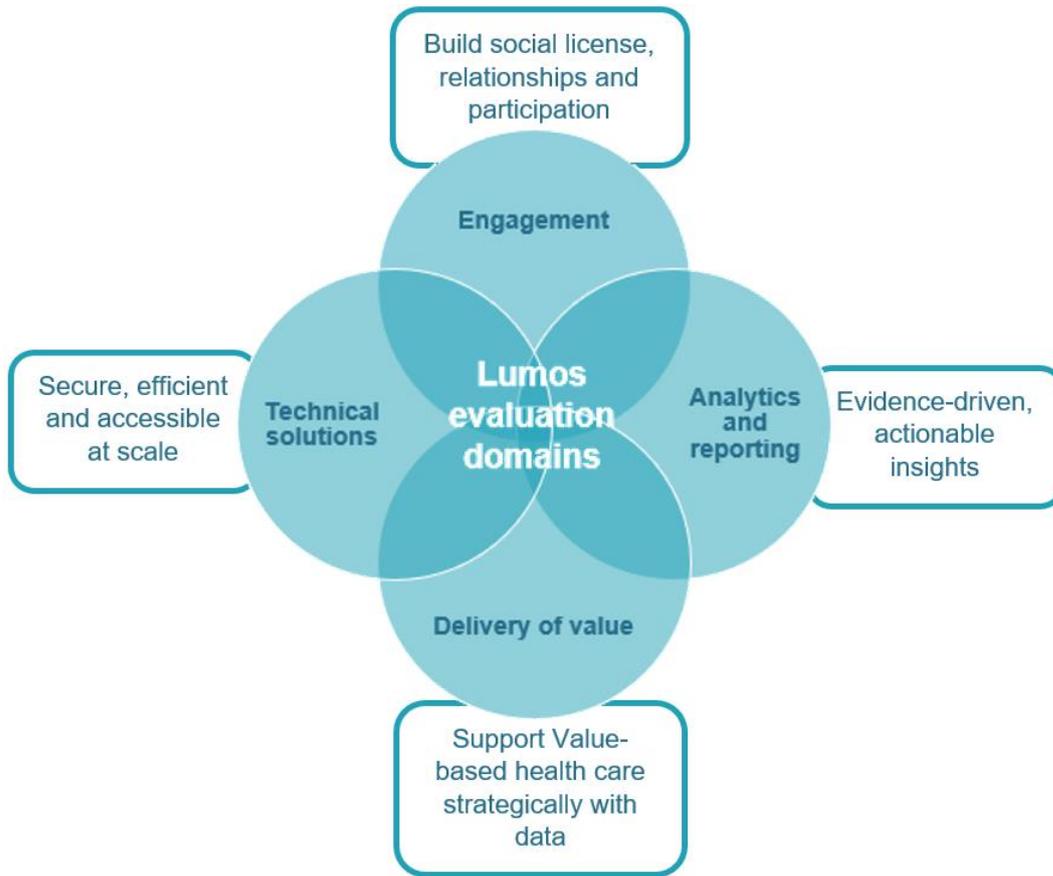


Figure 3 - the four domains of the Lumos Monitoring and Evaluation Framework

Table 1 below outlines, at a high level, the four domains, their specific objectives and desired outcome:

Domain	Objectives	Outcome
Engagement	<ul style="list-style-type: none"> - Trusting, committed relationships across a comprehensive range of stakeholders. - Strong relationship capital with key stakeholders. - High rates of participation. 	Strong stakeholder endorsement and partner participation.
Technical solutions	<ul style="list-style-type: none"> - Data transfer, storage and access that is secure, efficient, accurate and scaled. 	Successful proof of concept.
Analytics and reporting	<ul style="list-style-type: none"> - Evidence generated and disseminated. - Important insights revealed/communicated. - Key partners interact with and use the data. 	Creation of an evidence base that is relevant to policy and practice and is accessible and used for continuous improvement.



Delivery of Value	<ul style="list-style-type: none"> - Key insights that support system reform towards Value Based Healthcare are delivered to policy makers and decision makers. - Insights are applied to support the transition from volume to Value Based Healthcare on a large scale. 	Delivery of support to Value Based Healthcare is demonstrated.
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Table 1 - the four domains of the Lumos Monitoring and Evaluation Framework

The four domains are detailed below.

Domain 1: Engagement

Lumos is the first of its kind in Australia, and the vision of supporting integrated healthcare relies heavily on the co-operation and support of a broad range of stakeholders. For example, Primary Health Networks are crucial in facilitating General Practice participation which builds the data asset. Meaningful consumer engagement builds public trust and social license which affects the public image of the program. Without effective collaboration with software vendors, data could not be extracted or linked and therefore insights could not be developed. If strong relationship capital did not exist with healthcare providers and service planners, Lumos data would not be put into action and benefits could not be realised. Therefore, the Lumos program could not succeed without maintaining strong stakeholder relationships across many different program elements.



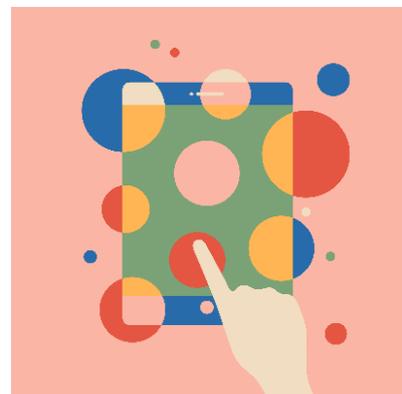
The diverse group of stakeholders are mapped to a framework that recognises their influence and the level of commitment required of them. It is acknowledged that, to some extent the stakeholder matrix is dynamic; as the program evolves, relationships will also evolve. The matrix is therefore reviewed annually as part of the program monitoring and evaluation process. Further information on the stakeholders and how their experience with the Lumos program is evaluated is in [Appendix 3](#).

Given the large scale and transformational nature of the Lumos program, strong governance structures that reflect collaboration are crucial to successful engagement. Robust governance builds trust with key stakeholders and satisfies community, ethical and legal requirements. Further information on Lumos governance structures is in [Appendix 4](#).

Domain 2: Technical solutions

Lumos is pioneering in Australia in terms of the size and type of data linkage, and the ability for non-NSW Health employees to access data from NSW Health services. Achieving this has required extensive technological innovations that directly impact program success and sustainability.

The technical solutions of the program must achieve exemplary data security while ensuring ease of participation in contributing data and ease of access to appropriately authorised users. These factors influence practice participation and thereby population coverage and play a key role in determining the value of the data asset and the trust placed in the program.



Given the novel nature of numerous technical solutions embedded in Lumos and the significant impact on program outcomes, technical solutions are a key driver of program success.



Lumos

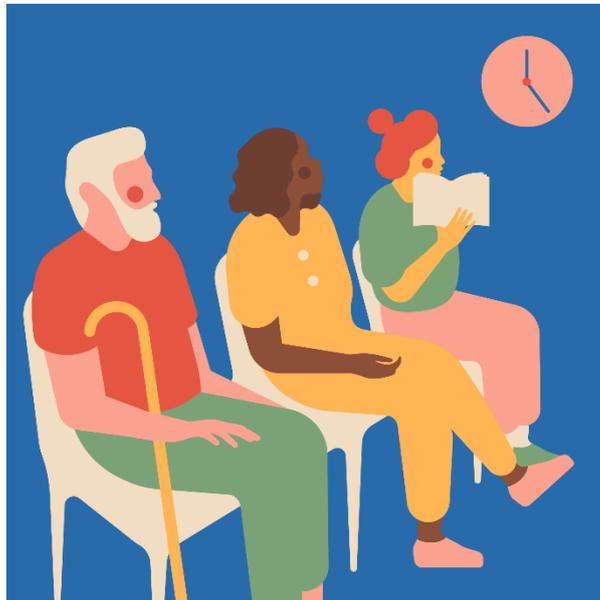
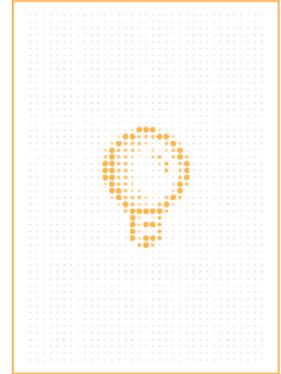
Domain 3: Analytics and reporting



The Lumos data asset aims to support achievement of the quadruple aims for Value Based Healthcare. For the Lumos data asset to support better value care, reporting and analytics must provide relevant, reliable and actionable insights that can be used for continuous improvement. There must also be opportunities to interact with the data at practice and regional levels, to drive local improvement initiatives. This also supports engagement with the general practices on whom the data asset ultimately depends.

Domain 4: Delivery of value

Rather than directly delivering a model of care, Lumos supports the design, delivery and evaluation of models that aim to improve achievement of Value Based Healthcare. Therefore, the value of Lumos is in the program's ability to influence change at a policy and system level, including informing improvements to existing state-wide Value Based Healthcare programs. To achieve this, the program must provide unique insights that are policy-ready and decision-making-ready at a system level. These insights must be well articulated, communicated and socialised if they are to be influential. Measurement of the value delivered by the Lumos data asset has been designed to identify potential policy impact as a key outcome.



Implementation Approach

Overview

Implementation of the monitoring and evaluation framework is comprised of three main components: the articulation of interim and ultimate milestones for each of the domains, indicators of achievement against the milestones, and a data collection plan to capture the indicators (Figure 4).



Figure 4 – implementation approach for the Lumos Monitoring and Evaluation Framework

Milestones and indicators

To assess progressive achievement of the program against its objectives, the Lumos Monitoring and Evaluation Framework is structured according to annual interim milestones for each domain. These specify sub-outcomes across time which are assessed through sub-evaluation questions. These collectively contribute to the achievement of the overarching objectives for each domain and for the program as a whole.

Table 2 below outlines the short-term sub-evaluation questions for each domain:

Domain	Short-term sub-evaluation questions
Engagement	<ul style="list-style-type: none"> - Is stakeholder engagement comprehensive and inclusive? - Is best practice governance in place? - Is participation reaching expected levels with the appropriate jurisdictional and sociodemographic spread? - Are stakeholders satisfied?
Technical solutions	<ul style="list-style-type: none"> - Can stakeholders access Lumos data? - Is data transfer and linkage occurring for the expected number of practices (~10% of NSW practices)? - Is patient and practice privacy optimised throughout the data lifecycle?
Analytics and reporting	<ul style="list-style-type: none"> - Does the Lumos data asset link a range of relevant health data sets? - Can Lumos data reliably inform improvement strategies? - Are unique and actionable insights revealed and disseminated? - Has a community of practice been established with members from an appropriate range of users? - Does the Lumos asset underpin improvements in practice?
Delivery of Value	<ul style="list-style-type: none"> - Have there been insights? Are they policy ready? - Do policy makers, decision makers know about the insights? - Are insights being used to underpin/ support VBHC? - What is the value the Commonwealth? What is the value to NSW? - What is sustainable BAU?

Table 2 - the short-term sub-evaluation questions of the Lumos Monitoring and Evaluation Framework





To measure achievements of interim and ultimate outcomes, a suite of indicators have been identified based on the evaluation and sub-evaluation questions. These provide measurable information that objectively show progress towards one or more sub-objectives and whether the overall program ambition is achieved. This framework uses a combination of qualitative and quantitative indicators that are most relevant to the evaluation questions, to give a clear understanding of progress of the program against its milestones. Multiple indicators are selected for each domain to ensure findings are reliable and informative.

Details on each domain and their interim milestones, indicators and data sources can be found in [Appendix 2](#).

Data Collection

Data Sources

Data sources for each indicator are identified such as program data, program documentation and surveys. They are chosen pragmatically to allow efficient, effective and reliable evaluation, with existing program documentation leveraged where appropriate. This allows the evaluation to be performed in a timely way and minimises wastage of Lumos program resources.

Additionally, the program has been designed from the outset with continuous tracking to facilitated continuous improvement. Many of these routine data collections and reports can be used as accurate data sources for this monitoring and evaluation which avoids duplication of effort.



Data capture

Figure 5 shows the cycle of data acquisition over each calendar year of monitoring and evaluation. As the figure shows, the cycle is anchored by two general practice data extractions and linkage to NSW Health data each year, in April and October. Ongoing program data (identified in blue below) are collected following the extractions and linkage, and data access and use are continuously captured. Purpose specific data collection (identified in green below) will be undertaken to capture the views of stakeholders and participating general practices.



Figure 5 - the annual cycle of data acquisition

Further details on the data collection plan can be found in [Appendix 5](#).



Lumos

Framework implementation timeline

The program evaluation will be performed annually for three years with an annual report provided after each (Figure 6). The first program evaluation is undertaken in mid-2021. This reflects the move from pilot to scale up data collection in mid 2020 with the first two years of Health Innovation Funding, and establishment of scale up with the further Health Innovation Funding. Evaluation reporting will be undertaken in late 2022 and 2023, when the current funding cycle will be in its final year.

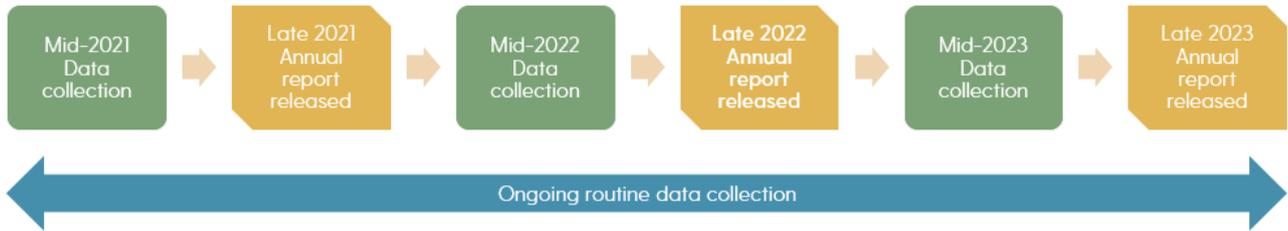
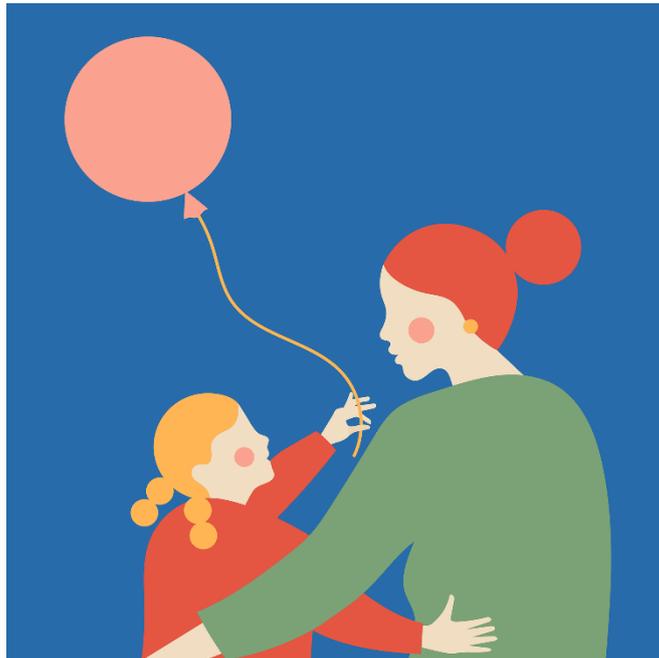
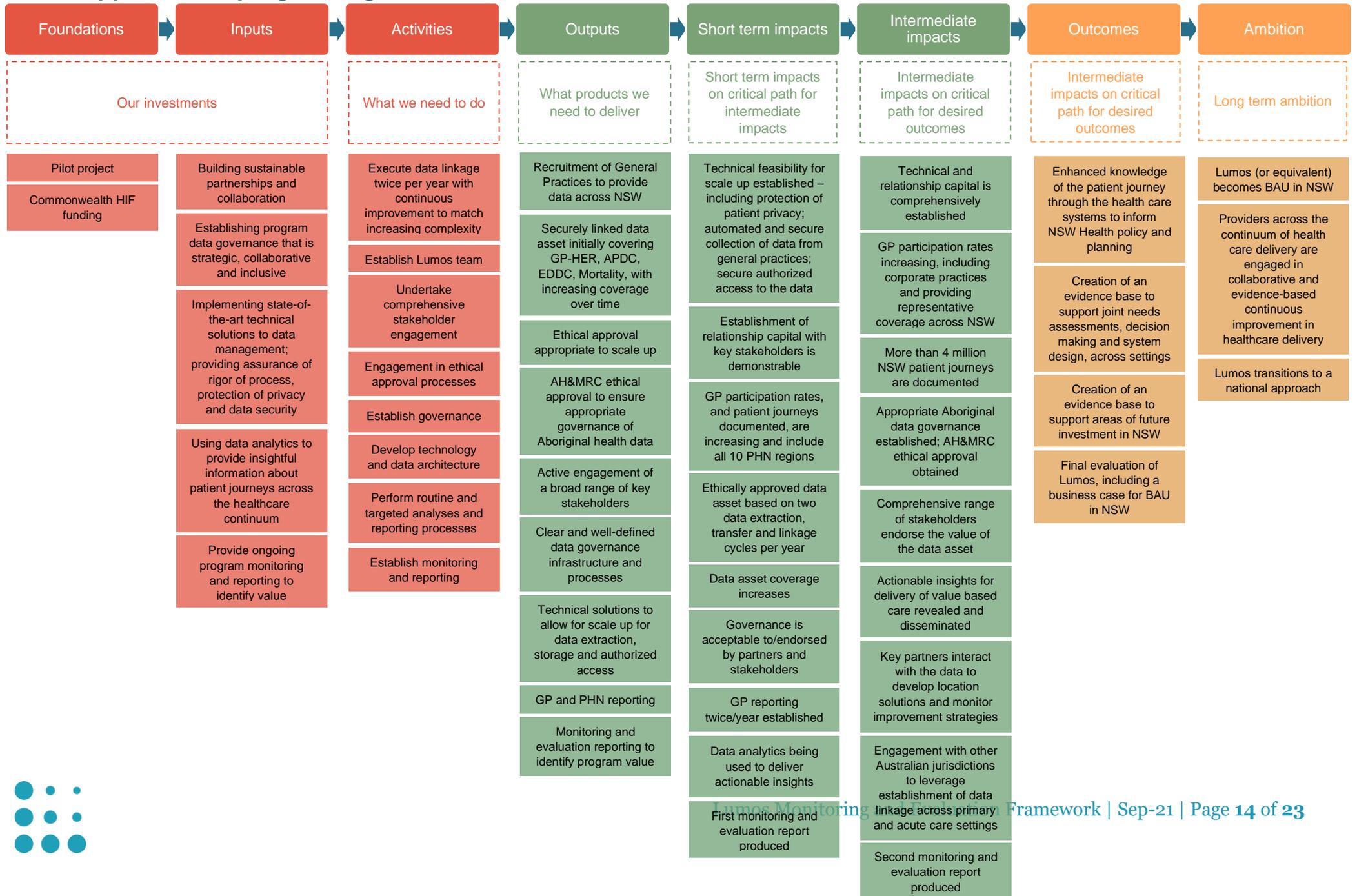


Figure 6 - the annual cycle of data collection and reporting



Appendix 1 – program logic



Appendix 2 – detailed evaluation plan

Engagement

Overarching outcome: strong stakeholder endorsement and partner participation and trusting relationships.

Short term - year 3				Medium term - year 4-5				Data Source (s)
Sub-outcomes	Sub-evaluation questions	Indicator	Data	Sub-outcomes	Sub-evaluation questions	Indicator	Data	
Engagement is state-wide and stakeholder wide	Is stakeholder engagement comprehensive and inclusive?	Stakeholder coverage	Descriptive / qualitative	Stakeholder endorsement of the value of the data asset	Are stakeholders supportive?	Establishment of relationship capital	Qualitative	Program data / annual survey / interviews
Governance is in place	Is best practice governance in place?	Best practice; ethics approval	Descriptive / qualitative	Governance is endorsed	Are stakeholders satisfied with governance?	Stakeholder satisfaction (including AMS and ACCHO stakeholders)	Qualitative	Annual survey / interviews
Partnership and participation is state-wide	Is participation reaching expected levels with the appropriate jurisdictional and sociodemographic spread?	6 monthly participation data, showing progress against expected	Quantitative	Partnership and participation is state-wide	Is participation reflecting increased jurisdictional and sociodemographic spread (e.g. difficult to reach practices)?	6 monthly participation data, showing progress against expected	Quantitative	Program data
Effective partnership with Aboriginal organisations including AH&MRC, CAH and ACCHOs	Are appropriate foundations for Aboriginal data collection and use being established?	Data sovereignty plan; Aboriginal Lumos team member engagement; AH&MRC ethics approval	Qualitative	AMSs and ACCHOs can participate in Lumos in culturally appropriate ways	Are AMSs and ACCHO's satisfied with the governance of Lumos?	AMS and ACCHO participation / satisfaction	Quantitative / qualitative	Program data / annual survey / interviews
Stakeholders are satisfied with asset, access, and security	Are stakeholders satisfied?	Annual satisfaction survey/interviews	Qualitative	Stakeholders are satisfied with asset, access and security	Are stakeholders satisfied with the asset, access, and security?	Stakeholder satisfaction (including AMS and ACCHO stakeholders)	Qualitative	Annual survey / interviews

Table 3 - the Lumos evaluation plan for the engagement domain



Technical solutions

Overarching outcome: successful proof of concept.

Short term - year 3				Medium term - year 4-5				Data Source (s)
Sub-outcomes	Sub-evaluation questions	Indicator	Data	Sub-outcomes	Sub-evaluation questions	Indicator	Data	
Data available to internal and external stakeholders	Can stakeholders access Lumos data?	SAPHE usage; practice report distribution	Quantitative	Data accessed and analysed by internal and external stakeholders	Are stakeholders securely accessing Lumos data?	SAPHE usage; SAPHE export requests; practice report distribution	Quantitative	Program data
Data transfer and linkage is scaled	Is data transfer and linkage occurring for the expected number of practices (~10% of NSW practices)?	Practice and patient participation; number and quality of extraction vendors	Quantitative	Data transfer and linkage is scaled	Is data transfer and linkage occurring for the expected number of practices (~20% of NSW practices)?	Practice and patient participation; number and quality of extraction vendors accommodated; end-to-end technical review	Quantitative / qualitative	Program data
Innovation in linkage: 2 additional linkages to update NSW data to GP data	Is more timely linkage able to be achieved?	Number and nature of annual linkages	Quantitative / qualitative	Innovation in linkage: addition of MBS and PBS data	Is it feasible to link MBS and PBS to the Lumos data asset and does it add value?	Analysis of the value added by MBS and PBS data to the Lumos data asset	Quantitative / qualitative	Program data
Patient and practice privacy maintained throughout the data lifecycle	Is patient and practice privacy optimised throughout the data lifecycle?	Privacy Impact Assessment; PPRL implementation; data breach register	Quantitative / qualitative	Patient and practice privacy maintained throughout the data lifecycle	Is patient and practice privacy optimised throughout the data lifecycle?	PPRL implementation; data breach register; end-to-end technical review	Quantitative / qualitative	Program data

Table 4 - the Lumos evaluation plan for the technical solutions domain



Analytics and reporting

Overarching outcome: creation of practice relevant evidence base that is accessible and used for continuous improvement.

Short term - year 3				Medium term - year 4-5				Data Source (s)
Sub-outcomes	Sub-evaluation questions	Indicator	Data	Sub-outcomes	Sub-evaluation questions	Indicator	Data	
The Lumos data asset links a range of relevant health data sets	Does the Lumos data asset link a range of relevant health data sets?	Number and type of data sets included in Lumos data asset	Quantitative	The Lumos data asset links a range of relevant health data sets	Does the Lumos data asset link a range of relevant health data sets?	Number and type of data sets included in Lumos data asset	Quantitative	Program data
Data quality enables the data asset to reliably inform improvement strategies	Can Lumos data reliably inform improvement strategies?	Routine data checks confirm quality after each linkage	Quantitative / qualitative	Data quality enables the data asset to reliably inform improvement strategies	Can Lumos data reliably inform improvement strategies?	Routine data checks confirm quality after each linkage	Quantitative / qualitative	Program data
Novel, relevant, and actionable insights are revealed and disseminated	Are unique and actionable insights revealed and disseminated?	Volume of insights revealed; insights dissemination	Quantitative / qualitative	Novel, relevant, and actionable insights are revealed and disseminated.	Are unique and actionable insights revealed and disseminated?	Volume of insights revealed; insights dissemination	Quantitative / qualitative	Program data
A community of practice is established	Has a community of practice been established with members from an appropriate range of users?	Community of practice sessions held/attended/ valued; membership of community of practice	Quantitative	A community of practice facilitates sharing of insights and learnings between different organisations	Does the community of practice facilitate sharing of insights and learnings between different organisations?	Minutes from community of practice sessions and stakeholder perceptions	Quantitative / qualitative	Program data / annual survey
The Lumos data asset underpins improvements in practice	Does the Lumos asset underpin improvements in practice?	Local case studies at a practice or PHN level; PHN annual reviews and interviews; GP survey	Qualitative	The Lumos data asset underpins improvements in practice.	Does the Lumos asset underpin improvements in practice?	Local case studies at a practice or PHN level; PHN annual reviews and interviews; GP survey	Qualitative	Program data / annual survey

Table 5 - the Lumos evaluation plan for the analytics and reporting domain



Value

Overarching outcome: delivery of support to Value Based Healthcare is demonstrated.

Short term - year 3				Medium term - year 4-5				Data Source (s)
Sub-outcomes	Sub-evaluation questions	Indicator	Data	Sub-outcomes	Sub-evaluation questions	Indicator	Data	
High quality and policy relevant, system reform focused, insights delivered	Have there been insights? Are they policy ready?	Analyses undertaken - stocktake, appraisal of quality / relevance	Qualitative	High quality and policy relevant, system reformed focused, insights delivered	Have there been insights? Are they policy ready?	Analyses undertaken - stocktake, appraisal of quality / relevance	Qualitative	Program data
Effective translation - insights are communicated / disseminated effectively	Do policy makers and decision makers know about the insights?	Track dissemination; canvass end-user feedback (e.g. PHNs as well as MoH)	Qualitative	Insights communicated / disseminated effectively	Do policy makers and decision makers know about the insights?	Dissemination; end-user feedback (e.g. PHNs as well as MoH)	Qualitative	Program data / annual survey
Insights are used in the transition from volume to value	Are insights being used to underpin/ support VBHC?	Identify demonstrable use cases e.g. DSM, CoCo monitoring, PHN Needs Analysis	Qualitative	Insights are used in the transition from volume to value	Are insights being used to underpin/ support VBHC?	Demonstrable use cases identified	Qualitative	Program data / case studies
Value demonstrated to Commonwealth and State funders	What is the value the Commonwealth? What is the value to NSW? What is sustainable BAU?	Business Case for BAU developed; cross jurisdictional Collaboration established; plan for contribution to evaluation of VBHC initiatives developed	Quantitative / qualitative	Lumos provides demonstrates the business case for BAU	Is Lumos feasible as BAU?	Lumos built into the evaluation plan for Value Based Healthcare; Lumos built into the national reform agenda; Sustainable funding received	Qualitative / quantitative	Program data

Table 6 - the Lumos evaluation plan for the value domain



Appendix 3 – stakeholder evaluation

The Lumos program engages a broad range of stakeholders from Primary Health Networks, Local Health Districts, the Ministry of Health, Aboriginal health organisations, the state and Commonwealth governments, providers, and consumer representatives.

Stakeholder engagement was mapped in January 2021 according to the stakeholder’s level of influence (by asking: how important are they to us?) and the level of commitment required of them (by asking: what do we need from them?). The stakeholder map is expected to evolve over time, and that evolution will be tracked as part of the monitoring and evaluation of the program.

Feedback on the level of engagement and satisfaction of stakeholders is sought through two main methods:

- Stakeholder interviews
- Surveys completed by participating practices.

These are described below.

Stakeholder interviews

Stakeholder interviews are conducted by an external consulting agency that specialises in this type of evaluation. Findings are de-identified and presented as a thematic analysis in an evaluation report.

The purpose of the consultations is to understand the use of the Lumos data asset, the level of involvement of key stakeholders, the value and benefit of Lumos and any challenges associated with Lumos implementation and use.

The points below outline the broad areas that are covered in the consultation. This is provided as a guide to interviewees beforehand and is not exhaustive.

- What is your role and level of involvement with the Lumos data asset?
- How have you used the Lumos data asset to date and how might you use it in future?
- What supports would increase your involvement in Lumos/assist you in using the Lumos data asset more?
- What is the value of Lumos/the benefits (both now and in the future)?
- What are the current challenges in using Lumos?
- Are there any opportunities for improvement in relation to Lumos?

GP survey

Participating practices receive a practice report following each linkage that contains unique data about their patients. This report also includes a link to an electronic survey about their experiences in the Lumos program, which has been co-designed with participating GPs. GPs and practice managers are invited to rate statements on the following 5-point scale:

Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
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One set of statements in the survey relate directly to the practice report that participating practices receive:

- The information in the report is easy to digest
- The report should be distributed electronically to practices



Lumos

- The information in the report is relevant to my practice in terms of
 - Timeliness
 - The information included
- Data about hospital attendance, general practice attendance and clinical information in the report is valuable
- The information in the practice report has changed – or has the potential to inform changes – to improve my Practice

The final statements are about the Lumos program overall:

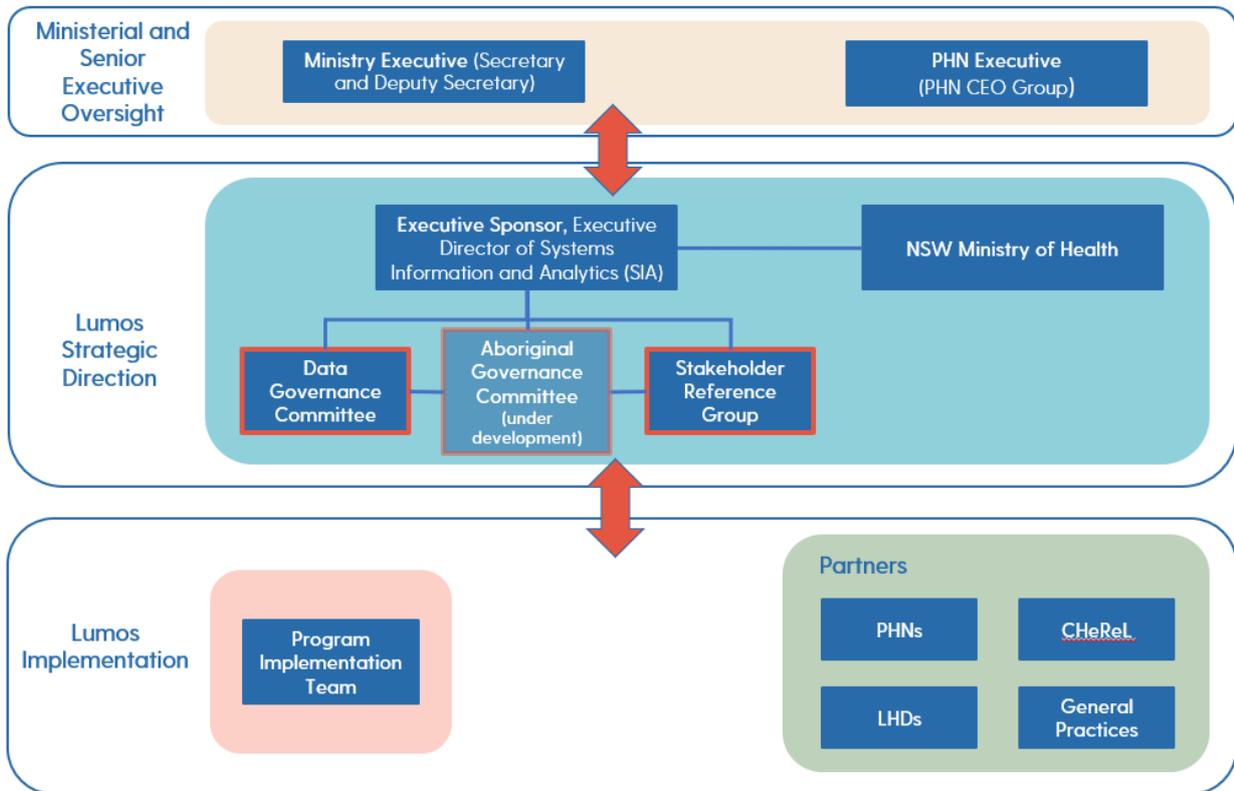
- The information sessions about the report are helpful (either one-on-one with the PHN or as part of a group information session)
- I am confident in the program's
 - Privacy measures (i.e., patient confidentiality)
 - Security measures (i.e., storage and use of the data)
- Access to comprehensive information about the patient journey is important for health care delivery



Lumos

Appendix 4 – program governance structure

The Lumos program operates under a robust governance structure in collaboration with a range of stakeholders. The governance structure is illustrated below



Appendix 5 – data collection plan

Table 7 below outlines what data is collected, by whom, and when.

Data source	Who collects the data?	When is the data collected?
Interviews	External consultants, performed with key stakeholders identified in the stakeholder matrix	Annually – end of financial year
Satisfaction surveys	PHNs provide Lumos survey to participating General Practitioners. Lumos Senior Project Officer collates results	Directly after each report distribution. Link to the survey is included in the report.
Stakeholder matrix	Lumos team	Annually – before program evaluation interviews
Practice recruitment	Lumos Business Analyst	Weekly routine reporting
SAPHE usage reporting	Lumos Business Analyst	Weekly routine reporting
Practice participation data and extraction vendor review	Lumos Business Analyst	Twice/year, following each linkage
Data breach register	Lumos Technical Lead	Ongoing – breaches are logged as they arise
Data quality checks	Lumos Epidemiologist and Biostatisticians	Twice/year – following each linkage, prior to report dissemination
Community of practice session attendance and SharePoint activity	Lumos Business Analyst	Monthly – after each Community of Practice session
Register for insights, dissemination and case studies	Lumos Project Officer	Ongoing – logged as they arise
Quality appraisal of insights	Lumos Epidemiologist and Biostatisticians, and through peer review process	Ongoing – quality and relevance reviewed as insights are uncovered

Table 7 - the data collection plan of the Lumos Monitoring and Evaluation Framework



