



Special Commission of Inquiry into Healthcare Funding

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Mr Richard Beasley SC
Commissioner
Special Commission of Inquiry into Healthcare Funding



Dear Commissioner,

Re: Special Commission of Inquiry into Healthcare Funding

eHealth NSW is a specialised agency within NSW Health, responsible for developing state-wide digital health strategy, policy, standards, and investment plans, as well as coordinating and implementing state-wide programs and projects. eHealth NSW undertakes these functions under the policy guidance and oversight of the NSW Ministry of Health and in partnership with Local Health Districts (LHDs), Specialty Health Networks (SHNs), Pillars, statewide services and other NSW Health entities.

eHealth NSW is also responsible for the delivery of a wide range of Information and Communication Technology (ICT) support services, enabling day to day clinical and business operations of NSW Health organisations. Each day, tens of thousands of frontline clinicians log into the Electronic Medical Record and other clinical information systems, supported by eHealth NSW, to provide quality healthcare to patients across NSW. Each fortnight, StaffLink system, managed by eHealth NSW, processes payroll for more than 170,000 staff of NSW Health. And each year eHealth NSW manages 617,000 calls for IT support made to the State-wide Service Desk and 446,000 ICT Service Requests that are raised via the SARA Customer Service Portal.

eHealth NSW thanks the Special Commission of Inquiry for the opportunity to provide a submission to the Inquiry into healthcare funding. We have tried to summarise our feedback under relevant sections of the Commission's terms of reference (taking some liberty to contextualise them in relation to digital health and ICT).

A. The funding of technology services provided in NSW Health

eHealth NSW is currently funded via three different mechanisms.

eHealth NSW receives capital funding for statewide programs and projects from NSW Treasury via the Ministry of Health. Funding for these initiatives can also come from the NSW Government Digital Restart Fund, administered by the Department of Customer Services.

Recurrent funding is also received via the Ministry of Health for programs and services that do not have a capital funding allocation. eHealth NSW covers the cost of 'business as usual' service provision to NSW Health entities via 'user charges'. Examples of the components that are included in user charges are software licences and hosting for corporate and clinical applications (such as HealthRoster and Electronic Medical Records), access to the Statewide Service Desk and onsite support, application hosting, networking, and other technical support services.

Finally, recurrent funding is also allocated by the Ministry to support core functions of the agency, including its governance, management, finance, procurement, and people and culture functions.

In addition to funding allocated to eHealth NSW, other NSW Health entities, including LHDs and SHNs, fund a range of local ICT and digital systems and support services (see comments on the 'federated ICT model' later in this document).

Accelerated digitisation across the health system over the last decade has required corresponding funding to be allocated to eHealth NSW and LHDs/SHNs to ensure that systems and infrastructure can be implemented and supported as required. While funding for digital health has grown in recent years, the total operating expenditure on ICT and digital is estimated to be less than 4% of the total operating expenditure of NSW Health as a whole. Capital expenditure on ICT and digital projects varies between financial years and, in recent years has been in the range of 5% to 7% of the total capital expenditure of NSW Health. The health system needs to consider whether this level of recurrent funding and capital investment is adequate to meet the future needs and developments of NSW Health as a digitally-enabled, world class healthcare organisation.

B. The existing governance and accountability structure for digital health and technology in NSW Health

i. Balancing central coordination with local innovation

Prior to the establishment of eHealth NSW, many of the functions and leadership provided by a dedicated digital health agency were delivered in a more devolved manner and split across many different NSW Health organisations. This often resulted in duplication of effort and a fragmented and inequitable approach to ICT investment and implementation across the state.

While significant inroads have been achieved with streamlining statewide investments and implementations since eHealth NSW's establishment in 2014, ICT operations across NSW Health continue to function across a large, federated and complex landscape, with a degree of variation in most Local Health Districts and Specialty Health Networks.

However, it should be noted that this 'federated' approach ensures that there is a balance between local innovations (driven by locally-specific needs and innovative models of care) and central coordination (driven by standardisation and statewide implementation of common platforms).

ii. Engaging and involving local communities in digital health development and delivery

As eHealth NSW continues to support the digital transformation of NSW Health, it will be critical that we take an inclusive approach to how we design, build and manage our systems, and how we create awareness and understanding of digital health in the broader community. eHealth NSW wants to ensure that the process of designing and building digital systems involves diverse voices and views throughout the process – so that different needs of the community are taken into account. This should extend to the way in which we design communications and education campaigns, catering for the differing needs of communities.

eHealth NSW has established a specialised consumer and community engagement function to work with consumers and communities across the State in the design, development and delivery of digital health solutions. eHealth NSW now has one of the largest consumer networks, with around 1,400 consumers engaged in the process. This engagement is undertaken in partnership with the Ministry of Health, Pillars, LHDs and SHNs.

iii. How governance structures can support efficient implementation of state-wide reform programs and a balance of system and local level needs and priorities

Combining digital health strategic and operational leadership into one agency has not only enabled NSW Health to be one of the most mature digitally enabled health systems in Australia, it has also enabled NSW Health to attain significant strategic, operational, and financial benefits.

Since its establishment in 2014, eHealth NSW has continued to grow and mature as an agency. In particular, Health NSW is underpinned by a strong collaborative governance model, which provides a balance between local plans and initiatives with state-wide strategies and priorities.

Until recently, the work of eHealth NSW was overseen by the eHealth Executive Council (eHEC) which was the peak ICT/digital governance committee for NSW Health. eHEC oversaw the eHealth strategy for NSW Health, advised on eHealth policy and standards, and monitored eHealth performance. The eHealth Executive Council was chaired by the Secretary and its members consisted of Deputy Secretaries as well as Chief Executives from Local Health Districts, Specialty Health Networks, Pillars and state-wide services.

An advisory board is in the process of being established for eHealth NSW. The Board will focus on the governance of eHealth NSW as an agency and will provide strategic advice to the Chief Executive of eHealth NSW and to the Secretary of NSW Health. Also, in conjunction with the advisory board, a NSW Health ICT and Digital Strategy Group is being established to take a broader system-wide view of digital health strategy and advise on prioritisation of key ICT/digital investments in line with the Future Health Strategy and NSW Government priorities.

eHealth NSW also has strong governance structures in place to support the delivery of digital health programs. This includes design working groups, program steering

committees, and portfolio governance committees. Design Working Groups help eHealth NSW design safe, useful, usable and well-used digital solutions. Steering Committees ensure the success of a program or project through effective governance, so that it can deliver the outcomes and benefits specified in the business case. Portfolio Governance Committees are responsible for a group of related programs and projects within each portfolio (e.g. clinical, corporate, infrastructure), as well as prioritisation and resolution of issues and conflicts across their portfolio. Design Working Groups, Steering Committees and Portfolio Governance Committees all consist of members from across NSW Health.

In conjunction with the Clinical Excellence Commission, eHealth NSW jointly manages the Safety & Quality Advisory Group, which oversees the safety and quality of digital health solutions. Representatives from eHealth NSW also represent NSW Health on key NSW Government digital committees such as the ICT & Digital Leadership Group and the NSW Government Cyber Security Senior Officers Group.

C. The extent to which allocation of resources supports or obstructs progress of digital health in NSW

Progress made with digitisation of healthcare services and adoption of technology-enabled models of care, such as telehealth and virtual care, has created funding pressures, which require a sustainable funding approach for the future. Also, further progress of digital health and virtual care could be impeded by funding models currently in place across the wider healthcare environment.

In recent years, digital technologies, including those used in health, have seen an increased adoption and use of the Cloud, which offers a range of advantages in terms of flexibility, agility and security of ICT infrastructure. This, in turn, has resulted in a move away from capitalily-funded infrastructure (i.e. purchasing servers and storage infrastructure) and towards recurrently-funded services (i.e. infrastructure and applications provided as a service). While this trend has dramatically reduced the amount of capital funding required to refresh and update ICT infrastructure, it has resulted in an increase in recurrent expenditure. The trend is yet to be fully recognised in the funding models for healthcare and other public services, which poses a risk to financial and operational sustainability of the health system if left unaddressed.

This issue is further exacerbated by ICT and digital being treated as traditional 'cost centres', increasingly targeted by a variety of simplistic cost savings initiatives. The risk being that, in an environment of capital funding constraints combined with recurrent cost saving targets, the inevitable outcome will be a gradual deterioration in critical ICT infrastructure, leading to risks of operational disruptions, cyber security breaches and missed opportunities for productivity and safety advancements enabled by new, cloud-based technologies.

As NSW Health was a relatively early adopter of ICT and digital, there are now many 'legacy solutions' in use across all NSW Health organisations. The cost of hosting and supporting these systems is considerable, and while a focussed effort is underway to modernise, replace and decommission as many of them as possible, it will take a number

of years for the modernisation effort to be fully realised. A public sector-wide ‘legacy modernisation’ strategy is required, along with a realistic investment plan for such modernisation to be successful.

Another challenge has arisen due to the changing nature of digital health. In the years past, most of the digital capabilities been implemented across NSW Health have focussed on supporting frontline healthcare staff – clinicians, administrators, support staff – working in public hospital facilities. Funding models for these types of digital capabilities relied on allocating costs to LHDs and SHNs as direct beneficiaries and users of these capabilities.

However, more recently, new digital capabilities have been designed and implemented where the end user is the actual patient or consumer of healthcare services. Examples include: HOPE platform for recording of patient-reported measures, CARMI platform for the school vaccination program, and Real Time Patient Monitoring platform for the home-based management of patients with chronic disease. These, and other consumer-facing digital applications, will require a different cost allocation model, which will not necessarily be directly linked to traditional allocation metrics such as the number of clinical staff in each facility or the number of discharges from hospitals. Also, new user support models will have to be designed, where patients/consumers can be supported in their adoption and use of digital technology. eHealth NSW does not currently have such a support model in place and may need to partner with other organisations, in either the public or private sectors, who might be better placed to provide such support to consumers.

Finally, funding models themselves can be an impediment to the progress of digital health and virtual care. A good example of this is asynchronous virtual care, also known as ‘store and forward’. In this model of care, clinical information, such as patient history, clinical observations, medical images and pathology test results, are stored by one clinician or clinical team (e.g. primary healthcare clinician) to be viewed and assessed by another clinical team (e.g. a specialist). The interaction does not occur in real time, but within an agreed timeframe (e.g. 48-72 hours). Through this model of virtual care, a General Practitioner can, for example, seek expert advice from a medical specialist, and receive such advice within hours, which would otherwise require a ‘referral letter’ and a specialist appointment, often taking many weeks and months to be completed.

A number of comparable healthcare jurisdictions, including those in the USA and Canada, have adopted such models and have found effective ways to fund them, resulting in a significant reduction in traditional outpatient referrals. Australia is currently lagging behind these international exemplars due to the barriers that exist in the current Medicare funding rules which do not cater for these models of care.

D. Strategies available to NSW Health to address escalating costs, limit wastage, minimise overservicing and identify gaps or areas of improvement in financial management

A number of statewide digital programs provide opportunities to address escalating costs and improve financial management of digital technology. These are outlined below:

Consumption-based ICT pricing

In 2022, eHealth NSW introduced a new, consumption-based pricing model for the services it provides to NSW Health entities. The model was developed in response to customer feedback and the need for an intuitive and transparent approach to pricing that accurately reflects IT consumption. It has given NSW Health organisations greater visibility and control over their IT expenditure. Supported by a specialised costing and pricing solution known as Apptio, the new approach enables creation of a 'Bill of IT' for each NSW Health entity and provides:

- a single source of truth for the cost of all eHealth NSW services,
- simple and easy to use platform to analyse billing,
- transparency of price for each service offering,
- enhanced understanding of each organisation's IT consumption,
- a foundation to plan expenditure more accurately and monitor performance against targets.

The Health Grade Enterprise Network (HGEN)

HGEN is a new approach to procuring and delivering hospital networking infrastructure. The approach leverages global leaders in network services to provide a 'network capability as a service', so NSW Health only pays for what is used, can quickly scale up and down, and closely align service performance and features to business and clinical need. HGEN will provide a sustainable methodology to be able to refresh this important infrastructure asset and be a key technology launchpad for upcoming digital innovations such as the Single Digital Patient Record (SDPR) and virtual care to support new models of clinical delivery.

Statewide approach to procurement and management of devices

Within the current federated ICT model, eHealth NSW procures and manages devices such as laptops, desktops and mobile devices used by staff of central agencies of health (Ministry of Health and Pillars) as well as statewide shared service agencies (HealthShare, Health Infrastructure, NSW Health Pathology). LHDs and SHNs currently procure and manage their own fleets of these devices, usually in a locally-specific and idiosyncratic fashion. Work is currently underway to design a new operating model, which will see greater standardisation of devices across the health system, a joined-up procurement of devices and a more consistent and consolidated management of the fleet. This is also seen as an enabler of significant statewide clinical programs such as the Single Digital Patient Record (SDPR).

E. Opportunities to improve NSW Health procurement process and practice

Having a focussed ICT procurement function, managed by eHealth NSW as the ICT Category Manager, has supported greater standardisation of technology offerings across local health districts and other health entities. This has created a more consistent digital experience for NSW Health's staff, patients, and consumers. It has also enabled NSW Health to procure at scale for sustainable management of ICT infrastructure (e.g. hospital networks), applications (e.g. digital radiology PACS-RIS system) and services (e.g. vendor support for key clinical applications such as the Electronic Medical Records).

Furthermore, NSW Health is an active participant in all-of-government procurement initiatives and has been successful in negotiating discounts greater than the generic NSW

Government arrangements for key enterprise-wide licensing agreements with strategic vendors such as Microsoft, Oracle and ServiceNow. These additional discounts have occasionally been leveraged by other departments in their own contractual renewal cycles.

NSW Health's investment in consistent ICT platforms and cloud technology enabled eHealth NSW to respond with agility and efficiency during the acute phase of the COVID-19 pandemic, when many services pivoted to virtual delivery and many staff moved to remote working arrangements. The whole-of-health approach to ICT procurement has also enabled eHealth NSW to develop strategic relationships with its ICT industry partners. During the COVID-19 pandemic, eHealth NSW was able to leverage its relationships and contracts to ensure the critical supply of ICT equipment, network, and services to NSW Health at a time of global supply-chain challenges.

Further opportunities exist to drive procurement savings and efficiencies in the ICT/Digital category. eHealth NSW is an active participant in the Ministry-led Procurement Reform program, both as an enabler of the broader reform (e.g. through the development of systems such as SmartChain and DeliverEase) as well as being the ICT Category Manager.

F. The current capacity and capability of the NSW Health workforce to meet the current needs of patients and staff, and its sustainability to meet future demands

i. the distribution of technology staff across NSW Health

Digital health and ICT services continue to be delivered via a federated model across NSW Health. This is in part due to the current fragmented Electronic Medical Record landscape. While eHealth NSW provides ICT governance, strategy, and procurement guidelines, each LHD and SHN employs ICT staff who operate within the context of local needs and priorities. Historically, this has resulted in a degree of maldistribution of technology staff across the health system. Rural and regional LHDs have found it particularly challenging to recruit and retain technology staff at different points in time.

ii. an examination of existing skills shortages;

Like the broader public sector, eHealth NSW experiences challenges from time to time in recruiting and attracting staff who are appropriately skilled in the areas such as: integration, data analytics, cybersecurity, application support, cloud infrastructure, and DevOps. Resourcing from the open market can be highly challenging for many key ICT skill areas.

Skills shortages make it particularly difficult for government agencies to match the growth in private sector salaries. In the past, this has resulted in the use of contingent workers (contractors) to ensure delivery of critical services and new programs.

While the ICT labour market conditions have changed in recent weeks and months, increasing public sector's chances of attracting technology talent, there are unrealistic expectations being placed on agencies in terms of their ability to 'convert' contractors into permanent or fixed-term employees in the short term. eHealth NSW has developed effective mechanisms for creating more permanent

staffing structures and reducing reliance on contingent (contractor) workforce, including through creation of ‘capability practices’ and ‘resource pools’ for most common ICT skill profiles. However, these mechanisms will take some time to deliver the desired outcomes. In the meantime, any precipitous reduction in the number of contingent workers will place key projects and services at risk.

iii. evaluating financial and non-financial factors impacting on the retention and attraction of staff;

Recruitment and retention of ICT staff is challenged by the fact that ICT wage structure within NSW public sector is generally below the private sector. This results in the inability to attract the best talent as well as in the loss of more experienced staff to private organisations. While this is a public sector-wide issue, its impacts on NSW Health can be particularly significant due to the mission-critical nature of many digital systems used in healthcare.

eHealth NSW has been actively engaged in understanding and building tools and resources to attract, retain and support the development of a digital workforce in NSW Health. The establishment of the eHealth NSW Digital Academy assists with developing people and building capability, with a vision to become the digital centre of excellence for NSW Health. The Digital Academy is one of the largest of its kind in Australia and enables our people to upskill, including learning from global technology leaders through our strong partnerships with industry leading organisations. Ongoing investment in our workforce will ensure that NSW Health can continue to build fit-for-purpose technology, design appropriate solutions and create digital innovations that improve the health outcomes and experiences for patients into the future.

In addition, eHealth NSW has also worked to strengthen our Employee Value Proposition (EVP) through reinforcing a strong organisational purpose, building culture and empowering our staff. We are pleased to report that eHealth NSW continues to have some of the highest employee engagement rates in the NSW public sector.

iv. existing employment standards;

The current NSW Health award structures are not well-aligned or competitive to the technology sector. In many cases, staff are either employed via the computer managers award, or the health service managers award. eHealth NSW has been in discussions with the Ministry of Health about award reform for technology-related roles. This is likely to require a public sector-wide approach.

G. New models of care and technical and clinical innovations to improve health outcomes for the people of NSW

NSW Health is currently on a journey towards a person-centred, digitally-enabled healthcare future. This needs to be underpinned by the right technology platforms, integration and interoperability capabilities, patient experience and engagement channels, as well as advanced data management and analytics capabilities, which are ready to take advantage of future developments such as Artificial Intelligence.

The Single Digital Patient Record (SDPR) will be a major step in the digital transformation of healthcare across NSW. The SDPR will provide a highly secure, integrated clinical information platform to support provision of safe, quality patient care across the NSW public health system. The new platform builds on the strong foundations established in previous years but addresses legacy issues such as geographically fragmented patient records, duplicative systems (e.g. five different laboratory information systems) and lack of integration with medical devices.

SDPR will equip clinicians with timely access to up-to-date comprehensive NSW Health medical, pathology, and patient administration records in a single system. As a 'next generation' electronic health record, SDPR will enable patients and consumers greater access to information and digital tools related to their health through a patient portal and patient app. It will also provide an opportunity for NSW Health to decommission a large number of legacy clinical systems. Importantly, this next generation system will be more user friendly, providing busy clinicians and frontline staff with seamless, state of the art tools, the ability to use mobile devices, as well as advanced analytics to guide improvements in safety, quality, efficiency and outcomes of patient care.

While the main objective of the SDPR is to bring about clinical transformation within NSW Health, it must also enable our health system to radically enhance its integration with community-based services, including primary care and aged care. NSW Health already has in place a range of capabilities for electronic delivery of discharge summaries to GPs, as well as submission of other types of clinical information into the personally-controlled electronic health record – the federally run My Health Record.

We anticipate that the SPDR will enable a much greater level of integration and interoperability with primary care and other community-based service providers. A specific workstream is being established within the SDPR Program to focus on delivering these integration capabilities over the next few years. GPs and other community-based providers will be invited to participate in the design working groups for this part of the SPDR program. Similarly, a specific workstream is being established to focus on consumer-facing capabilities of the SDPR, including the patient portal and the app.

As result of its progressive digitisation, NSW Health has a large number of operational systems of record (clinical and corporate), which contain a wealth of data. Traditional administrative data collections, which have been in place for many years and have served NSW Health very well, are now being supplemented with new capabilities for more rapid access to data, which opens up new opportunities for health service planning, safety and quality surveillance, clinical service enhancement, population health management, and research. eHealth NSW has developed an Enterprise Data Lake, which enables near real-time extraction of operational data into a highly secure environment for analysis and reporting. This industry-leading capability has been bolstered by rigorous data governance and data access controls.

These and similar advances in data management are opening up enormous possibilities for NSW Health to engage in exploration and active use of new technologies, such as Artificial Intelligence, which could add value in a number of clinical, administrative and operational areas of healthcare provision. NSW Health is currently developing a statewide governance model for AI and a formal framework for adoption and use of AI in NSW

Health, which will include important dimensions of ethics, equity, safety and social licence for the use of AI in health.

H. Any other matter reasonably relevant to the inquiry

While the increasing digitisation of healthcare is delivering many benefits to clinicians and patients, it comes with an increased risk of cyber attacks and data breaches. To deal with the complex and ever-growing threat landscape, NSW Health has invested heavily in its cyber security capabilities and defences over the last few years. eHealth NSW plays a leading role in the implementation and operation of Cyber Security Policy and Cyber Security Incident Response Plan within NSW Health. Our Cyber Security team has grown in size and capability, and many technical and non-technical risk mitigations are being put in place, often at a considerable additional cost to NSW Health.

In parallel with this internally-driven cyber security initiative, NSW Health is having to respond to new developments in the national cyber security arrangements. In particular, the Security of Critical Infrastructure (SOCl) Act has introduced additional compliance requirements for healthcare facilities designated as being part of the critical national infrastructure. While generally welcome as a sensible risk management mechanism, these additional requirements have not been backed by any extra funding from the Commonwealth, which places a further cost pressure on already stretched healthcare organisations.

In conclusion, I would like to thank you again for the opportunity to submit our comments and information to the Commission. Digital health, ICT and related technologies offer a huge potential to improve safety, quality, efficiency and outcomes of healthcare services, and improve patient experience. Meaningful and purposeful investment in such technologies, their effective implementation and ongoing support and enhancement is the key focus of our work at eHealth NSW. While we are proud of the many successes in NSW Health's digitisation journey to date, much remains to be delivered and there are distinct opportunities to improve and enhance our current environment. Sustainable funding models, appreciation of key technology trends, effective engagement of clinicians and communities, and ongoing investment in critical infrastructure and transformational programs such as the SDPR, will pave the way for future success of digital health as a key enabler of healthcare reform.

Yours sincerely



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