

Special Commission of Inquiry into Healthcare Funding

Statement of Dr Jean-Frédéric Levesque

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A. INTRODUCTION

1. My name is Jean-Frédéric Levesque. I am the Deputy Secretary for Clinical Innovation and Research at New South Wales Health and the Chief Executive of the New South Wales Agency for Clinical Innovation (**ACI**). I have held the role of Deputy Secretary since the position was created in February 2023. I have been the Chief Executive of the ACI since 2017. Between 2013 and 2017, prior to my ACI appointment, I was the Chief Executive of the NSW Bureau of Health Information. Since 2013, I have been an Adjunct Professor at the Centre for Primary Health Care and Equity at the University of NSW. I am a medical doctor by training and am a fellow of the Royal College of Surgeons and Physicians of Canada in Preventive Medicine and Population Health. I hold a PhD in Public Health with a specialisation in health system organisation. My CV is Exhibit 3 NSW Health Tranche 2 Consolidated Exhibit List.
2. This statement made by me accurately sets out the evidence that I would be prepared, if necessary, to give to the Special Commission of Inquiry into Healthcare Funding as a witness. The statement is true to the best of my knowledge and belief.
3. While the focus of my statement is primarily on the role of the Division of Clinical Innovation and Research specific to new models of care and technical and clinical innovations, examples relevant to workforce and funding innovation will be provided where they relate to statewide programs, led by the Division.

B. THE CLINICAL INNOVATION AND RESEARCH DIVISION

4. In February 2023, the ACI and the Office for Health and Medical Research (**OHMR**) were integrated to form a new Division of Clinical Innovation and Research (**the CIR Division**) within the Ministry of Health. The ACI continues in existence as a separate pillar

organisation, with a single person appointed to the dual role of Chief Executive of the ACI and Deputy Secretary of the CIR Division. The purpose of the dual role is explained further in paragraph 35 below.

5. The CIR Division was created to provide a central point for coordination and strategy setting, to drive a focus on statewide research and innovation priorities, recognising the sequential alignment of the OHMR and ACI in the continuum of innovation.
6. The CIR Division also includes the Office of the Deputy Secretary for Clinical Innovation and Research, and the Critical Intelligence Unit (CIU).
7. The Office of the Deputy Secretary comprises of 3 full-time equivalent (FTE) staff and ensures the administration of the daily function of the CIR Division and ministerial and external communication functions.
8. The CIU comprises 3 FTE staff. It was established in March 2020 by the ACI to provide rapid, evidence-based insights to support decision making during the COVID-19 pandemic. This was a crucial service to inform decisions of clinicians and policymakers, based on international literature and data analytics during the pandemic. Following the establishment of the CIR Division in 2023, the CIU structure was formalised and continues to provide high level summaries of key studies and emerging evidence on a range of clinical and innovation topics, with content reviewed regularly and updated as soon as new evidence and information is published. Now positioned at a Divisional level, the CIU continues to link in closely with the ACI, supporting the work of the networks and delivering key aspects of the ACI performance agreement; and more broadly, providing support through evidence to the Ministry of Health Executive and multiple statewide steering committees.

(i) The Office for Health and Medical Research (OHMR)

9. The OHMR was established in 2011 to build research capability in NSW. The OHMR includes a Finance, Infrastructure and Performance Directorate, a Directorate of Enterprise, International Partnerships and Clinical Trials, an Advanced Therapeutics Team and Research Ethics and Governance Unit. The OHMR also includes a time-limited Rural, Regional and Remote Clinical Trials team, with this program funded through the Australian Government under the Medical Research Future Fund.
10. Guided by the 2012 NSW Health and Medical Research Strategic Plan, the key priorities of the OHMR have focused on improving statewide capacity to deliver world class health

and medical research through facilitating engagement of industry and government stakeholders and assisting with the development of statewide strategic research priorities.

11. The OHMR also aims to provide a supportive policy framework and administer funding programs that support research infrastructure and innovation as well as supporting investment in the development and commercialisation of medical devices and related technologies.
12. The OHMR also works on research infrastructure through provision of a research ethics and governance approval management system, strengthening the research workforce through training programs for early-mid career researchers, supporting clinical trials and working with pillar organisations, local health districts (**LHDs**), specialty health networks (**SHNs**), primary care providers and the non-government sector in the translation of research into clinical practice.
13. Work is currently underway to develop a new strategic plan for Research and Innovation in NSW Health.
14. The OHMR is overseeing \$104.7 million in budget allocated for 2023-24 to support research, and commercialisation, including:
 - a. **\$4 million** which supports the salaries and wages of 37 ongoing FTE and 13 temporary FTE delivering time-limited projects;
 - b. **infrastructure** to support the day-to-day costs of running independent medical research institutes in NSW through the Medical Research Support Program and associated programs (\$44.5 million);
 - c. **medical technology and commercialisation initiatives** including the Medical Devices Fund, the Commercialisation Training Program and Brandon BioCatalyst (\$9.5 million);
 - d. innovative **health services research** including the Translational Research Grants Scheme (**TRGS**), which provides funding for projects with potential to quickly translate findings into treatments that could benefit the lives of NSW patients (\$5 million);

- e. building capability in **cardiovascular research** to improve outcomes in cardiovascular disease which causes 1 in 4 Australian deaths, through the Cardiovascular Research Capacity Program (\$15 million);
 - f. building the pipeline of researchers through **Early-Mid Career Grants and PhD Scholarships** (\$2.5 million);
 - g. **'omics' research** which provides NSW researchers with access to state-of-the-art omics technologies (\$6 million);
 - h. **paediatric precision medicine** research to investigate mechanisms of disease with the ability to tailor prevention, diagnostics and therapeutics to individual patients (\$5 million);
 - i. grants supporting **research into spinal cord injury and treatment** (\$3 million), **schizophrenia research** across basic science and pre-clinical research (\$1 million), and **Motor Neurone Disease** (\$2 million).
15. Similar to other Ministry of Health Branches, OHMR's annual priorities and workplan deliverables are negotiated and recommended by the branch's executive team and endorsed through individual annual Performance Agreements at Executive Director and Deputy Secretary levels. Budget setting is undertaken as part of this process.

(ii) The Agency for Clinical Innovation (ACI)

16. The 2008 Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals (**Garling Inquiry**), recommended the creation of a 'Clinical Innovation and Engagement Agency', to engage the dedication of clinicians in designing new, evidence-based models of care.
17. The ACI was established in 2010, building on core work of clinical engagement and clinician-led improvements dating back several decades, including the Greater Metropolitan Transition Taskforce and the Greater Metropolitan Clinical Taskforce.
18. The 2011 Future Arrangements for Governance of NSW Report, among other considerations, detailed further development of the organisations created following the Garling Inquiry, including more effective working relationships with the then, Department of Health (now NSW Ministry of Health), and LHDs.

19. The Future Arrangements for Governance of NSW Report recommendations included a reformed ACI structure, to take on a greater role as the primary agency for engaging clinical service networks and designing and implementing new models of care. The report recommended the transfer of all previous Department of Health clinical services redesign and development functions, to the ACI.
20. In 2012, the clinical network structures were brought together and teams with expertise in clinical engagement, clinical redesign, implementation and evaluation were transferred from the Ministry of Health. In 2018, the ACI was restructured to capitalise on shared knowledge across clinical streams and incorporate teams with expertise in evidence and clinical variation analyses.
21. The ACI is one of the five pillar organisations of NSW Health, providing specialist support to frontline healthcare delivery across NSW.
22. The Determination of Functions dated 21 August 2023 sets out the functions of ACI pursuant to sections 12 and 53 of the *Health Services Act 1997* (Exhibit 48 NSW Health Tranche 2 Consolidated Exhibit List).
23. ACI achieves its role and functions through:
 - a. Engagement and collaboration with consumers, clinicians, agencies, industry and academics, to identify, design, and test innovations in clinical practice;
 - b. Informing clinical decision makers about research evidence, empirical data, experiential evidence, and evidence generated through program evaluation;
 - c. Identifying, assessing and developing promising clinical innovations to pilot and scale across NSW Health, including new models of care, patient pathways, and technologies and therapies;
 - d. Supporting the implementation of innovations which includes strategic reviews, program evaluations, operating model design, simulation modelling, and skills building and coaching of LHD staff;
 - e. Ensuring the clinical guidance and models of care identify and address accessibility and/or priority challenges for health services, with a focus on Aboriginal people and communities, regional and rural communities, and vulnerable populations;

- f. Ensuring the clinical guidance and models of care address unwarranted clinical variation, effectiveness and efficiency of care provided;
 - g. Assessing alternate models that reduce the need for hospitalisation by delivering lower acuity care in community, virtual and home environments.
24. The ACI currently has 200 FTE employees.
25. ACI has two clinical directorates, PRISM (Preserving and Restoring Interventions in Surgery and Medicine) and CATALYST (Care Across the Lifecycle and Society), that lead clinical engagement for the purpose of producing clinical guidance and designing new models of care:
- a. PRISM focuses on acute health crises and the following periods of rehabilitation and support. The streams in PRISM are Surgery and Anaesthesia; Interventional Medicine; Trauma, Pain and Rehabilitation; and Intensive and Urgent Care.
 - b. CATALYST addresses healthcare across patients' lifespans and living environments, and mostly relates to groups of patients who have complex chronic and multiple conditions. Its streams are Child and Family Care; Acute, Aged and End of Life; Chronic and Long-Term Care; and Integrated Care and Aboriginal Health.
 - c. Under the auspices of these two clinical directorates, the ACI manages and funds 40 networks, taskforces and institutes.
26. ACI also has expertise-focused directorates that provide support to the clinical networks, LHDs and SHNs, and Ministry of Health branches in a variety of innovation programs:
- a. The EVIDENCE directorate ensures the availability of sound scientific, empirical and experiential evidence regarding clinical care, change and effectiveness. The directorate's responsibilities include research, evidence synthesis, data analytics, evaluation, audit and feedback functions;
 - b. STEP (System Transformation, Enablement and Patient Partnerships) supports innovation and system transformation and provides expertise to clinical networks and coaching of LHD staff in the design, co-design and implementation of projects;

- c. IDEA (Integrated Digital Enablement Accelerator) accelerates digital enablement across the health system. IDEA includes the Patient Reported Measures Program, Clinician Reported Measures and Virtual Care teams;
 - d. SCOPE (Strategy, Communication and People Engagement) supports consistency in planning, prioritising, communicating, and disseminating the projects and resources created by the ACI.
27. In September 2023, ACI established an internal consultancy function, as an alternative to contracting external management consultancies. The function builds on internal capability and expertise, providing evidence-based support to branches and teams within NSW Health such as literature reviews, data and analytics, gathering and reporting experiential evidence, and evaluation to support system improvement.
28. The key objectives for the ACI in 2023-2024 are set out in the Performance Agreement (Exhibit 49 NSW Health Tranche 2 Consolidated Exhibit List).

(iii) The function of the CIR Division in the Innovation Ecosystem

29. From a strategic planning perspective, the CIR Division plays a central role in delivering the strategy of *Future Health: Guiding the next decade of health care in NSW 2022-2032* (**Future Health**, Exhibit 23 NSW Health Tranche 2 Consolidated Exhibit List). In 2022, the ACI published its latest 3-year strategic plan; and work is currently underway to develop a new strategic plan for Health Research and Innovation in NSW Health, which builds on the NSW Health and Medical Research Strategic Review 2012 (Exhibit 50 and 51 NSW Health Tranche 2 Consolidated Exhibit List).
30. These strategy documents, and the creation of the CIR Division, set a clear and consistent direction – to draw on the enormous potential for innovation across the system, to respond in an agile way to a dynamic and complex environment, and to be ambitious in seeking transformative change in order to provide better, safer and more sustainable care for the people of NSW.
31. The CIR Division actively engages with other pillars and branches within NSW Health, researchers, academic institutions, commercial entities, clinicians and consumers; and operates within a highly complex research and innovation ecosystem. It supports innovation both:
- a. Indirectly, by encouraging a research and innovation culture by fostering partnerships and providing infrastructure such as:

- i. The Clinical Trials Management System (**CTMS**) which enables LHDs to appropriately manage clinical trials, including billing external companies conducting trials in NSW;
 - ii. the Research Ethics Governance Information System (**REGIS**);
 - iii. financial support for independent medical research institutes in NSW (such as the Garvan Institute);
 - iv. centralised support functions in building research, innovation, redesign and implementation capabilities across the system.
 - b. Directly, through:
 - i. short to medium term grants that support research and innovation;
 - ii. targeted implementation programs for statewide programs;
 - iii. participating in research projects;
 - iv. providing content leadership in a range of existing governance forums and programs of work;
 - v. providing key frameworks and evidence products to support a structured and comprehensive response to system-wide issues.
- 32. Research is pivotal in the work of the Division, in a range of ways:
 - a. **Creating** research:
 - i. There are currently 37 externally funded research projects (for example, funded by national bodies such as the National Health and Medical Research Council) that ACI staff are active partners on, with projects receiving more than \$86 million in grant funding;
 - b. **Fostering** research:
 - i. Divisional grant programs that support knowledge generation across the research continuum from basic science to translation into clinical practice - totalling over \$47.7 million;
 - ii. Infrastructure support such as REGIS and CTMS;

- iii. OHMR financial support for research institutes (such as the Garvan Institute) and training programs (such as the Commercialisation Training Program);
 - iv. ACI clinical network participation in advising research groups (21 externally funded projects in past five years provided in-kind support);
 - v. OHMR support for clinical trials.
- c. **Disseminating** research:
- i. publishing work in peer reviewed literature, with ACI staff authoring approximately 200 scientific papers over the past five years;
 - ii. production of a weekly Evidence Digest by the CIU which is distributed to approximately 1100 subscribers;
 - iii. production of tailored evidence briefs to inform clinical and policy decision makers (including 60 in the past year; and over 200 during the COVID-19 pandemic).
- d. **Translating** research:
- i. ACI systematically used the research evidence base in developing over 90 clinical practice guides and models of care over the past five years.
- e. **Using** research:
- i. to inform our methods and frameworks;
 - ii. to identify emerging technologies, identify promising innovations, guide implementation, synthesise information and inform, engage with clinicians and consumers.

(iv) On the role of the Deputy Secretary and Chief Executive of ACI

33. In my role as Deputy Secretary, I provide executive leadership to the CIR Division as a member of the Ministry of Health Executive team. I am responsible for the strategic management of the CIR Division as well as managing its budget and a group of Executive Directors and Directors across the CIR Division.

34. I attend and chair a number of governance and system management committees and forums, both ongoing and time-limited, providing leadership and expertise related to the Research and Innovation portfolio, including:
- a. I chair the Strategic Outcome 5 Steering Committee, which provides guidance for the components of the Future Health Strategy pertaining to the advancement and translation of research and innovation into clinical practice, the development and dissemination of data and information, the enablement of evidence-based healthcare as well as the acceleration of digital investments. A copy of the Strategic Outcome 5 Steering Committee Terms of Reference is Exhibit 52 NSW Health Tranche 2 Consolidated Exhibit List;
 - b. Also within the oversight and delivery of the Future Health Strategy, I chair the Measurement and Intelligence Council, which measures and reports on progress in operationalising Future Health from a system-wide, strategic perspective. A copy of the Measurement and Intelligence Council Terms of Reference is Exhibit 53 NSW Health Tranche 2 Consolidated Exhibit List. To note, the CIR Division executives participate in all Future Health Steering Committees, and executive governance groups;
 - c. I co-chair the NSW Health System Advisory Council, established by the Secretary to provide independent and strategic clinical advice on key priorities and functions of the health system, as well as bringing together valuable links to our clinical engagement structures and senior executive team. The Council is made up of 24 clinicians from across the system, as well as the Ministry of Health Executive team. A copy of the NSW Health System Advisory Council Terms of Reference is Exhibit 54 NSW Health Tranche 2 Consolidated Exhibit List;
 - d. I am a member of the HealthShare NSW (**HealthShare**) Board, a long-term member of the executive steering committee for eHealth NSW (**eHealth**) and sit on the NSW Health System Strategy Group;
 - e. I am co-chair of the recently announced NSW Health Artificial Intelligence Taskforce, an example of a time-limited governance group, established to respond to a system-wide issue, which requires content leadership and expertise, within my remit of research and innovation. The Terms of Reference are currently under finalisation.

35. The dual role of Deputy Secretary for Clinical Innovation and Research and Chief Executive of the ACI is an innovative approach to providing system leadership that spans the continuum of innovation, from downstream research to implementation in real healthcare systems. The role confers full membership within the Ministry of Health Executive team, ensuring that issues of innovation, research and new models of care are appropriately considered in system-wide strategic and key operational matters.
36. In my role of Chief Executive of the ACI, I provide leadership to the organisation and delivering on its functions. I provide strategic leadership to guide the functioning of clinical networks and expert teams to respond to the needs of pillars, LHDs and SHNs, guide statewide programs and engage with academic settings and professional groups. I am responsible for the financial and corporate management of the organisation and in delivering on the yearly performance agreement negotiated with the Secretary of NSW Health. In this role, I also review and endorse new models of care to be published and disseminated across the system, ensuring that they have been developed rigorously, reflecting the state of evidence and best practice, with appropriate consultation and engagement, and are presented in a clear and accessible manner.
37. Interaction with Chief Executives of other pillars and LHDs and SHNs occurs regularly in scheduled quarterly or monthly meetings, Senior Executive Forum meetings, program-focused steering committee meetings, as well as in response to specific or time critical issues that emerge.
38. Internally within ACI, managerial structures have been established to ensure probity and accountability related to the role of the Chief Executive. The organisation benefits from an Audit and Risk Committee, a Finance, People and Performance Executive Committee which includes independent members, and an annual Performance Agreement with the Secretary, NSW Health with appropriate performance review meetings.
39. In terms of governance structures that support innovations and models of care within NSW Health, delivery of key strategic objectives is the responsibility of all entities across the system, with the NSW Ministry of Health acting as the 'system manager', ensuring that the health priorities of the NSW Government are achieved for the communities of NSW. LHDs, agencies, pillars, Specialty Health Networks and statewide services all have distinct roles and responsibilities, and under the oversight of the Ministry of Health, through their executive leadership teams have a role in delivering on the Future Health Strategy. New South Wales is recognised as a highly performing healthcare system in

Australia and its various organisations play complementary roles in pursuing innovations at scale.

40. Lead organisations or branches for delivering on strategic priorities are identified based on their area of expertise and role within the system and are required to engage with other entities across the system. For example:
 - a. Ministry of Health branches ensure alignment with strategic areas such as health policy, industrial relations, workforce planning and policy, and funding;
 - b. The Clinical Excellence Commission (**CEC**) leads programs that relate to safety and quality in healthcare, which includes functions around medications and prescribing;
 - c. The Cancer Institute NSW provides leadership on research and innovation in cancer treatments;
 - d. The Health and Education and Training Institute provides leadership with regards to the development and maintenance of competencies;
 - e. The Bureau of Health Information leads measurement and public reporting of performance measures;
 - f. eHealth harnesses digital technology to deliver patient care; and
 - g. LHDs lead on the practical implication of models of care, through engagement with local clinical and professional groups (for example, Directors of Nursing).
41. Page 15 of the ACI's Strategic Plan 2019-2022 illustrates how the organisation aligns with other parts of the system, and further examples are provided throughout this statement, of the role delineation and collaboration in practice (Exhibit 56 NSW Health Tranche 2 Consolidated Exhibit List).
42. Another example is the role the ACI would have in leading a project on developing a model of care for maternity services and would include advice about prescribing (with input from the CEC); while a report on safe prescribing would be led by the CEC. This way of working ensures expertise and leadership are aligned with strategic objectives – however may sometimes appear to casual observers to be duplicative.

43. Governance structures such as advisory committees streamline coordination where there are shared objectives and where a range of policy and subject matter inputs are critical for success, as detailed in the above example.

C. NEW MODELS OF CARE

44. A **model of care** refers to the way health services are organised and delivered. It outlines best practice care and services for a person, population group or patient cohort as they progress through the stages of a disease, condition, injury or event. It aims to ensure people get the right care, at the right time, from the right team and in the right place. A **new** model of care encompasses a significant change in the way health services are organised or delivered to patients, compared with an existing model. It comprises change in processes, healthcare providers, timeframes or settings within which services are received.
45. Models of care are used to provide clear guidance to clinicians about the evidence-based standards of care that exist, and the best way to deliver them. They are based on research evidence and data, and clinician and consumer experience, and are used to refine healthcare delivery and address unwarranted clinical variation in care. Only a small subset of models of care are mandated by a specific policy directive.
46. To the extent a model of care is implemented into policy, the NSW Health policy is "NSW Health Policies and Other Policy Documents", PD2022_047 (Exhibit 57 NSW Health Tranche 2 Consolidated Exhibit List).

(i) Developing new models of care

47. Fundamental to the ACI's role is the development and implementation of new models of care – the final stage in translating research and evolution of standards of clinical care into clinical practice. The ACI has an evidence-based process for developing a model of care. The relevant statewide frameworks, policies and procedures regarding new models of care are:
 - a. The ACI "Implementation Guide – Putting a model into practice" (Exhibit 58 NSW Health Tranche 2 Consolidated Exhibit List);
 - b. The ACI "Understanding the process to develop a Model of Care" (Exhibit 167 NSW Health Tranche 2 Consolidated Exhibit List). An updated document "Principles of developing models of care" is in the process of being finalised.

48. The ACI website includes details of 90 clinical practice guides and models of care, as well as a broad range of factsheets, toolkits and directories.
49. Within the CIR Division, OHMR also plays a role in model of care development, primarily through its Translational Research Grant Scheme (TRGS). The TRGS is designed to build research capability and accelerate evidence translation within the NSW public health system. It does this by funding staff in the NSW public health system to conduct high impact research that has the potential to be translated into policy and practice, leading to improved patient outcomes, health service delivery and population health and wellbeing. Since the scheme commenced in 2016, \$40.6 million has been awarded to 80 research projects. Of the 80 research projects funded to date, 59 support research into new models of care. The TeleECG model of care is an example of a project, now scaled across Hunter New England LHD, following an initial trial supported through the TRGS program.
50. An example of a new model of care (developed by ACI with the Ministry of Health under the auspices of the NSW Health Genomics Strategy) is in clinical genomics specialty services. Major advances in the field have seen it grow from a boutique subspecialty to a mainstream clinical specialty, with services challenged to keep up with growing patient demand. Other challenges include increasing complexity of cases, inappropriate referrals, resource and staffing constraints, and competing demands for staff such as regulation and administration.
 - a. The ACI Clinical Genetics Network brought together clinicians in the field, including representation from LHDs, SHNs, NSW Health Pathology, Ministry of Health, eHealth, consumers, Centre for Genetics Education, tertiary research institutions, national charity groups such as Genetic Alliance Australia, and national special interest groups such as The Human Genetics Society of Australasia and the Australasian Society of Genetic Counsellors.
 - b. In August 2021, the *Clinical genomics model of care* was published, which guides clinical genomics services to provide equitable access to care for people in NSW, aiming to reduce variation, and improve patient outcomes (Exhibit 60 NSW Health Tranche 2 Consolidated Exhibit List). The model of care was developed using ACI redesign methods to understand the issues impacting on delivery of clinical genomics in NSW from different perspectives, agree on solutions to provide patient care, and find new ways of working that are scalable across NSW. An online ACI companion Toolkit was developed to support health services implement

the model of care, to optimise appointment allocation and management, ensure limited resources can be best used for patients, and support patient-delivered care delivery.

51. Another example of a new model of care currently being implemented across the state is the Emergency Care Access and Treatment (**ECAT**) protocols program. A series of 73 standardised protocols have been produced to facilitate the provision of care by nurses in Emergency Departments (**EDs**) – changing the ‘who’ of care delivery. Nurse-initiated models of care such as ECAT can reduce the time a patient waits for treatment, improve the standard of care and reduce patient length of stay in the ED.
52. The ACI led this work and provided evidence support; multiple clinical engagement groups with over 200 clinicians; the provision of implementation and evaluation support, and coordinated activities with other pillars. This statewide program was co-designed and aims to standardise nurse initiated emergency care, improve patient experience and increase staff satisfaction. It supports metropolitan and rural hospitals to provide consistent care across NSW. The ECAT Protocols are available online at <https://aci.health.nsw.gov.au/ecat>, the NSW Health Policy Directive, *The Use of the Emergency Care Assessment and Treatment (ECAT) Protocols* is Exhibit 61 NSW Health Tranche 2 Consolidated Exhibit List, and a copy of the ECAT evaluation plan overview is Exhibit 62 NSW Health Tranche 2 Consolidated Exhibit List. The evaluation process is scheduled to run over one year following implementation.

(ii) Alternate models of care

53. Aiming to consider models of care more systematically across the system, the ‘**Alternate models of care**’ initiative, led by the ACI, seeks to develop and implement new models of care delivery which support allocative efficiency (changing where funds are invested) and/or technical efficiency (changing how services are delivered). A copy of the CIU brief “Alternate models of providing health care” dated 15 August 2023 is Exhibit 63 NSW Health Tranche 2 Consolidated Exhibit List.
54. Allocative efficiency approaches focus on ‘stopping’ low value services, and reallocating funds to services that are good value. A project emerging from the ACI’s Redesign School exemplifies this. It identified that pathology tests in the Intensive Care Unit (**ICU**) are frequently ordered on a routine basis rather than according to clinical need – resulting in unnecessary testing. Over-testing has documented adverse impacts including on patients, the environment, staff workload and financial cost. A project at four

ICU sites assessed whether interventions such as education, data dashboards and audit and feedback could lead to a decrease in unnecessary pathology testing. It demonstrated a decrease in testing across seven of eight testing categories. The greatest reduction was in arterial blood gases which saw a 31% reduction in tests per bed day. Across all categories, there was an estimated total saving of more than \$900,000. No increase in adverse clinical outcomes was observed as a result of this decrease in unnecessary testing.

55. Other types of allocative efficiency models of care involve swapping or strengthening delivery of services. For example, several elective surgery improvement initiatives were established as a result of an Elective Surgery Action Plan, developed in mid-2020. The initiatives focused on 'swapping' models to adopt enhanced recovery after surgery, prehabilitation, day only surgery and value-based surgery. The day-only surgery work aimed to increase the amount of procedures that are a true day stay case (where evidence is supportive), as well as introducing new models such as same day joint replacement surgery. The value-based surgery work aims to ensure that surgery is performed in alignment with the evidence base about clinical indications and identifying (and discouraging) procedures that are being undertaken where there is no clinical benefit to the patient. A copy of the Clinical Practice Guide "Value-based surgery" dated November 2023 is Exhibit 63 NSW Health Tranche 2 Consolidated Exhibit List.
56. Currently, the ACI is progressing work on updating models of care for rehabilitation and for burns, and developing new models such as the networked spinal cord injury model of care. By way of an illustrative example, the **spinal cord injury networked model of care** offers a way to improve access to specialist services and outcomes for people with spinal cord injury. It is proposed as a hub and spoke model where care will be provided in a specialist spinal unit (hub site) for people with highly complex injury, or a non-specialist hospital (spoke site) supported by access to multidisciplinary specialists via virtual care, for people with less complex care requirements. It aims to address bed-block in specialist unit and acute care facilities, shorten length of stay and reduce complications and readmissions, reduce clinical variation, provide access to inter-disciplinary specialist care for patients in spoke sites.
57. Further along the implementation pipeline, the ACI is actively implementing a menopause services hub and spoke model, the '3ci' model of care for Chronic Obstructive Pulmonary Disease (**COPD**) and Chronic Heart Failure (**CHF**), a digitally enabled model of care for managing indication for surgery and reducing surgical waitlists, and a same-day joint surgery model of care. Another illustrative example is

Same day joint replacement surgery, which is intended to provide an alternative care pathway for a cohort of patients accessing joint replacement surgery. Benefits to the patient include improved patient experience by recovering at home, and it empowers patients towards early mobilisation by engaging them as partners in the care as part of recovery. It also has benefits to the facility and health system relating to efficiencies and costs of care. The ACI is partnering with seven sites on a pilot. This work was informed by early adopters in NSW, and the statewide approach developed in partnership with the NSW Branch of the Australian Orthopaedic Association.

(iii) Reducing Clinical Variation

58. An area of strategic importance for the ACI, and one which often requires the adoption of new, evidence-based, models of care, is reducing unwarranted clinical variation (**UCV**). A copy of a 2019 publication is exhibited to this statement and marked Exhibit 168 NSW Health Tranche 2 Consolidated Exhibit List. Reducing UCV provides a range of benefits:
- a. enhanced access to care when needed;
 - b. more reliable provision of indicated and evidence-based care;
 - c. reduction in wasteful or unnecessary care;
 - d. improved safety of care;
 - e. greater system efficiency;
 - f. and better outcomes for consumers and is central to enhancing value.
59. In 2022, the ACI produced an action plan to integrate efforts to reduce UCV, highlight gaps and opportunities, and engage with clinicians and decision-makers in a coordinated way. Important progress has been made in a number of clinical areas, including:
- a. investigating the difference across LHDs for hysterectomy for heavy menstrual bleeding, with proof-of-concept analyses using linked LUMOS data to understand how primary care affects surgical rates and clinical variation in secondary care. LUMOS is a program linking de-identified data from general practices with other health service data to provide a more comprehensive view of patient pathways;

- b. empirical measurement and review of evidence on approaches shown to work in reducing UCV in spinal cord injury, opioid prescribing, burns, colonoscopy, early planned births, low value surgery;
 - c. development of audit tools and measures for myringotomy (grommets), tonsillectomy, and hernia repair surgery;
 - d. shared decision-making tools to engage consumers in reducing UCV in arthroplasty (knee replacement), surgery for frail older patients, and Aboriginal patients.
60. The UCV work has also been informed by the Cancer Institute's Reporting for Better Cancer Outcomes program which has been instrumental in concentrating complex, low volume surgery such as oesophagectomy and pancreatectomy into a smaller number of hospitals with the requisite expertise.

D. TECHNICAL AND CLINICAL INNOVATION

61. **Clinical Innovation** refers to a new technique, method, process or treatment involving the direct medical treatment or testing of patients. It encompasses the more specific term of **technical innovation**, which is - a new or improved product or organisational process with technological features that are significantly different from what already exists.
62. Relevant NSW Health statewide policies, frameworks, and procedures include:
- a. NSW Health Virtual Care Strategy 2021-2026 (Exhibit 67 NSW Health Tranche 2 Consolidated Exhibit List). I also note the eHealth Strategy for NSW 2016-2026,
 - b. New Health Technologies and Specialised Services Framework (Exhibit 68 NSW Health Tranche 2 Consolidated Exhibit List),
 - c. Research Agreements in NSW Health Organisations (Exhibit 69 NSW Health Tranche 2 Consolidated Exhibit List),
 - d. Human Research Ethics Committees: Standards for Scientific Review of Clinical Trials (Exhibit 70 NSW Health Tranche 2 Consolidated Exhibit List).
63. In addition, the OHMR have a range of guidelines and Assessment criteria, related to programs funded.

(i) **Advanced therapeutics**

64. OHMR's Advanced Therapeutics team supports the development and delivery of clinical innovations, including regenerative medicines, RNA technology, vaccines, next generation antimicrobials and non-animal technologies. Specific examples include:
- a. **Bacteriophage (phage) therapy** - *Lancet Infectious Disease*, a world leading infectious disease journal, reviewed 59 clinical studies between 2000 and 2021, reporting that of 1,904 patients with chronic and drug resistant infections treated with phages, 79% showed improvement, while 87% of the target bacteria were eradicated in 1,461 of the cases.
 - i. NSW was first in the world to demonstrate the safety of intravenous Good Manufacturing Practice phage therapy for severe *Staphylococcus aureus* (case series published in *Nature Microbiology* 2020).
 - ii. NSW leads the world's first fully integrated and nationally networked phage therapeutics service, now being replicated globally, and has ethics approval in place for the world's first national open-label clinical trial.
 - iii. The service's STAMP protocol was published in the *British Medical Journal* in 2022, with an OHMR team member as a co-author. The NSW Government invested \$3.5 million to scale the existing pilot manufacturing facility for three years, increasing output from one run per month to one per week. Each manufacturing run can treat up to 100 patients depending on the pathogen being targeted.
 - iv. OHMR coordinates and Chairs the 'Bacteriophage Therapy Regulation Working Group' for national phage experts, the Therapeutic Goods Administration and the Office of the Gene Technology Regulator. This forum was established to inform and provide expert input into regulatory pathways for Australian phage therapy. Early economic modelling suggests that providing phage therapy to a cohort of 2,461 patients with antimicrobial resistance sepsis in ICU based on current efficacy data would avoid 347 premature hospital deaths and 142 premature post-hospital deaths, reduce hospital stays by 7.6 days per patient, and save an estimated \$27,200 per patient over 3 years. Providing phage therapy to a cohort of 2,573 patients with prosthetic hip or knee infections based

on current efficacy data would avoid 1,899 revision surgeries and 309 premature deaths, resolve function for 397 patients, and save an estimated \$47,700 per patient over 2 years.

- b. **Gene therapy** - NSW has global leadership in the development of viral vector delivery technology, with the first bioengineered Adeno-associated virus (**AAV**) vector to enter clinical development engineered by the Children's Medical Research Institute team in collaboration with Stanford University. A viral vector manufacturing facility is being scaled and relocated to the Westmead Innovation Centre to support the increasing statewide activity in gene therapy and address this global bottleneck in their development.
 - i. OHMR worked with the Sydney Children's Hospitals Network and the Office of the Gene Technology Regulator to streamline gene technology licencing processes and remove the three-month waiting period for approvals, significantly speeding up patient access to gene therapy clinical trials in NSW.
 - ii. OHMR invested in establishing an AAV serology reference laboratory to determine eligibility for patients to receive gene therapies. Previously these tests had to be sent to the United States of America or Europe as there was no local testing capability.
 - iii. In addition, this service supports researchers to pre-screen entire cohorts of patients to rapidly determine eligibility for gene therapy clinical trials and enrol them for these competitive places.

(ii) Virtual and digitally enabled care

- 65. An example of a **technical** innovation is virtual care, which supports technical efficiency through alternate models of care – changing the setting where care is delivered.
 - a. The ACI works in partnership with LHDs, SHNs, pillars, eHealth and the Ministry of Health to help health professionals and consumers to access and use virtual care. In the past 3 years, ACI has supported access and use of telehealth and virtual care with myVirtualCare, with more than 430,000 consultations since go-live.
 - b. Within the virtual care program, the Virtual Allied Health Service (**VAHS**) was established in 2017 and aimed to extend allied health services to those without

local access. Today, it supports equitable healthcare, having broken down barriers of distance and transforming the lives of patients across Western NSW LHD. Patients have more equitable access to dietetics, occupational therapy, speech pathology, physiotherapy and social work services; and reduced waiting times. They actively participate in decision-making, leading to enhanced overall experiences and support. Clinicians coordinate care across multidisciplinary teams with positive engagement from patients and their carers. The reduction in travel time has allowed clinicians to maximise their virtual clinical capacity. From a service perspective, VAHS has increased the efficiency of allied health services, maximised the workforce, and reduced costs associated with travel and patient transfers. It has become a cost-effective model, redistributing full-time equivalents more equitably and offering a person-centred, faster, and more responsive service. In the past year, there have been 187 consults alone in myVirtualCare platform, just one of the platforms used, with an average of 33 minutes per consultation, and 14 clinicians have provided care in this room over the year.

E. IDENTIFYING, ASSESSING, DEVELOPING, AND IMPLEMENTING INNOVATIONS

(i) Identification of new models of care and innovations

66. There are many ways to identify new models of care and innovations, and the CIR Division is taking increased responsibility and an overarching coordinating role in this area. Examples include:
 - a. The Critical Intelligence Unit (**CIU**) performs literature searches to identify potential new models of care and projects. Each week the CIU scans seven key journals (including the British Medical Journal, the Lancet, and the New England Journal of Medicine), runs 8 search strings in the online bibliometric library PubMed for new publications on key areas of innovation (including artificial intelligence and alternate models of care), and reviews websites of 10 international health organisations for reports (including the World Health Organization, the Organization for Economic Cooperation and Development, the United Kingdom National Institute for Health and Care Excellence). Publications that describe innovations in clinical care in NSW are compiled into an Evidence Digest which is emailed to 1100 subscribers each week. The Digest is subsequently reviewed by a clinical panel to identify potential 'game-changers' – highly impactful innovations or models of care the system will need to be aware of and for which it will need to prepare to implement.

- b. Engagement and collaboration with the NSW Health System Advisory Council; with clinical networks, and with international experts through established interpersonal and professional networks and regular meetings with ACI's International Expert Advisory Group.
 - c. OHMR engages with a network of research leaders, who are familiar with the research ecosystem, advise on emerging trends, have strong national and international links, and provide highly insightful opinions and advice.
 - d. OHMR and ACI funded projects once completed are a potential source of innovations for spread and scale. Funding programs include for example the Medical Devices Fund, the Cardiovascular Research Capacity Program, and TRGs.
67. Outside of the CIR Division, the Ministry of Health's New Technology and Specialised Services Committee invites LHDs, networks and pillars to submit new health technology nominations. They are assessed using Health Technology Assessment process that uses explicit and scientifically robust methods to assess the value of using a health technology at different points in its life cycle.
68. The ACI also provides mechanisms to support LHD and frontline identification of emerging innovations, which may be suitable for spread and scale. These include:
- a. The ACI Redesign School supports the development of local innovation at a hospital or service level. Using proven redesign methods, this course teaches frontline staff vital and transferable skills in project and change management, and service improvement sciences. The course enables graduates to undertake improvements and innovations for their health services designing and delivering a better experience for all. Statewide projects that had their genesis in the ACI Redesign School include ECAT, and DeliverEase (which won the Health Innovation award at the NSW Health awards in 2023). Other recent award winners include the Parkinson's Inpatient Experience (Australian Council on Healthcare Standards award and Northern Sydney LHD award). The programs provide lasting skills for further redesign into the future.
 - b. The ACI's Innovation Exchange is a platform for collaboration and sharing of LHD innovations which may be suitable to pilot, spread and scale. From 1 January to 2 November 2023 there were 46,790 page views on the Innovation Exchange. There

are 275 innovation projects that are live, with 29 published in 2023, and 15 currently nearing finalisation.

- c. Most LHDs also produce local models of care and clinical practice guides or tools. Some use an ACI model of care as the basis for their local adaptation; and conversely the ACI scans, retrieves and synthesises local models of care in the development of statewide advice.
69. As well as identifying sources and pathways for emergent ideas, sometimes innovations or new models of care are identified in response to specific policy questions that prompt targeted searching and stakeholder engagement to develop solutions. For example, over the past three years, the ACI was asked to investigate ways to:
- a. tackle surgical wait times;
 - b. improve pain management;
 - c. develop models of care for violence, abuse and neglect;
 - d. manage menopause;
 - e. manage end of life palliative care;
 - f. deliver CAR-T cell therapies;
 - g. introduce same day joint replacement surgery.

A key example here is ACI's work on alternate models of care where all networks considering models of care undertake a deliberate consideration of whether there are appropriate and feasible alternative ways to deliver care.

(ii) Clinical Engagement in new models of care

70. Engagement with clinicians is a critical way the system identifies new models of care and innovation, and this is facilitated through the ACI's networks, taskforces and institutes. These include:
- a. Aboriginal Chronic Conditions,
 - b. Aged Health,
 - c. Anaesthesia Perioperative Care,

- d. Blood and Marrow Transplant and Cellular Therapies,
- e. Brain Injury Rehabilitation,
- f. Burn Injury,
- g. Cardiac,
- h. Chronic Care for Aboriginal People,
- i. Clinical Genetics,
- j. Diabetes and Endocrine,
- k. Drug and Alcohol,
- l. Emergency Care Institute,
- m. End of Life and Palliative Care,
- n. Frailty Taskforce,
- o. Gastroenterology,
- p. Gynaecological Oncology,
- q. Intellectual Disability,
- r. Intensive Care NSW,
- s. Maternity and Neonatal,
- t. Medical Imaging,
- u. Menopause Taskforce,
- v. Mental Health,
- w. Musculoskeletal,
- x. Nutrition,
- y. Ophthalmology,
- z. Paediatric,

- aa. Pain Management,
- bb. Primary Integrated and Community Health,
- cc. Rehabilitation,
- dd. Renal,
- ee. Respiratory,
- ff. Rural Health,
- gg. Spinal Cord Injury Service,
- hh. Stroke,
- ii. Surgical Care,
- jj. Transition Care,
- kk. Trauma and Injury Management,
- ll. Urology,
- mm. Violence, Abuse and Neglect.

71. The networks differ in terms of their size, history, and level of activity. ACI adapted a clinical network Maturity Matrix – a self-assessment tool spanning eight domains of effective networks (for example leadership and facilitation; integrity and vitality; learning and improvement; impact and value) to guide reflection and renewal. Using the matrix and the level of activity in the clinical domain, ACI networks are recast in size and complexity. Additional detail regarding five networks illustrates a range of different configurations.

- a. The **Surgical Care Network** (PRISM directorate) includes the Directors of Surgery (or alternative / equivalent) from all LHDs / SHNs as well as clinical subspecialty representatives, policy leaders, pillar and Ministry of Health representatives. It comprises approximately 30 members and membership is by invitation only. There is also a Community of Practice (with approximately 160 members) which is engaged when broader participation is required.

- b. The **Institute of Trauma and Injury Management (ITIM)**, part of the PRISM directorate) was originally established as a standalone unit but was integrated into the ACI in 2012. All 20 NSW Health trauma services are represented and the current membership is approximately 100. The ITIM operates a number of working groups and an executive committee meets on a quarterly basis to provide oversight. ITIM is supported by an ACI team that includes a Clinical Director, Manager and Project officers. It supports functions for trauma services via a trauma registry, education sessions and research functions.
 - c. The **Maternity and Neonatal Network** (part of the CATALYST directorate) was established in 2022 and has a membership of 778. It has an Executive Committee and a Consumer Reference Group. The Network convenes 2 peak neonatal committees (for Neonate Intensive Care Units and Special Care Nurseries) and supports all other statewide maternity and neonatal clinical committees.
 - d. The **Renal Network** (part of the CATALYST directorate) has approximately 450 members including nursing, medical, allied health academics, consumers and health managers/administrators. Clinicians, managers and consumers can self-register their interest to join. Members participate in working groups and community of practice events to support development and roll out of improvement and transformation initiatives. The network was instrumental in scaling the South Eastern Sydney LHD Renal Supportive Care Model to all LHDs in NSW.
 - e. The **Gastroenterology Network** (part of PRISM directorate) is comprised of interested clinicians and is not representative of all LHDs/SHNs. It has approximately 80 members. Originally established with discrete working groups and a network executive, due to low network activity there are no longer regular meetings. A small advisory group was established during COVID-19 to provide guidance on key matters requiring specialist clinical input. This model persists today, with the network acting more in a reference group capacity, unless and until this needs to change.
72. Clinician engagement is a core function of the networks and the SCOPE directorate within ACI. In the past year, SCOPE has:
- a. Established a co-chair Conversations series as a regular series of events for volunteer co-chairs to hear about other projects from networks, have open

conversations about successes and challenges, and hear from experts on different topics/themes.

- b. Established SharePoint sites for network member-based communications and collaboration.
- c. Renewed the ACI's website so that clinical guidance and models of care are easy to find and easy to navigate (this includes digital format for clinicians that use ACI resources at the point of care).
- d. Employed a digital-first approach that considers clinicians and their user experience prior to developing new clinical guidance so that information is delivered in a format that is most useful.
- e. Redeveloped the Innovation Exchange as an online knowledge sharing platform that hosts local innovation projects that can be adapted to suit other local healthcare challenges without the need to duplicate work that has already been done.
- f. Engaged with 14,200 subscribers to Clinician Connect which delivers the latest e-news and innovations from ACI networks bi-monthly.
- g. Boosted our social media presence to engage clinicians, consumers and subject matter experts on Twitter/X (5,685 followers) and LinkedIn (11,000 followers).

(iii) Consumer Engagement

- 73. ACI also actively engages with consumers. It has 128 consumers formally registered as part of the ACI Consumer Community. They partner across the ACI in an ongoing way. Some are attached only to specific projects or networks, some are involved in multiple projects and networks. The invitation to participate in new opportunities is made available to the community via a classifieds section in a community specific newsletter. This newsletter also keeps the community informed of key project updates, and spotlights consumer successes. The consumers are provided ongoing learning and networking opportunities, with six sessions successfully completed in 2023 and a SharePoint site established to provide appropriate resources.
- 74. Projects and networks partner with consumers in a range of ways:
 - a. ACI has a Patient Partner on staff.

- b. Networks usually have a minimum of two consumers per committee in line with best practice.
- c. ACI uses innovative techniques to gather consumer experiences and insights.
 - i. The **Finding Your Way** shared decision-making model for Aboriginal people used a modified e-Delphi technique (with yarning methods) to identify the model's 10 key capabilities, and an expert panel reached consensus.
 - ii. Working with **Health Consumers NSW**, the ACI crowdsourced data and experience of patients with long COVID to inform the development of the Long COVID Model of Care, in consultation with a clinical expert taskforce.
 - iii. A Nutrition Standards Review used a **community jury** approach to establish consumer preferences and perspectives. The revised standards are due for release in early 2024.
 - iv. The **Partner Ring** is a popular internal community of practice which builds ACI staff capability to engage with consumers. Around 40 sessions have been held with staff; and ACI are exploring how this format can be used in other NSW Health sites. It also has members from HealthShare and CEC.

(iv) Interstate collaborations in models of care and clinical guidance

75. There are a number of other cross-jurisdictional collaborations which focus on networking, as well as sharing clinical guidance development and quality improvement initiatives. Examples include:
- a. The **Paediatric Improvement Collaborative (PIC)** which was established in 2018 as a joint initiative of the ACI, The Royal Children's Hospital Melbourne, Clinical Excellence Queensland and Safer Care Victoria - to reduce unwarranted clinical variation and provide safer and better care for children across the three states. There are 162 PIC guidelines and 800,000 active links from NSW in 2022.
 - b. The **National Surgical Quality Improvement Program (NSQIP)** is a risk adjusted, internationally benchmarked and peer-controlled program to measure and improve the quality of surgical care, which enhances a hospital's ability to

focus on preventable surgical complications. For patients, this results in improved health outcomes and shorter hospital stays. Hospitals benefit from reduced postoperative mortality and complication rates, as well as lower costs of care. In 2015, ACI supported a pilot to introduce NSQIP in NSW in 2015, and it was subsequently expanded as part of a funding partnership with the Ministry of Health. Participating sites form a collaborative to enable sharing of results and quality improvement initiatives which could be adopted across sites. Since then, the collaborative has been expanded to include participating sites in Queensland and more recently, Victoria. This collaborative meets twice per year and provides an opportunity to foster learning and share improvement initiatives across state boundaries.

- c. The **Interjurisdictional Perioperative meeting** is a more informal collaboration aimed to sharing broader improvement initiatives across jurisdictions. It represents an opportunity to foster future partnerships which collaborate on key pieces of work relevant to participating states.
- d. An interstate working group, led by ACI, is developing techniques and standards to **adopt or adapt** evidence-based work that has been done to a high standard in other similar healthcare systems. This reduces duplication of effort and is another route to identify potential new models of care. ACI commissioned Bond University to produce reports on the characteristics of high-quality guidance; and best practice methods to produce them. This information is being used to create evidence-based processes for the assessment of whether guidance is appropriate for adoption or adaptation; and to identify any aspects that require localisation, and will be tested by the interstate group.

(v) Assessing, developing, implementing

- 76. A focus of NSW Health and ACI is to support a pipeline of clinical innovations. That is managing the progression of innovations from pilots, to spreading promising innovations, and scaling demonstrated innovations.
- 77. The ACI Evidence team supports the development of new models of care by:
 - a. rapid synthesis of research evidence, measurement of clinical variation and predictive modelling, and crowdsourcing processes. For example, in the development of a proposed statewide model of care for spinal cord injury, an evidence check identified potential alternate models of care, consultation with the

clinical teams and LHDs established potential options, modelling assessed the potential impacts of the different options on the system and on outcomes, and a preferred option was proposed to the system.

- b. supporting the transition of innovations through the pipeline – identifying the desired outcomes and how they will be measured at the outset; providing rapid evaluations and formative feedback as innovations are implemented; supporting go/no-go decision at transition points with economic evaluation; and reporting on processes and impacts to decision makers. For example, the Telestroke model of care was supported with evidence checks, data analysis and modelling pre-pilot, and rapid evaluation data informed policy makers' decision to progress from pilot to statewide scaling.
78. The ACI Implementation team provides on the ground support to teams of clinicians and managers across NSW, ensuring that local solutions are designed to meet the needs and context of the local environment and community. This approach ensures solutions are effective and sustainable. For example, ACI co-designed the “Gadjigadji: my rehab, my journey” guide, which helps create a culturally safe environment for Aboriginal people in long stay hospital wards.
79. Further, the ACI Centre for HealthCare Redesign supports redesign programs, and provides skills and knowledge for staff across the healthcare system in innovation, redesign, project management, and change management. The Centre offers capability development programs and resources including:
- a. the Graduate Certificate Program ('Redesign School'). Upon completion of the course participants of the program can gain an accredited qualification: Graduate Certificate in Healthcare Redesign. In the last three years, the Graduate Certificate in Clinical Redesign program supported over 50 project teams from across NSW, and more than 800 graduates.
 - b. change management training (Accelerating Implementation Methodology);
 - c. redesign training programs;
 - d. My Health Learning modules and recognition;
 - e. a network of redesign leaders.

80. In addition, ACI supports digital sharing platforms, where clinical networks collate various documents that are not in the public domain but provided to clinicians for the purpose of implementing programs or reducing clinical variation.
81. The ACI collaborates with the CEC to ensure that new models promote safety, with the Health and Education and Training Institute in the development of educational material that support the adoption of new models and with the Ministry of Health and LHDs in providing an appropriate alignment with statewide policies and local processes of care.

(vi) Examples of the pipeline of innovation process

82. An illustrative example of the initiation, assessment and implementation process is provided by the NSW Telestroke Service. The service connects local emergency doctors to specialist stroke physicians via video consultation, and is available 24 hours a day, 7 days a week. The service is a collaboration between the Prince of Wales Hospital, eHealth, ACI and the Ministry of Health. It is based on a successful pilot at Port Macquarie and Coffs Harbour in 2017. It offers a way to deliver time-critical therapies, remove geographical barriers, and improves outcomes for rural stroke patients. Across the state, 23 Telestroke sites have been established. Relevant to ACI:
 - a. ACI led clinical engagement and produced a model of care and education and training materials.
 - b. ACI was involved in the costing processes, implementation management and support at referring sites, and helped establish local governance, stakeholder engagement, and clinical process changes (such as upgrading imaging at sites where necessary).
 - c. An economic evaluation was commissioned by the Strategic Reform and Planning Branch and the Menzies Centre for Health Policy and Economics is currently undertaking an economic evaluation.
83. A further example is the Take Home Naloxone Pilot funded by OHMR. Based on the findings of a pilot, NSW Health made a strategic decision to adapt and scale the model of care across NSW as a priority. Modelling of economic benefits of round 1 of the pilot estimated the intervention saved 4.1 lives, resulting in an economic benefit of \$21 million. In 2019, the Ministry of Health enabled and supported LHDs and SHNs to deliver the NSW Take Home Naloxone Program on a routine basis at publicly funded treatment services in NSW. The program is now being delivered by NSW public health needle and syringe programs and alcohol and other drug services at a participating non-government

organisations and private services across NSW. New agencies are regularly joining the program. Trained and credentialed health and welfare workers at NSW public health needle and syringe programs, alcohol and other drugs services, and at participating non-government organisations and private services, can supply take home naloxone at no cost to consumers, carers, or family members, and provide a brief intervention about how to use the medicine.

84. The Australian Government take home naloxone program subsidises the cost of naloxone medicines supplied in participating community pharmacies across Australia. This program follows on from a successful pilot in NSW, South Australia and Western Australia.
85. Other ACI examples of the implementation of models of care include ICU service model, ICU Exit Block, Leading Better Value Care initiatives, the Health Outcomes and Patient Experience program, Alcohol and Drug Cognitive Enhancement (ACE) program.
 - a. The **intensive care service model** was intended to support eligible units to meet the standards and requirements of a level 4 ICU, reduce variation and improve outcomes. As many level 4 units are located in outer metropolitan, regional and rural areas, the aim was to support access to intensive care services close to home, where it is safe to do so. The ACI partnered with the 14 sites, and their LHDs, to support implementation across an 18-month period. This implementation was funded by ACI out of its Clinical Innovation Program.
 - b. The **ICU exit block project** was intended to support intensive care units to improve patient flow by identifying and implementing local solutions to address exit block (delayed discharges from the ICU due to no available beds outside of the ICU). The reduction of exit block improves ICU capacity to admit critical ill patients, improves patient outcomes and improves experiences for staff, patients and families. The ACI partnered with the Ministry of Health Whole of Health Program to ensure that the approach aligned with whole of facility patient flow processes and systems. The model was piloted at 4 sites, and implemented at 14, before it was interrupted by the COVID-19 Pandemic.
 - c. The **Leading Better Value Care (LBVC) Program** took a value-based health care approach to addressing unwarranted clinical variation in patients with osteoporotic fractures, COPD, bronchiolitis, chronic wounds, renal supportive care, chronic heart failure, hip fracture, diabetes (high risk foot services and inpatient

management). One example of the work undertaken through the program was the development of an innovative decision support app for junior medical officers to improve insulin management for people with diabetes (10,000+ downloads to date). LBVC also worked with eHealth to build electronic medical record solutions to better identify people requiring care; for example, developing an osteoporotic fracture finding tool to identify people who require follow up to prevent a secondary fracture (implemented in 6 districts to date). Further, the glucose management view tool; up to 25% of hospital patients have diabetes and this tool assists clinicians to triage patients to identify who will benefit from additional assessment and management (implemented in 2 districts to date).

- d. The statewide **Health Outcomes and Patient Experience (HOPE)** platform, captures patient reported outcomes. It is a purpose-built IT platform co-designed with consumers, clinicians and managers across NSW in partnership with the ACI, eHealth and the Ministry of Health. In February 2023, HOPE was integrated into the eMR. The next phase is scoping for integration with General Practice desktop systems. The evaluation of HOPE to date has indicated positive changes in practice, increased ability to provide holistic care, being better informed to make relevant referrals, and improved interactions between clinicians. As at 14 January 2024, there were 36,424 active patients and 1,669 active clinicians in HOPE. In addition, 93,158 patient surveys have been completed in HOPE.
- e. The **ACE Program** is a cognitive impairment remediation program intended to support clients in drug and alcohol treatment settings, of whom up to 50% are impacted by cognitive impairment. Cognitive impairment impacts a person's ability to plan, solve problems and make effective decisions. The ACE Program was trialled at 10 sites with more than 500 people – those who completed the full program demonstrated large reduction in rates of cognitive impairment. The ACI worked with a number of partners to support the trial and continues to work with the Ministry of Health on promoting, and providing training on, the resources for LHDs. The work has also been adapted for use with Aboriginal clients, called Yellow Gum Healing.

F. FUNDING AND IMPLEMENTATION

86. NSW Health operates in a complex environment. The governance architecture and funding arrangements reflect the complexity of this broader environment. The NSW Health Budget is \$34.3 billion for 2023/24.

87. At a federal level, Clauses A96 – A101 and Schedule C of the 2020-2025 Addendum to the National Health Reform Agreement (**NHRA**) outline mechanisms to facilitate the exploration and trial of new and innovative approaches to public hospital funding, to improve efficiency and health outcomes. To date NSW is the only jurisdiction to have explored funding for trials through these mechanisms, working with the Commonwealth and the Independent Hospital and Aged Care Pricing Authority.
88. NSW Health will participate in Government led negotiations of the next Addendum to the NHRA, commencing in January 2024.
89. The CIR Division, alongside other Ministry of Health Divisions and pillars, uses its yearly budgetary allocation to fund the various activities that enable the constant assessment of the emerging innovations, and the design and implementation of new models of care.
90. ACI and OHMR receive funding from the Ministry of Health via a traditional salaries and wages and goods and service-based budget build. Escalations for wages are consistent with industrial agreements¹.
91. The annual Performance Agreement sets the ACI budget. The initial ACI budget for 2023-24 was \$34 million.
92. The initial OHMR budget for 2023-24 was \$104.7 million (see paragraph 14 above).
93. The initial budget for the Office of the Deputy Secretary and Critical Intelligence Unit for 2023/4 was \$1,181,325.
94. Current arrangements are effective in supporting innovations and models of care but they have not always been fully integrated and maximised. Current work is seeking to be more systematic in conveying new treatments, techniques and models of care along the innovation pipeline. The system does not have an innovation fund to scale new models and a strong mechanism to embed innovations that have been proven to be good value into business as usual.
95. When an innovation or a new model of care demonstrates strong potential, having gone through design, pilot and spread stages, there are three main routes through which they can be implemented at scale and provided routinely as part as 'business as usual' care:

¹ [42] of statement of Deb Willcox and A/Prof Alfa D'Amato dated 27 November 2023

- a. The first route is one where a Business Case outlining the required funding for implementing the innovation at scale is written and submitted for Government approval. Examples of this include the HOPE patient-reported measures platform, Telestroke, and ECAT. Under this modality, funds are made available for the full duration of a program, often over three years, to support the establishment of central teams and LHD-based support and to fund the operating expenditures and technological uplift required;
 - b. The second route sees the dissemination of new models of care via ACI providing local training and mobilisation of established LHD Redesign Leads and project officers to drive the implementation of the new model of care with existing resources. Connecting with LHD staff promotes some standardisation and efficiency in implementation of the new models while allowing for local context. This model is used when the innovation does not require a significant amount of system redesign or technological uplift and when clinical practice changes are modest and achievable within current processes and organisation of care;
 - c. The third route involves a partnership with external group such as an academic institution, or the reception of research funds, endowments or donations, or when an industry partner funds the rolling out of an innovation, model of care or program.
96. Both the OHMR and the ACI have used these routes to embed innovations and new models of care across the system, most frequently via partnership with other pillar agencies, statewide agencies or LHDs.
97. Structured budgets and New Policy Proposal processes support the delivery of agreed programs and initiatives. However, a project may demonstrate that it is feasible and acceptable and provides value to the system yet at the end of a trial period, there is not always capacity and flexibility in providing funding support for its incorporation into business as usual across LHDs.
98. While implementation plans are carefully developed, the CIR Division has to work closely with partners and external stakeholders to influence mechanisms or 'levers' that support uptake - such as regulation, activity purchasing, performance agreements, workforce instruments, educational requirements.

G. ASSESSING IMPACT AND EVALUATION

99. **Evaluation** refers to the critical assessment of an intervention (for example, innovation, model of care, or policy) to rigorously ascertain whether it fulfils its objectives. NSW Health uses a range of evaluation providers:
- a. ACI has a dedicated evaluation team;
 - b. there are evaluation experts embedded in several other branches of the Ministry of Health
 - c. NSW Treasury guidelines outline clear requirements for economic evaluations (Exhibit 71 NSW Health Tranche 2 Consolidated Exhibit List).
100. OHMR continues to develop and refine an office-wide approach to reporting, monitoring and evaluating the impact of research funding and other initiatives. This includes a Framework to Assess the Impact from Translational Health Research. This method has been developed by the Hunter Medical Research Institute and enables the translation and impact of research to be measured and reported. The OHMR has also had a role in supporting the development of other frameworks to assess the impact from translational health research. An example is the publication “Development of a novel and more holistic approach for assessing impact in health and medical research: the Research Impact Assessment Framework”, and a copy of the abstract is at Exhibit 72 NSW Health Tranche 2 Consolidated Exhibit List.
101. The OHMR has also implemented a program logic model across all its research grant programs that measures impact against five domains: knowledge advancement, capability building, policy and practice, health and community impact, and economic benefit.
102. ACI policies, procedures and frameworks for evaluations are:
- a. Principles for developing clinical guidance (referred to above).
 - b. Understanding the process to develop a Model of Care (referred to above).
 - c. Understanding the Use of Health Economics (Exhibit 74 NSW Health Tranche 2 Consolidated Exhibit List).
103. These documents outline the level and type of evaluation required. Evaluations typically assess impact on patient outcomes and experiences, clinician experiences, and impact

on the system including cost-efficient delivery. The type and focus of evaluations depend on the decision needs along the life cycle of a model of care. Rapid evaluations aim to inform near-term decisions and focus on acceptance, adoption and service use.

104. ACI supports innovations by rigorous and proportionate evaluations. These include:
- a. At the outset: identify intended outcomes early – captured in a program logic for targeted initiatives, compile monitoring and evaluation plans, cost benefit analysis, economic appraisal; business case;
 - b. During implementation: monitor implementation against intended outcomes, rapid evaluation focusing on service delivery and utilisation to inform near-term decision regarding spread, formative evaluation to inform continuous improvement;
 - c. Once established: summative evaluation to inform decisions about whether to continue, expand or stop at intervention.
105. For example, in 2023 ACI commissioned the HOPE Patient Reported Measures (**PRMs**) process evaluation. The process evaluation identified six focus areas to be considered to enhance achievements in the intended outcomes of the program. Recommendations were developed between program partners to address the findings and opportunities identified at the individual, service, and system level in the evaluation. Many of the recommendations are already underway due to the iterative nature of the HOPE/PRMs program (Exhibit 75 NSW Health Tranche 2 Consolidated Exhibit List).
106. Further examples of evaluative work in 2023 includes the development of plans for the large system transformation programs: ECAT and Urgent Care Services.
- a. The evaluation of ECAT will inform continuous improvement of the program as it is being implemented; assess progress in achieving its intended outcomes including reducing time to treatment in the ED and improving the delivery of ED care across the state; and determine what is needed to support sustainability of ECAT protocol use.
 - b. The evaluation of the Urgent Care Service program will inform the implementation of urgent care services as a critical system change to the NSW Health system: first as continuous improvement of the program implementation, second to measure its progress and success against its intended outcomes in particular in terms of providing appropriate and timely care to patients requiring episodic care in settings other than ED; and third to inform how to embed this system change in

the NSW health system at the end of the program, including in terms of financial sustainability.

107. Moving forward, ACI is looking to adopt greater agility in rapid evaluation and more dynamic simulation modelling to better predict impact on systems and outcomes and support implementation decisions.
108. In evaluating clinical innovations, and particularly in evaluating models of care, it is crucial to balance short- and long-term perspectives; and to hold course in order to achieve distal patient outcomes which can often take decades to be fully realised.

H. SUMMARY, CHALLENGES AND OPPORTUNITIES

109. As discussed in this statement, innovation and novel models of care are fundamental to:
 - a. Ensuring safe and effective care is delivered in an evidence-based manner;
 - b. Improving the delivery of care and efficient use of funds;
 - c. Expanding the therapeutic options available to patients and the technological platforms available to clinicians;
 - d. Meeting the needs of populations and addressing unmet needs for care by reducing low value care and increasing use of self-management and alternate models of care;
 - e. Contributing to the economic development of societies through a healthier population and through the growth of relevant industries.
110. Innovation is, by nature, a dynamic process. Whilst the new CIR Division has recently been established, there is a range of new streams of work currently underway, including establishing:
 - a. A more rigorous process for priming, assessing and prioritising innovations and models of care along the innovation pipeline in order to streamline transition to system-wide adoption and ensure that successful pilots are progressed towards statewide implementation and that most statewide programs have gone through a rigorous process of assessment and pilot before significant investments are made;

- b. A portfolio approach to innovation that builds a balanced mix of small and big innovations, high and low risk innovations, those that only tweak current delivery of care and those that are more transformational in nature;
 - c. Prioritising innovations that are potential 'game-changers' with a sound evidence-base and where the future impacts of innovation are likely to be profound - and for those, building an understanding of required system changes that will allow the innovation's potential to be realised – for example through changes to workforce, funding models, regulatory approaches and clinical governance processes.
 - d. More systematic capture, assessment and scale of promising locally emerging innovations or locally developed models of care, to promote their adoption by other LHDs.
 - e. Ensuring evidence-based guidance and models of care can be adopted, adapted or developed in collaboration in partnership with other jurisdictions or regions to reduce the production and maintenance burden and mobilise resources to support implementation.
 - f. Streamlining the integration of early clinical research and biotechnological advances with implementation science methods and appropriate evaluation approaches.
111. While the NSW innovation ecosystem has many strengths built on long-established and stable structures and processes that support components required to progress and embed innovations, there are structural issues that could be addressed to improve the effectiveness of our innovation ecosystem. Looking forward, there is a range of challenges and opportunities in clinical innovation and models of care.
112. Challenges include:
- a. As is the case in many healthcare systems around the world, there remains great variation across the system in adopting many new models of care – often because of highly decentralised decision making at a district, hospital and ward level. There are also instances where models of care differ across the system, not as a result of appropriate tailoring to local context but rather as a consequence of funding models, historical precedence, clinical preferences, professional or behavioural barriers, lack of training, or due to local funding or workforce models.

- b. LHDs and SHNs often work in isolation, developing *de novo* guidance and models of care (instead of adopting and adapting) and establishing their own innovation strategies, rather than contributing to a statewide strategy where LHDs and other place-based innovation hubs such as precincts adopt complementary and synergistic approaches. Conversely, models developed by LHDs are not always brought to the attention of the system. Greater visibility and a stronger collaborative culture; clearer processes to facilitate adopting and adapting insights across districts would be highly advantageous.
- c. A reluctance within local communities and clinical groups to adopt or support innovative models that differ significantly from current practice yet maintain or improve quality (for example, remote monitoring, nurse-led interventions, hub and spoke delivery models); and a related reticence to adopt alternate models of care that shift resources away from more expensive, higher intensity care, or away from low technology services amenable to self-care or automated care (for example, through chatbots), and towards areas of unmet need and better ensure population health coverage.
- d. Lack of integrated data and capacity for modelling or Artificial Intelligence techniques to support assessment of potential innovations with regards to their impact on population health, care trajectories, future workforce, and economic impacts or benefits (activity, staff mix, goods and services, consumables, avoided costs).
- e. Difficulties balancing different system performance objectives in the assessment of potential innovations (for example, valuing equity alongside efficiency). Similarly, it is challenging to balance short- and long-term objectives. Pressure for rapid results means that funding and evaluation timelines are short – with insufficient time for system changes to be embedded and health and economic benefits fully realised. We need realistic timeframes but an agility to respond to signals from evaluation as we pursue better patient outcomes or efficiencies.
- f. Challenges remain in taking projects that were successfully piloted into clinical practice across districts, if there is a reluctance to incorporate into business as usual; and if there is limited access to aligned and effective training, data, funding, structures and policy-based levers for change. Procurement practices can prevent local innovations from being taken to a stage where they are commercially viable.

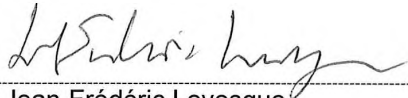
- g. Lack of a substantial and agile funding to attract industry and investors into the NSW life-science sectors in an agile and timely way (in contrast there is a \$2 billion fund established by the Victorian Government).

113. As set out above, the creation of the new Division of CIR in February 2023, integrating ACI and OHMR, provides a greater **opportunity** to bolster clinical innovation and research along the continuum from basic science to system transformation. There are also opportunities for greater linkages between the delivery arm of NSW Health and the innovation arm, however to date there is no jurisdiction who has fully achieved this. More specific opportunities include:

- a. Creating or better leveraging existing funding models relating to the NHRA with the Commonwealth to ensure that innovative models can be implemented in a sustainable way without activity-based funding acting as a barrier. Blended reimbursement approaches would better support innovation. The current narrow definition of 'Hospital Services' can exclude innovative technologies, services and service delivery methods from Commonwealth funding.
- b. Stronger coordination in the production of models of care and a reduction in the duplication of work across districts and jurisdictions would enable more targeted efforts and investment of limited funds in supporting the adoption of new models of care instead of duplicating the production of models at various levels.
- c. Better leveraging of digital technologies - including artificial intelligence, virtual care, remote monitoring and electronic clinical quality registries. Profound change will be possible both in the development of innovation and reduction of unwarranted clinical variation; and in back-office functions, with greater automation of clinical records.
- d. Reduced fragmentation will harmonise the innovation pipeline across districts and better reconcile local innovation with centralised support and enhancement. This relies on strengthening interpersonal relationships with Chief Executives of LHDs and SHNs.
- e. A greater coordination at a national level of adopt and adapt in terms of clinical guidance would deliver important efficiencies and standardise care. Within NSW Health, there is scope for application of the principles to models of care – rationalising the vast numbers of local models to a discrete set of models appropriate for different geographical contexts.

- f. Taking on a proactive rather than reactive role in the development of innovations and in translating those innovations into models of care across the state. For example, in identifying game-changers, there is opportunity to act on emerging literature and then engage with clinical groups to trigger further consideration, evidence work, and identification of system implications, and potential costs and benefits. This has its own challenges due to the sheer volume of emerging research, but has significant potential.
 - g. Bolstering the internal consultancy model at ACI, given the expertise of ACI in reviewing and evaluating clinical and service delivery issues.
 - h. Streamlining decision-making in government with improved links with Enterprise, Investment and Trade for advanced therapeutics, and the Australian Commission on Safety and Quality in Health Care; and developing ways to progress innovation work that relates to industry, commerce, trade, life sciences, and education when priorities across different clusters do not align.
 - i. Meaningful change in reducing unwarranted variation across clinical areas is achievable (as illustrated in the UK by the Get It Right First Time (**GIRFT**) program). The evidence base internationally highlights it as a complex and multifaceted process spanning:
 - i. Robust measurement of variation that moves beyond utilisation metrics to more nuanced data analyses to include risk adjustment and reflect patient outcomes;
 - ii. Consideration of available evidence, clinical and organisational constraints, and patient and clinician preferences, in assessing whether clinical variation is warranted or unwarranted;
 - iii. Approaches to identify appropriate levers for change to address unwarranted variation and its underlying causes in different contexts;
 - iv. Effective change management, implementation and evaluation – developing stronger clinical leadership across the system in order to reduce clinical variation in care across disciplines and geographies.
114. Overall, the CIR Division has been established on strong foundations. Staff are highly expert and motivated to deliver innovations and models of care that deliver better health to the people of NSW. Processes are evidence-based and clear. Communication and

engagement channels are well established and well utilised. This does not mean however that there is no room for improvement – and my statement has identified a number of ways we are actively seeking to strengthen our work – and potential new areas for reform and change - so that we can achieve even greater transformation and health for all.



Jean-Frédéric Levesque

30/01/2024

Date



Witness: Lucy Tillotson

30/01/2024

Date