Monash Health

Clinicians, Consumers, Evidence
Centre for Clinical Effectiveness

Rapid Review

Measuring Performance of World Leading Clinical Services

Background

To assist in the evaluation of Monash Health's strategic plan a definition of 'world leading clinical' services is required as well as a description of robust criteria to measure performance against.

Review Question

What criteria do world leading health services (in the 7 areas of world leading care at Monash Health), measure with respect to performance?

With specific attention to domains of:

- Clinical Performance
- Integration between research and clinical work platforms
- Research/strategic plan in place (to progress performance towards world leading care)
- Academic vs clinical workforce tracking -– % mix of academic/clinical
- No. of PHD students

Methods

In order to answer this question, three literature search approaches were undertaken.

1. Clinical Performance measures/criteria of hospitals (academic, teaching or university) in each type of service (as outlined above) or as an 'Overall service' perspective
2. Performance measures/criteria of academic health science centres (with respect to each type of service as outlined above)
3. Performance/criteria of specific high performing hospitals (with respect to each type of service as outlined above)

Key documents were selected and reported, this included most current (published 2015-2020), with preference given to reports (or reviews) of synthesised evidence.

Summary of findings

This rapid review presents information relevant to world leading health services, how they might attain their world leading status, strategic principles world leading hospitals apply.

The report describes performance measures for overall services were identified and also matched to domains of interest. Clinical performance measures were identified by services. A table of results is presented below. Although this is not a comprehensive list. Finally, four resources are summarised with a focus on the success of research and workforce output of hospitals.

Detail of definitions of performance criteria are embedded (via hyperlinks) within some of the documents included. This has been done to enable a succinct summary

Identified world leading hospitals

One identified article undertook research to identify the **world's best hospitals** based on recommendations from medical experts, results from patient surveys and medical KPIs. Our focused search of these top 10 hospitals identified 3 strategic plans or similar, Table 1.

The focus is on research outputs and aspects of research translation to practice, such as, building capability and a workforce to undertake research translation and the development of partnerships that promote the translation process between academia and health service partners are described.

Table 1. Strategic Plans of World Leading Hospitals

STRATEGIC PLANS

Mayo Clinic 2019 – An inside look 2019

- Innovation from within
- Teamwork everywhere – patient care, research and education
- Highly Specialised care – Cancer, Cardiovascular, Neurology, Transplant
- Building the future of medicine - Strategic investments in capital projects provide world-class facilities, equipment and technology
- Research to benefit all - Research is critical to advancing the practice of medicine. Mayo Clinic translates scientific discoveries into therapies not just for patients but for people everywhere
- Researchers finding answers – 766 full time physicians, 4027 total research personnel
- Leading in education - an unparalleled learning experience where current and future physician leaders and researchers learn to deliver the highest-quality patient care and advance the science of medicine

Massachusetts General Hospital Institute Strategic Priorities 2018 – 2022

- Offer cutting-edge, accessible degree programs, inter-professional in their design, that prepare the next generation to be global leaders in the health professions and health sciences.
    - Attract the best students – invest in branding campaign and other marketing efforts, seek to make programs financially attainable (e.g., scholarships, competency based programs)
    - Enhance student supports – wellness, centralized academic supports, at-risk populations
    - Attract/develop outstanding and diverse faculty; support with cutting-edge curricula, innovative teaching approaches, and faculty development
    - Further build Inter-professional Education (IPE) competency – including developing a plan for restructuring the position of IPE within the IHP, further embedding IPE into all programs, as well as creating more hands-on student experiences
    - Continue to assess programs regularly to ensure quality, modify and/or launch new degree programs that will drive improvements in health care
- Establish the Institute as a leader in research and scholarship, developing knowledge on improving health, the delivery and outcomes of IPE and in other key areas, to advance the health professions.
    - Provide support for faculty as they engage in scholarship
    - Continue to expand infrastructure to support scholarship of all faculty – space, mentoring programs, pilot funds, research administration
    - Ensure success of research faculty – backfill positions if attrition, financial and mentorship support for junior faculty with research interests, research lab space
    - Identify themes/centres of excellence that leverage core IHP assets (i.e., IPC, Partners) and provide opportunities for faculty & students to engage – IPE a priority, others TBD
    - Develop IPE research agenda validating outcomes, disseminating findings, and leveraging IMPACT Practice Centre as a research tool
- Develop more collaborative relationships with our academic and research partners and the Boston community that support education and faculty scholarship, while also improving community health outcomes, with Impact Practice at its centre.
    - Continue to deepen relationships with all Partners organizations
    - Develop true partnerships with clinical placement sites to ensure highest quality experience for students
    - Grow mutually beneficial relationships with Harvard and other local academic institutions – expand IPE collaboration, broaden and deepen research partnerships
    - Deepen relationship with local community

Johns Hopkins Strategic Plan 2023

- Push the boundaries of science and education
    - Greater participation in meaningful clinical trials
    - Increased education and research funding
    - Increased research collaboration and productivity
    - Increased training in ambulatory venues
    - New educational tracks
- Aim for precision in everything we do
    - Additional Precision Medicine Centres of Excellence
    - Increased data driven decision-making
    - Increased engagement and satisfaction
    - Workforce plans across JHM

What constitutes a high performing hospital?

From the literature there is a common taxonomy of hospital performance indicators used:

- Efficiency/utilization **(Workforce tracking)**
- Financial **(Cost impacts)**
- Effectiveness **(Clinical performance)**

Table 2. Summary of hospital performance indicators

Ahluwalia et al (2017) undertook a systematic review to determine if there is a commonly used, agreed-on definition of what constitutes a "high performing" health care delivery system.

They found no consistent definition of a high-performing health care system or organization.

High performance was variably defined across different dimensions, including:

- Quality (**Clinical performance**)
- Cost
- Access (**Clinical performance**)
- Equity (**Clinical performance**)
- Patient experience (**Clinical performance**) and,
- Patient safety (**Clinical performance**).

Most articles used more than one dimension to define high performance, but only five used five or more dimensions. The most commonly paired dimensions were quality and cost.

In another systematic review, Taylor et al (2015) looked to show methods used to identify high performing hospitals, the factors associated with high performers, and practical strategies for improvement. A range of process, output, outcome and other indicators were used to identify high performing hospitals.

They identified the following 7 themes representing factors associated with high performance:

- Positive organisational culture
- Receptive and responsive senior management
- Effective performance monitoring (**Clinical performance**)
- Building and maintaining a proficient workforce (**Workforce tracking**)
- Effective leaders across the organisation
- Expertise-driven practice
- Interdisciplinary teamwork

A systematic synthesis of evidence relating to hospital performance indicators was conducted by Pourmohammadi et al (2018). The final model included efficiency/productivity, effectiveness and financial themes.

- The efficiency /productivity sub-themes (**Workforce tracking)** incorporated human resources indicators, hospital beds, costs, operating room productivity, emergency rooms, ICU, radiology, labs, technology and equipment productivity.
    - Other sub-themes relate to general indicators such as human resources, hospital beds, costs, operating room productivity, emergency rooms, ICU, radiology, laboratory, technology and facilities productivity. Efficiency indicators are the number of human resources, bed occupancy rate, length of stay, utilization rate of the existing technologies, and the rate of drug prescription.
- Financial themes included profit, revenue, cash flow, cost, investment, assets, debt and liquidity.
- Effectiveness theme (**Clinical performance**) included indicators categorized in terms of access (equity), safety, quality and responsiveness.
- The accountability indicators were classified into patient-centeredness, staff orientation, and social responsibility. Staff orientation included staff burnout, absenteeism, overtime worked, satisfaction with working environment, clearly defined responsibilities, average remuneration, diversity, working hours, frequency of night duty/shift work, position occupied, average experience in current department, personnel safety, number of work-related injuries, paid leave, number of staff per bed, continuous education for health professionals, number of training hours against total number of working hours, training budget against total budget dedicated to staff and vacancy.

Clinical performance measures of specific services

Clinical Performance Measures from top hospitals for specific domains were identified from two sources.

1. Massachusetts General Hospital reported performance measures for Maternity, Cardiovascular, Stroke and Pneumonia
2. Cleveland Clinic present performance measures across all campuses for Cardiovascular, Stroke and Pneumonia and Patient Safety.

Table 3 outlines specific performance measures by services identified in our search.

Table 3. Service Specific Performance Measures	
Maternity Standardized outcome measures for pregnancy and childbirth	An interdisciplinary and international Working Group was assembled. Existing literature and current measurement initiatives were reviewed. Serial guided discussions and validation surveys provided consumer input. A series of nine teleconferences, incorporating a modified Delphi process, were held to reach consensus on the proposed Standard Set. 24 outcome measures to evaluate care during pregnancy and up to 6 months postpartum. These include clinical outcomes such as maternal and neonatal mortality and morbidity, stillbirth, preterm birth, birth injury and patient-reported outcome measures (PROMs) that assess health-related quality of life (HRQoL), mental health, mother-infant bonding, confidence and success with breastfeeding, incontinence, and satisfaction with care and birth experience. To support analysis of these outcome measures, pertinent baseline characteristics and risk factor metrics were also defined.
Leapfrog performance indicators	1. Cesarean Section rates (for nulliparous, term, singleton, vertex births) set at 24% 2. Early elective delivery rate 3. Episiotomy rates
Cancer	Vast area of information for each different cancer: • Canada • England • Haematological
Perinatal	https://www.jointcommission.org/measurement/measures/perinatal-care/
Cardiac	https://www.jointcommission.org/measurement/measures/cardiac-care/
Stroke	https://www.jointcommission.org/measurement/measures/stroke/
Clot Retrieval Service	VIC guideline NSW Guideline
Clot retrieval (UK)	https://pn.bmj.com/content/practneurol/early/2017/06/30/practneurol-2017-001685.full.pdf see model of service – “drip and ship’ (initial transfer to a local stroke centre for diagnosis and intravenous thrombolysis, followed by rapid transfer to a specialist thrombectomy centre) and ‘mothership’ (transfer immediately to a specialist comprehensive stroke centre able to undertake thrombectomy and other required neuroscience support services).” Page 261 NICE Guidance Mechanical thrombectomy for acute ischaemic stroke: an implementation guide for the UK - see operational requirements and impact p63 UK Clinical Commissioning Policy: Mechanical thrombectomy for acute ischaemic stroke (all ages)
Mental Health	**Summary of Key Performance Indicators** The Key Performance Indicators (MHS KPI’s) for Australian Public Mental Health Services have been developed to improve accountability and transparency and act as a guide to inform decision making. A summary of the latest MHS KPI indicator data is provided in the interactive figure below. More data is available in the detailed interactive figures for each MHS KPI. Further information on these KPI’s can be found in the Mental Health Indicator library.

Research and workforce performance

Caminiti et al (2015) conducted a literature analysis to determine how best to assess research performance. Table 4 outlines the indicators for the quantification of **research activity and attributable values.**

Table 4. Research activity indicators

Indicator	Related criteria
Grants	• Obtained competitively • Referring to all or part of the year in question
Publications	• Listed in ISI Web of knowledge (peer-reviewed) • Published in the year in question • Abstracts are excluded
PhD Students/External collaborators	• Financed by research grants not obtained in the framework of competitive programs • Supervisor during all or part of the year in question
Projects	• Not financed with funds from competitive Programs • Starting in the year in question • Principal Investigator
Patent filing	• Registration in the year in question
Training in the field of research methodology	• Documented attendance in the year in question
Research proposals	Submitted to competitive programs but not awarded funding in the year in question
Member of committee for guideline production	Documented participation in the year in question
Teaching activity on own research	Documented in the year in question
Serving as peer-reviewer (of grants and papers)	Documented in the year in question
Abstracts, articles, book chapters, etc.	• Not peer-reviewed • Published and retrievable in the year in question
Article submission to peer-reviewed journals	• Not accepted for publication in the year in question • Documented

Similarly the Canadian Institute of Health Research in their strategic plan for 2018-2019 provide a table of expected outcomes and performance indicators related to the promotion of excellence, creativity and breadth in health research; and to mobilize health research for transformation and impact. This list is exhaustive and can be found on page 34 of the report.

Success in the area of research output is also outlined by the Victorian Comprehensive Cancer Centre and Sydney Health Partners. A summary of their success measures are outlined in Table 5.

Table 5. Measures of success for research and workforce output

The Victorian Comprehensive Cancer Centre (VCCC) is an alliance of 10 leading research, clinical and academic institutions with a shared commitment to saving lives through the integration of cancer research, education and patient care. They use the following measures of success for research related outcomes.

Key measures of success for Research and Education Lead Program	*Key measures of success for Building connectivity*	*Key measures of success for Nursing Research Capabilities*	*Key measures of success for Building analytical capability for data driven research*
• measures of engagement • impact of research meetings and educational activities • measures of consensus on strategic direction and • important clinical challenges	• establishment of active and engaged groups within the VCCC partners • measures of engagement such as numbers of meetings/ activities and numbers of participants	• measures of engagement including numbers of participants in the various activities of the hub • numbers of nurses taking up activity-based research training	• establishment of a useful and active data-driven research hub that facilitates health services research • growth in collaborative and cross-disciplinary health

• numbers and impact of collaborative activities • measures of practice change	• number of groups that achieve the goals or outcomes that they define • awareness of the value and utility of the connecting role of the VCCC, evidenced by requests for assistance with connectivity	programs and bringing forward new ideas and projects • growth overall of nurse-led projects of all types, funded and published cross-institutional collaborative programs, and clinical impact on patients experience and outcomes	services research activity and impact numbers of new clinical datasets and registries contributed to the platform

Sydney Health Partners is an advanced health research and translation centre, recognised as a world leader in research and the translation of evidence into excellent patient care. Their remit covers streams of work in Cancer, Cardiovascular, Infection and Immunity, Liver, Mental Health, Neuroscience, Renal, Musculoskeletal and Respiratory.

Their current priorities are measures based on the following criteria:

Better Care

- What health services (e.g., procedures, preventative measures, treatments or devices) has the centre developed, tested, implemented and scaled-up, or eliminated, to deliver better care for patients?

Platforms and Systems

- What platforms or systems has the centre developed to support improved health services?

Meeting Catchment Needs

- How is the centre meeting the needs of its population, including vulnerable groups?

End User Involvement

- How are end-users, particularly consumers and clinicians, setting research directions or otherwise actively involved in closing the loop between clinical practice and research?

Workforce

- How is the centre building workforce capacity and capabilities in research and translation to ensure health professionals have access to evidence-based education and training and are contributing to health research?

Measures/metrics

- Number of research active health staff; total funding for health and medical research in each partner health service; number of translational research projects in each partner health service; number of attendees at SHP's Implementation Science Symposium

Partner Contribution

- How are the partners of the centre contributing to its operation?

Clinical Trials

- Have you improved processes (e.g. ethics and/or governance arrangements) so that your patients can access clinical trials more easily and/or sooner?

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