Australian Government

National Health and Medical Research Council

NHMRC

NHMRC accredited Advanced Health Research and Translation Centre

Monash Partners

NHMRC Progress Report

June 2019

Monash Partners

ACADEMIC HEALTH SCIENCE CENTRE

Connecting researchers, clinicians and the community to innovate for better health

Monash Partners Academic Health Science Centre

Question 1: 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?

Strategic planning: Monash Partners health services care for 2.5 million Victorians across Alfred, Monash, Cabrini, Epworth, Eastern and Peninsula Health, supported by Monash University, Burnet, Hudson and Baker Heart and Diabetes Institutes. Our strategic plan (Figure 1), guides our research, education and health service integration and defines our shared purpose to *'connect researchers, clinicians and the community to innovate for better health'*. Strategic priorities include i) Data-driven healthcare improvement; ii) Leading clinical theme flagships; iii) Health services research and implementation; and iv) Clinician driven innovation. Our strategic research and evidence informed health services are driven by health partner and community needs, are clinician led and community co-designed and focus on research to impact.

Health service advances include: evidence based co-designed models of care in comorbid chronic disease implemented and scaled, implementing guidelines in antenatal care among vulnerable groups, reducing variation in care in cancer via clinical quality registries, integration of acute and primary care, improved transition from hospital care and many others. Our clinical innovation platform is developing new diagnostic tools, surgical equipment and medical devices through an established innovation pathway. Procedures have been implemented to streamline ethics and governance and simplify health care improvement quality assurance activities.

Measures/metrics of success:

- Number of projects/initiatives to improve clinical care (40)
- Number of new models of care implemented (8)
- Number of projects/models of care scaled and embedded to date (3)

Figure 1: Monash Partners strategic plan

Case study 1

A large scale approach to improving lung cancer care and health outcomes

Lead: Professor John Zalcberg

Challenge/problem: Lung cancer is Australia's biggest cancer killer. With increasingly expensive therapies, particularly for advanced disease, 5-year survival still languishes around 15%, and those living with the disease often experience considerable suffering. The Lung Cancer Optimal Cancer Care pathway provides a framework to guide best practice, improve care quality, reduce variation in management and outcomes for individuals and institutions, however adherence is highly variable. Many patients are never discussed at a multidisciplinary meeting, some wait too long for surgery, many do not receive recommended chemotherapy post-surgery and few are screened or receive supportive care or management for psychosocial distress. Variations in care can reduce prognosis and quality of life. Significant improvements can be made by benchmarking and reporting performance. An established clinical quality registry (CQR) for lung cancer in Victoria has enormous potential to increase the quality of procedures and treatment for all patients with lung cancer in Victoria and nationally as the CQR expands to other States.

Approach/response: The Victorian Lung Cancer Registry (VLCR) is a CQR established in 2012. It actively engages clinicians, patients and health service administrators, and systematically gathers treatment and outcome data to provide regular and timely benchmarked performance reports to health services. The power and cost-efficiency of CQR increases with population coverage. Increased coverage of lung cancer patients in Victoria was achieved by engaging clinicians and health services and establishing new sites and principal investigators to participate in data collection to assess care; upgrading the database to support expanded site coverage including linking with Hospital Information Services; and providing feedback to stakeholders through benchmarked, quality indicator reports.

Significance: This project is driving better care in lung cancer by recording and reporting on time to diagnosis, time to treatment and treatments (Table 1). In Australia and internationally, CQR's have reduced variation, increasing adherence with recommendations and driving quality improvement.

Reach: Through MRFF Monash Partners funding and support, the VLCR expanded from 50% to 90% of all newly diagnosed lung cancer cases registered in Victoria. The VLCR now has an additional 26 participating sites including many new regional sites, with new site principal investigators and new data collectors employed and trained. The database has been upgraded to accommodate expansion and now holds diagnostic and treatment data for over 8,500 lung cancer patients. This is providing evidence of the quality of care for people affected by lung cancer. Evidence of influence on policy and practice is noted below in the pathway to impact (Table 1).

Table 1: Pathway to impact

Activities	Outputs/ Outcomes	Impact	Scaled and sustained
Start 2017, Project start-up; new PIs; recruit/train staff; data analysis; feedback including variance.	Ethics approved; new sites; database adapted; data collection; site feedback. Outcomes Project completed; 90% new diagnosed lung cancer patients on CQR; data collectors recruited/ trained; database upgraded; quality indicator reports disseminated.	Variations in timelines, quality of care, and adherence with Optimal Care Pathway identified; 11 new participating sites; successful research on targeted therapies, and other areas; review of new lung cancer treatments, evaluation of the pre and post-implementation phases of the Victorian Lung Cancer Service Redesign Project, with increases in multidisciplinary meetings.	Expansion to 90% new lung cancer cases in Victoria with diagnostic and treatment data for over 7500 lung cancer patients. Informed the Integrated Cancer Services Summit in gaps and policy development. New strategies for data collection at lower cost and improving data quality.

Question 2: Platforms and Systems

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

Strategy: Monash Partners has established seven cross cutting enabling Platforms (Figure 2):

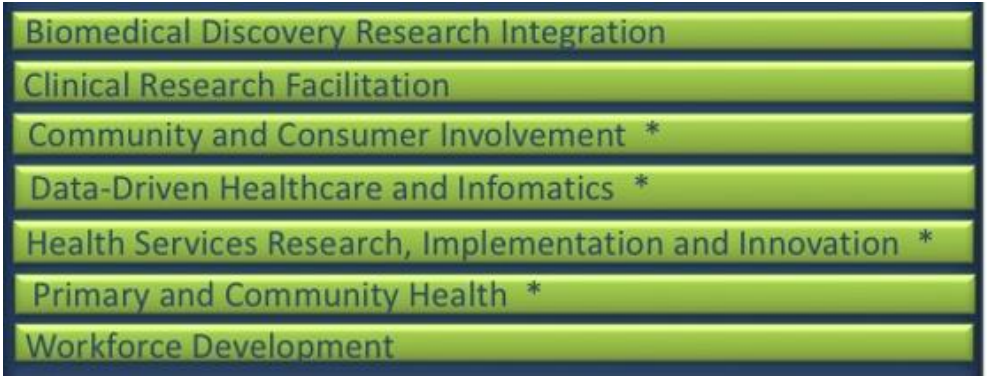
- Integration of biomedical discovery research into clinical research and care
- Clinical research facilitation to improve the systems, processes and quality of clinical research (see Table 2)
- Consumer and community involvement (CCI) - research and evidence synthesis on needs, processes and frameworks in CCI in research and healthcare, in partnership with AHRA and inter/national lead agencies
- Data-driven healthcare improvement (DDHCI) supporting a Learning Health System via formation of a virtual data hub, data integration processes, technologies and exemplars and workforce capacity building
- Health services research and implementation activity and capacity building to improve healthcare
- Primary and community health – engagement, priority setting, capacity building, and integration
- Workforce development- across all platforms targeting consumers, health professionals and researchers

Process and links to AHRA: Each platform has a lead and steering committee across partners that meets regularly with our data, CCI, health services research, and clinical research platforms leveraging AHRA national initiatives, funded via our MRFF funds. National priorities have been established and MP has a lead AHRA role in data driven health care improvement.

Measures/metrics of success:

- Number of workforce capacity programs (8)
- Number of staff trained across workforce development programs (2093)
- Number of collaborative data projects across partners and Centres (20)

Figure 2: Monash Partners enabling platforms



Biomedical Discovery Research Integration
Clinical Research Facilitation
Community and Consumer Involvement *
Data-Driven Healthcare and Infomatics *
Health Services Research, Implementation and Innovation *
Primary and Community Health *
Workforce Development

Table 2: Centralised ethics/governance with efficiency and streamlining

Number of processes, procedures streamlined or eliminated		
Simplifying forms and processes	Before	After
Number of local resource centre declarations required to conduct a multi-site project across 6 health services	36	6
Single site ethics application forms aligned to national HREA forms	6	2
Number of HRECs reviewing within the partnership multi-site projects	5	2
Bi-party and multi-party Research Collaboration agreement with guaranteed 5 business day turn around for sign offs	6	1
Policy		
Good Clinical Practice Training policy	6	1
Standardised Safety reporting policy	6	1
Timelines		
Turnaround timeline for Research collaboration agreement	undefined	5 business days

Case Study 2

Data-driven health care improvement

Challenge/problem: Major barriers to the use of health data to improve patient outcomes include limited health professional data literacy, ad hoc data capture and poor data quality, integration and linkage, with clinicians unable to access routinely collected data to improve clinical care. MP's strategic priority is data driven healthcare improvement. The purpose of the MP data platform is to 'improve health outcomes across our community, through data-driven innovation and care'.

Approach/response: Key initiatives of the MP Data platform, for which we are an AHRA lead on include progressing national AHRA data priority areas a) developing health learning system data hubs, b) integration of large data sets for research and quality improvement c) workforce development. MP funds a project manager to co-ordinate DDHCI activities across MP and nationally on behalf of AHRA. This role is vital for collaboration, ensuring activities and people are linked, sharing learnings and avoiding duplication and coordinating across our partners and AHRA Centres.

a) **Learning Health System data hubs**: i) Systematic literature review on data hub models completed; ii) qualitative research and engagement with international agencies including the Farr Institute/ Health Data UK and ICIS Canada; iii) mapping of national activity/approaches and partnership across Sydney Health Partners (SHP), Health Translation SA and MP in co-designed data hubs.

b) **Data integration:** i) funded integration activities with PHNs and Outcomes Health and priority setting and partnership with primary care data agencies; ii) working with a MACH led project on primary care linkage and quality; iii) funded exemplar projects in clinical quality registries, maternity (with SHP), cancer (with MACH), cardiac, ambulance and critical care; iv) streamlining activities in data governance including progressing Sydney Partners initiated data sharing accord; iv) partnering in shared and tailored infrastructure with Monash University (e.g. UK secure SeRP platform).

c) **Workforce capacity building:** i) Establishing priorities and co-designing content for education and workforce development (informed Sydney Health Partners led Massive open online course (MOOC); ii) Resource development: improving data literacy through the free national MOOC "*Using clinical health data for better healthcare*, available across Australia (MOOC link); a web resource developed with federal agencies targeting clinicians (web resources); access to Certified Health Informatician Australasia (CHIA) certification with mentoring and support iii) Building the Digital health/ clinical workforce via early to mid-career MP data fellowships and PhD students in our $2.5M partner funded Digital and Data-Driven Innovation in Healthcare Graduate Research Industry Partnership program (GRIP) on healthcare identified problems.

Table 3 Data-driven health care improvement - Pathway to impact

Activities started 2018	Outputs/ Outcomes	Impact	Scaled and sustained
Establish workforce development program; Employ data fellows; Establish GRIP.	Data literacy Massive Open Online Course Data Fellows program Monash Partners Industry PhD GRIP program	Health workforce with greater health data and digital health literacy and capacity	Online course (MOOC) available Australia wide at no charge Data fellows program funded and integrated over three years GRIP model established and funded by partners over three years

Question 3: Meeting Catchment Needs

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

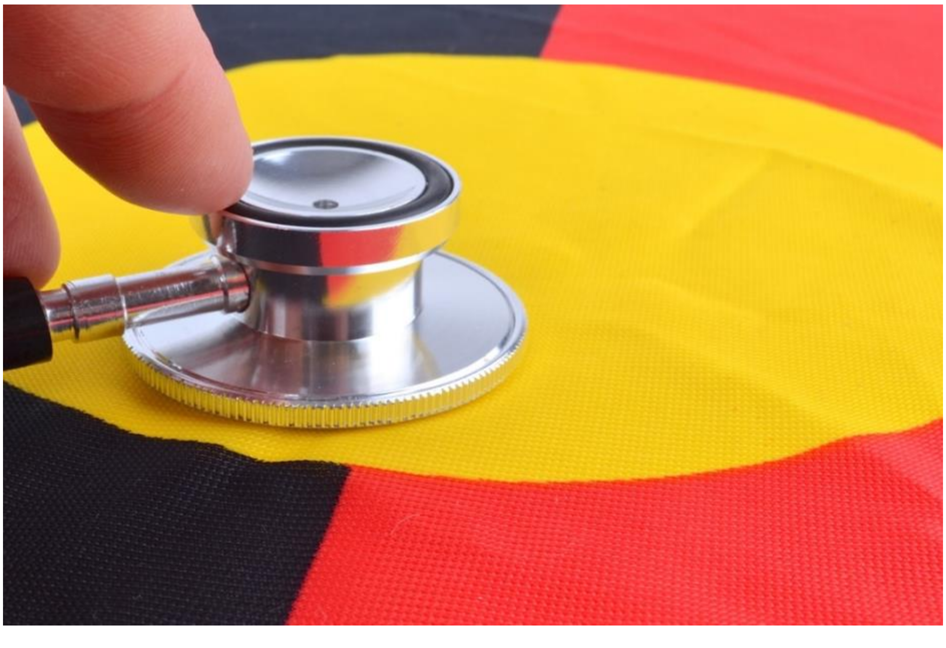
Strategy: Monash Partners underwent a strategic planning process followed by a restructure in response to extensive stakeholder feedback to align with priorities, resource provision and deliverables focused on the needs of our health services and communities. This involved extensive consultation with key internal and external stakeholders including our community via focus groups, interviews, workshops and surveys. This culminated in an agreed purpose and commitment statement (see response to Question 1) highlighting the importance of our community and clear strategic priorities and goals based on our health service needs.

Themes and Platforms focus on key burdens of disease in our catchment with partnerships enhanced across member organisations and we have engaged with health services, clinicians and consumers in priority setting processes. We have enhanced relationship building with primary health care. We have engaging and prioritised vulnerable groups (e.g. our catchment is highly ethnically diverse).
Community and consumer involvement is integral to what we do (see question 4 below), linked to AHRA.

Progress and links to AHRA: The concept of health service leadership of MP has matured. Our strategic plan is set by and focused on health service and community needs. Council meets bimonthly and health service needs are an agenda item, biannual partner forums shape priorities and health service needs guide MRFF funded activities and additional initiatives (e.g. our GRIP program - Case study 2). Theme and Platform leads form the Monash Partners Executive and support strategic activities in research, translation and healthcare improvement to guide implementation of the strategic plan focused on our community, clinician and health service needs. We are supporting our Practice based research network/PHNs and are facilitating their priority setting processes. We have Indigenous and CALD advisory groups, have engaged and mapped our activity in Indigenous Health and Research and we are funding and implementing cultural awareness training programs for our healthcare providers. We have engaged with the SA led Indigenous AHRA program, and linked to MACH and SA Centre joint activity.

Measures/metrics of success:

- Engagement in our CALD and Indigenous advisory activities
- Workforce capacity building programs for working with vulnerable groups (1 with others under development)
- Number and reach of our projects with vulnerable groups (1- 240 participants to date)
- Services embedded in health care for vulnerable groups (1)



Case Study 3

EMPOWR (Evaluating Mental health and Perinatal Outcomes in Women of Refugee background)
Lead: Associate Professor Jacqueline Boyle

Challenge/problem: Up to 20% of women are affected by perinatal mental health disorders (MHDs) with significant effects on women, their families, their children's development and personal and societal economic burden. Timely diagnosis and management is vital and evidence-based guidelines recommend routine antenatal screening yet this does not always happen. At increased risk of MHD are migrant and refugee women who may have experienced significant trauma and often do not have family support and do not understand the health system. This project demonstrated that evidence-based screening can be undertaken with this vulnerable group who live within the Monash Partner's catchment.

Approach/response: Evaluating Mental health and Perinatal Outcomes in Women of Refugee background (EMPOWR) has so far involved extensive community and health service co-design, generation of electronic screening tools in a range of languages, and creation of sustainable and embedded care pathways in maternity and community based care. A process was introduced for the report from the screening to be sent to the relevant referral either the GP or Monash Health's Refugee Health and Wellbeing Service. So far screening of 120 women from refugee backgrounds has occurred during the perinatal period for MHD and domestic violence. Another 120 women from culturally and linguistically diverse backgrounds have also been screened. The screening system using iPads with evidence-based screening tools translated into a number of different languages (reducing interpreter costs) has been implemented into routine care.

Significance: This project developed/ adapted and refined a screening tool resource in audio and written versions in the most common refugee and migrant languages. These were shared with a national online portal for other services to access (COPE). Readily available reports of the screening tool were provided during immediate care to enable referral to appropriate services. Clear sustainable referral pathways were developed and embedded within routine care. The program implements guidelines on antenatal screening into routine care for vulnerable groups.
Reach; With one in four women who give birth in Australia born overseas (65% in our catchment), this project has paved the way for simple low cost evidence based models of screening, referral and management that can be integrated into routine care. This new approach will ultimately help health providers across Australia give expectant mums the best possible care. Resources are shared on a national platform. This is now being scaled across Australia's largest health service and shared with other services.

Table 4: EMPOWR Pathway to impact

Activities	Outputs	Outcomes	Impact	Scaled and sustained
Start 2017 Project start-up; iPad-based electronic platform to screen at risk women for mental health disorders; codesigned and adapted tools	Participation by refugee and migrant women in screening; Screening in audio and written most common refugee and migrant languages; validated screening tools;	Screening program is acceptable to women and healthcare providers; Reports of screening freely available to other services; Screening program with referral pathways tested and evaluated; Screening increases identification of women with MHD	Evidence based screening guidelines for mental health disorders are integrated into routine care and available to women of culturally diverse needs and languages;	Potential for continued wide-spread use for iCOPE app https://www.cope.org.au/health-professionals/icope-digital-screening/ Screening and referral for a larger population to continue

Question 4: 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?

Strategy to address issues and progress: Monash Partners end users include our community, health professionals, health services and policy makers.

Consumer and Community Involvement (CCI): MP is a member of the AHRA National CCI initiative led by WAHTN and SHP. We participate in the AHRA steering committee and commit MRFF funds to objectives and priorities agreed across AHRA and with our partners. CCI has progressed significantly (see case study 4). Monash Partners have mapped activities and identified gaps, established national and international partnerships, completed a systematic review on evidence based approaches, scoped inter/national models, completed qualitative research with community and community agencies, purchased and scaled training programs, co-designed and developed new programs, integrated strategies to embed CCI in all levels of governance, planning and activities and are sharing our work across AHRA.

Health Professionals: Clinicians strongly influenced the strategic plan and priorities. Activities within MP are clinician led (and community partnered), with a focus on interdisciplinary activities. Theme and discipline leaders are clinicians and reach is across clinicians at all partners. Engagement strategies include forums, workshops, surveys, focus groups, surveys and co-design as well as significant training and capacity building activities.

Health services: MP is health service led. All activities are guided by our health services (see response to Question 3)

Policy makers: We meet regularly together with MACH and State Government. Our MP lead is a member of the Victorian Clinical Council. State policy engagement could be greatly improved and examples are being followed from SA and NSW. Currently at a State level there are significant barriers for evidence informed health care improvement driven across the partners and jurisdictional disjointed approaches continue to limit collaboration and impact at a national level. At a federal level, engagement with policy makers has been constructive, bilateral and remains important to national AHRA activities.

Measures/metrics:

- Number of research projects in Cystic Fibrosis focused on consumer and community priorities (6)
- Number of MP funded research projects with consumer and community involvement (17)
- Number of clinician led innovation projects (6)
- Number of activities aligned with policy frameworks and MRFF priorities (All)

Cystic Fibrosis community event generates funds for consumer prioritised research

Case Studies 4A and 4B

A. Partnership with cystic fibrosis community

Challenge/problem: The experience of Consumer and Community Involvement (CCI) in research from the initial prioritisation process to funding and seeing the outcomes has been limited. This exemplar of our MP model for CCI driven, high quality, prioritised research, is in cystic fibrosis, a genetic complex chronic condition, requiring whole of life care.

Approach/response: We adopted the international association for public participation framework in which consumers' capacity to participate is built and enhanced through the process. Research funding was generated through a co-run annual community event (www.65kmforcf.com.au). Grants and expression of interest processes are co-developed and require CCI, alignment to consumer priorities, and links to research and clinical leadership across MP. Scientific peer review is a two-stage process peer review, then consumer review to ensure projects meet community needs.

Significance: An annual community led event has generated $300K for consumer prioritised and co-designed projects, led by clinician researchers, focused on health impact.

Reach: The partnership is a model for building research capacity and CCI from consultation to partnership and empowerment. CCI can generate funding, guide priorities, enhance participation in research and optimise translation. AHRTCs are ideally positioned for this work.

Table 5: Partnership with cystic fibrosis community pathway to impact

Activities / Start	Outputs	Outcomes	Impact	Scaled and sustained
2017 Agreement with 65km for CF; Applications for projects opened; Priority setting with consumers; Funds granted.	Agreement of process for funding; peer review; 3 projects funded 2017; 3 projects funded 2018; underway for 2019	3 projects completed; consumers engaged in all stages from application to prioritisation and confirmation of funding; ongoing support for 2019	CF projects funded are as a direct result of specific fund raising and involvement of consumers. Consumer priorities being addressed. New models of care.	Annual funding event by 65Km CF in partnership with MP. New models of care now embedded in routine care. Larger scale projects have evolved from seed funding.

B. Clinician led innovation: Monash Institute for Medical Engineering: MIME

Challenge/problem: Silos and a lack of a path from research to health impact is a key barrier to addressing unmet clinical needs, especially with new technologies and devices.

Approach/response: Our model for clinician-led research integrated with engineering, IT, science and biomedical research (+200 leaders) generates innovation. MIME, established in 2014, modelled on the Manchester MIMIT model, in Manchester Academic Health Science Centre is now our MP clinical innovation platform. MP MRFF seed funds are offered via MIME partnership, bringing together world class researchers, clinicians and partner hospitals in a pathway for research and translation. Open MP calls on unmet clinical needs/ innovation, forums where clinicians present to researchers, a submission and peer review process and two stages of funding are offered. Projects include new surgical equipment for babies, devices to monitor jaundice in newborns, imaging techniques using artificial intelligence, bedside diagnostics to reduce patient transfers and others.

Significance: Projects have the potential to address major areas of clinical need and can translate Australian innovations to commercial products and to health impact. MP is extending this partnership to community groups with chronic disease and unmet needs and are bringing MIME under the MP umbrella as our formal clinical innovation platform.

Reach: All partners and our community participate. Successful innovations through this pipeline will have international reach (this model has just yielded a $30M investment to market).

Table 6: Clinician led innovation pathway to impact

Activities	Outputs	Outcomes	Impact	Scaled sustained
2017 MIME and MPs joint calls for projects (2017/ 18), meetings	34 submitted 6 projects prioritised	2 funded 2018 4 funded 2019	6 projects under way Processes in place Platform integration	Established sustained relationship/ model

Clinician led innovation supported by Monash Institute of Medical Engineering and Monash Partners will allow jaundiced babies to return home much earlier.

Question 5: 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?

Strategy and progress: MP Workforce development platform provides evidence-based, and co-designed large scale, low cost, accessible education and professional development programs, aligned to partner needs, to support an interdisciplinary workforce embedded in healthcare.

- Free, accredited good clinical practice (GCP) training at no charge to MP employees – MP now has a policy to have all involved in interventional clinical research certified in GCP
- Women in Leadership program for clinical, research and management staff
- Implementation Science and Healthcare Improvement massive open online course (MOOC), international case studies, Masterclasses, and micro-accredited Master's degree modules.
- Data Literacy MOOC in partnership with Sydney Health Partners
- Certified Health Informatician Australasia (CHIA) – low cost partnership with MP
- Fellowships including for early career academics and women with mentoring support
- Secondments with other AHRA Centres to build Indigenous research capacity
- International visiting fellows program offering training in a range of areas
- Data Fellows program and GRIP Industry PhD program

Measures/metrics

- Number of new programs co-designed in response to workforce needs (8)
- Number of health professionals (including managers) with research competencies and capabilities (1900); translation/implementation competencies (42); and CHIA accreditation (12)
- Number of Monash Partners fellows (7)
- Number of Monash Partners GRIP PhD students (15)
- Number of mentorship initiatives/activities (8)

Table 7: Workforce development pathway to impact

Activities / Start	Outputs	Outcomes	Impact	Scaled and sustained
2017 workforce co-design and evidence synthesis on effective programs	Series of workforce programs, many shared across AHRA Centres	Trained large numbers of staff in programs (see figures above)	Increasingly skilled workforce Reduced risks in clinical research	Programs embedded and scaled across Partners

Monash Partners GCP training is extremely popular amongst our partner organisations.

Question 6: Partner Contribution

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

All partners contributed to development of Monash Partners (MP) strategic plan through participation in focus groups, interviews, workshops and an online survey. MP has a mature and focused Council and partnership with a clear purpose and commitment. The ten partner organisations have committed to maintaining and supporting the collaboration and a formal legal agreement is in place. All partners are represented on the MP Council, Executive and Theme/Platform committees.

MP is a health service led partnership defined by strong health service leadership and engagement, health service led governance and priorities with funding and in-kind commitment from all partner organisations. Centre priorities have been developed and agreed through formal processes aligned with evidence synthesis, qualitative research, Delphi surveys, Nominal group techniques in forums with all Partners engaged.

MP health service partners provide human resources support for employment of the MP Executive Director, Chief Operating Officer, and operational team with our lead academic partner providing additional and significant in-kind support for grants support, administration and legal services. Financial contributions have increased significantly for the 2019-20 financial year and our lead academic and six health service partners have committing additional funds for a Digital Health Graduate Research Industry Partnership, and additional communication and theme integration activities.

All partners contribute nominated members to each of the Theme and Discipline Committees and these committees underpin our activities across the partnership.

Question 7: 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?

MP has streamlined ethics and governance processes to reduce timelines and increase trial access. A multi-organisational, multidisciplinary working group has led aligned processes, shared best practice /resources and created efficiencies of scale (see Table 8) including:

- Mutual acceptance of ethical review across member organisations
- Implementation of centralised model for shared ethics review
- Coordinated weekly HREC meetings to improve approval timelines
- Relinquishing of local institutional forms and processes
- Adoption of national forms for all applications (HREA via online systems forms)
- Acceptance of electronic sign offs for agreements to improve start-up time
- Implementation of a collaborative research agreement, sign off within 3-5 business days
- Adoption of a single set of governance forms, aligned processes and standard timelines

Benefits: Simplified ethics and governance processes; reduced costs; improved timelines; centralised complex, multi-site reviews in high volume HRECs. The lack of an integrated single ethics IT system, co-designed with end users, still presents a critical barrier to further progress. With SPHERE we have led the development of a national systems level initiative in clinical research across all Centres collaborating with ACTA. MRFF seed funds are aligning activities.

Table 8: Implementation of streamlined ethics and governance processes across MP

Implementation of aligned forms/processes	**Number of partners**
MoU for mutual acceptance of ethical review across health services partners and university	7
Centralised ethics committees (NHMRC certified/ NMA accredited)	10
Coordinated weekly HREC meeting to improve the approval timelines	10
Relinquishing of local institutional forms and processes	9
Adoption of national forms for all applications (HREA via online systems forms)	10
Acceptance of electronic sign offs for agreements to shorten start-up time	10
Collaborative research agreement template with expedited sign off within 3-5 business days	10
Adoption of a single set of governance forms with aligned processes for governance approval	10
Commitment from Partners	
Agreement to pursue a single IT (*ERM) system to support overall ethics and governance (*provided the current challenges are resolved, subject to the satisfaction of the end user)	6