MacHSR Future Leaders Fellowship program
Final reporting (Cohort 1)

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Project title: Virtual Clinics as a platform to deliver Values Based Health Care for Inflammatory Bowel Disease

Report:
An overview of the original problem and approach

The Clinical Problem: Inflammatory bowel diseases (IBD) are incurable, relapsing and remitting conditions characterized by prolonged flares which are often associated with abdominal pain and diarrhoea. Flares can last from days to months and often require prolonged courses of corticosteroids, immunosuppressive therapies, hospitalization and in some cases surgery. Consequently, IBD has a significant impact on quality of life, relationships, mental health and work productivity.
Australia has the highest incidence of IBD in the world.(1) The prevalence of IBD in Australia is increasing and is expected to impact ~100,000 people in 2022.(2) Several factors including the environment, genetic makeup and diet are thought to contribute to this upward trend. With increasing prevalence, aging population, and the availability of more advanced medical therapies the cost of managing this cohort is increasing exponentially.(3) The main driver of the increasing economic burden of IBD relates to drug costs.(4) This increasing burden of IBD patients has led to some hospitals generating intuitive funding models in an attempt to support their IBD health services whilst remaining economically viable to society as a whole.(5,6) In the absence of specific funding for chronic diseases, IBD services in Australia are generally funded via activity-based funding, with blocks of revenue provided per item of healthcare provided in the form of weighted inlier equivalent separation (WIES) - a cost weight (W) adjusted for the time spent in hospital (IES). However, such funding models prioritize procedures and do not reflect the care requirements of patients with IBD throughout the patient journey.
Values based health care (VBHC) is an alternative funding model, promoting quality health care delivery by prioritising patient centred outcomes in a cost-effective manner.(7) VBHC uses the equation: Value equals outcomes (Clinical and patient reported outcomes (PRO)) divided by costs, placing patient outcomes at the forefront of assessing 'value' in healthcare delivery. VBHC models have been shown to be of value in other health care settings such as, cancer care and dentistry and radiology(8–10) and may be of value in the delivery of healthcare for chronic diseases such as IBD.
It is increasingly understood that IBD has an impact on patients beyond clinical symptoms alone. Furthermore, there is often a disparity between treatment outcomes that are prioritised by health professionals and the priorities of patients.(11) The Austin Health IBD service has recently developed a PRO to assess quality of health care delivery in IBD patients, attempting to address some of these unmet needs. Patient focus groups were used to highlight key themes that were important to patients. Subsequent to this, cognitive interviews were used to refine the assessment tool and determine the PRO's relevance to both patients and clinicians.
Provision of healthcare and virtual models of care and technology utilization have grown rapidly since 2020 and significantly altered the management of chronic health conditions.(12,13) Virtual biologic clinics (VBC), which promote a multidisciplinary led approach to therapeutic decision making, have emerged in several expert IBD centres internationally. VBC have demonstrated improvements in care delivery processes and treatment outcomes.(14) Given their central role in regulating the quality use of costly biologic medicines it is anticipated that VBCs would have an impact on the costs of IBD care. However, the impact of VBCs on health care utilization and value of healthcare delivery is yet to be determined.

This is a study that is aiming to help assess whether a virtual biologic clinic (VBC) used for managing patients on escalated doses of biologic medicines can improve rates of healthcare utilisation and reduce the socio-

economic burden of Inflammatory bowel disease whilst maintaining the quality of care delivery and clinical outcomes currently experienced by inflammatory bowel disease patients. In doing so, we hope to evaluate the role that VBC's can have in the development and implementation of a novel model of care for IBD patients, values-based healthcare.

Refinements to the project:

Initially the study was designed as a multi-centre, Australia wide randomised control study aiming to address the question above. Following discussion with both MACH HSR academic supervisors and my Austin Health clinical investigators, a consensus was reached that due to the novel study methodology and the complexity of the study design that a smaller dual centre, pilot parallel cohort study would provide a more rigorous and appropriate study, the results of which, if determined to provide positive outcomes could form the basis of and help to structure a future, larger RCTs similarly to that initially perceive.

Despite the study still being in its infancy with recruitment commencing in September '23 this study design has had a number of achievements to date:

- August '22 - study protocol and design ranked the number one priority study for the Australia and New Zealand Inflammatory Bowel Disease consortium – demonstrating a consensus that there is a clear need for an alternative model of care in IBD. Furthermore, it highlights the excitement that is developing for virtual clinics in the management of IBD and other chronic diseases.
- Approved grant funding obtained from Janssen Pharmaceuticals to support the completion of this study. Funds received will be used to fund procurement of a novel electronic patient reported outcome platform.

Barriers or delays:

Due to the workforce pressures throughout pharmacy departments in hospitals throughout Australia, access to the 'protected' time (0.2 FTE) was sometimes difficult to enforce, despite the best intentions of my departmental manager. It was apparent that dissemination of the promise of FTE support by hospital executives did not trickle down to the service level or result in actual funds, FTE or personnel to fund any cover, to enable my participation and completion of work required as part of the HSR fellowship. This often meant that my absence resulted in gaps in service provision for IBD.

The amendments made to the study protocol as outlined above led to delays in finalising the study protocol but with massive support from MACH academics (Prof. Harriet Hiscock and Prof. Kim Dalziel) the flaws in the initial study design were highlighted. This allowed amendments to be made to the study design and these implemented ensuring that completion of the study would be achievable and therefore increase the likelihood of obtaining meaningful results.

Significant delays with the hospital HREC committee resulted in months of delays in commencing recruitment. However, through discussions with other fellows in the MACH fellowship, it became apparent that I became this was not unique to my research and that it is in fact often a consequence of performing any form of health services research.

Plans for continued activity/translation/implementation:

This study will continue as planned with recruitment ready to commence in September 2023 across both recruiting sites. Should this pilot study show promising results, the intention is to upscale the study design into a larger randomised controlled trial across multiple recruiting sites, nationwide.

Following a fantastic experience with the MACH HSR fellowship, I have decided to extend my HSR research career and have applied to the University of Melbourne, to continue the work already throughout the MACH-HSR fellowship and have it form the basis of a PhD, commencing in 2024.

Government or industry engagement:

As noted above, we were successful in a grant application to Janssen pharmaceuticals for support for the first 2 years of the study. The revenue generated from this grant application will be used to fund the use of a novel, patient friendly electronic patient reported outcome measure tool that will facilitate improved data generation and storage of results.
Support has also been received from Crohn's and Colitis Australia in conducting the study and more importantly in providing access to their large network of all stakeholders to help disseminate the findings of our study throughout Australia and internationally.
We have also made applications for a number of academic grants including: Medical Research Future Fund, The Gutsy Group and Austin Medical Research Foundation. In the case of successful receipt of such grants, the funds will be used to help provide the resources required to conduct the studies across both recruiting sites.

Final Remarks:

This MACH HSR fellowship was an enlightening experience for me and highlighted a passion for health services research in me that I did not know existed. The support I received from all the MACH team, the wonderful HSR academics and the other fellows was unwavering, even in some trying times. This made the year extremely enjoyable and was an experience that I have taken so much from and that I am sure will underpin further explorations into the HSR field in the years to come.

References

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