Implementation of an Orthopaedic Triage Service for Osteoarthritis in the New Zealand Public Health System: Patient, Physiotherapist, Manager, and General Practitioner Perspectives

Jennifer A. Stilwell *DHSc*
Clinical Lead Physiotherapist, Hauora a Toi Bay of Plenty, Health New Zealand Te Whatu Ora, Tauranga, New Zealand

Duncan Reid *DHSc*
Professor of Physiotherapy, School of Clinical Sciences, Faculty of Health and Environmental Sciences; Active Living and Rehabilitation: Aotearoa New Zealand, Auckland University of Technology, Auckland, New Zealand

Peter Larmer *DHSc*
Associate Professor, Faculty of Health and Environmental Sciences: Aotearoa New Zealand, Auckland University of Technology, Auckland, New Zealand

ABSTRACT

To manage the increasing demand on orthopaedic services, health systems around the world have introduced osteoarthritis (OA) models of care led by specially trained physiotherapists. The community orthopaedic triage service (COTS) at the Bay of Plenty district health board (BOPDHB) was piloted to improve the patient journey through the health system. An outcome evaluation was undertaken to explore perspectives of patients, DHB physiotherapists, managers, and general practitioners (GPs) post implementation. Semi-structured interviews were conducted and data were analysed using thematic analysis. Analysis resulted in one overarching central organising concept: Changing the narrative about OA care delivery in the New Zealand public health system. This gave rise to three key themes: (1) Making OA a national health priority, (2) Optimisation of public health resources, and (3) Embedding best practice. Participants reported benefits including improved experience, easier access, and reduced hospital pressures. The COTS has the potential to bridge the gap between primary and secondary care; however, attention must be taken not to utilise a triage model as another barrier to accessing services.

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INTRODUCTION

Osteoarthritis (OA) is a worldwide, highly prevalent condition that causes loss of function, disability, and pain (Long et al., 2022). New Zealand faces an ever-growing problem with the prevalence of OA, with recent literature reporting a 116% increase in cases within Australasia in the last 30 years (Long et al., 2022). Due to the increased prevalence of the disease, New Zealand is struggling to manage the current demands of OA on the public health care system, particularly regarding the demand for first specialist appointments (FSA) with an orthopaedic surgeon (Bay of Plenty District Heath Board, 2022). In particular, the Bay of Plenty District Health Board (BOPDHB) continues to experience increasing referrals from general practitioners (GPs) into orthopaedic services, and the BOP strategic plan reports it cannot sustain its current patterns of resource allocation and ways of working (Bay of Plenty District Heath Board, 2022).

To manage the increasing demand on public health services, health care systems around the world have introduced OA models of care led by specially trained physiotherapists to reduce wait times and improve patient flow. These models have been shown to improve resource utilisation, access to services and care coordination, reduce wait times, and lead to better health outcomes (Button et al., 2019; Vedanayagam et al., 2021). Despite this, these models have only recently been introduced and evaluated in the New Zealand public health system (Gwynne-Jones et al., 2018). In 2020, the BOPDHB piloted a community orthopaedic triage service (COTS) to address the ever-increasing demand for referrals for hip and knee OA into orthopaedic services. The COTS was an extension of the orthopaedic service in which specially trained orthopaedic physiotherapists assessed and triaged patients with hip or knee OA onto appropriate non-surgical or surgical pathways. The service was independent of the hospital network and based in four community clinics within the Bay of Plenty region. A larger quantitative evaluation of the service has already shown that the COTS model can facilitate earlier assessment and access to appropriate intervention than the standard orthopaedic pathway, thus potentially improving the musculoskeletal health of New Zealanders (Stilwell et al., 2024). With the introduction of new care pathways, it is, however, critical to evaluate the patient's perspective on the care they receive and integrate the patient voice into decision making (Carr-Hill, 1992; Dickinson et al., 2015). Therefore, further evaluation using qualitative means was required.

Previous research evaluating OA triage pathways in Canada and Australia have considered patient perspectives using these models and found that patients report many positive experiences with these models of care (Cavka et al., 2015; Gibbs et al., 2020; Gillis et al., 2014). Within the New Zealand context, there are only a few recent studies that have explored this aspect (Abbott et al., 2019; Gwynne-Jones et al., 2018), with no studies evaluating these services delivered in a community setting. Therefore, the aim of this research was to explore patient, DHB physiotherapists and managers and GP perspectives of the COTS to understand how this model of care impacts the care experience within the management of hip and knee OA.

METHODS

The COTS model of care

The COTS was established as part of a larger orthopaedic transformation project at the BOPDHB. Although based in community localities, the service was delivered as a secondary care service. Patients accessed the COTS via a GP referral and this service was designed to be their initial appointment within the public health system (Figure 1). To be eligible for inclusion, patients must have undergone an initial assessment by their GP and been referred for orthopaedic consultation in secondary care.

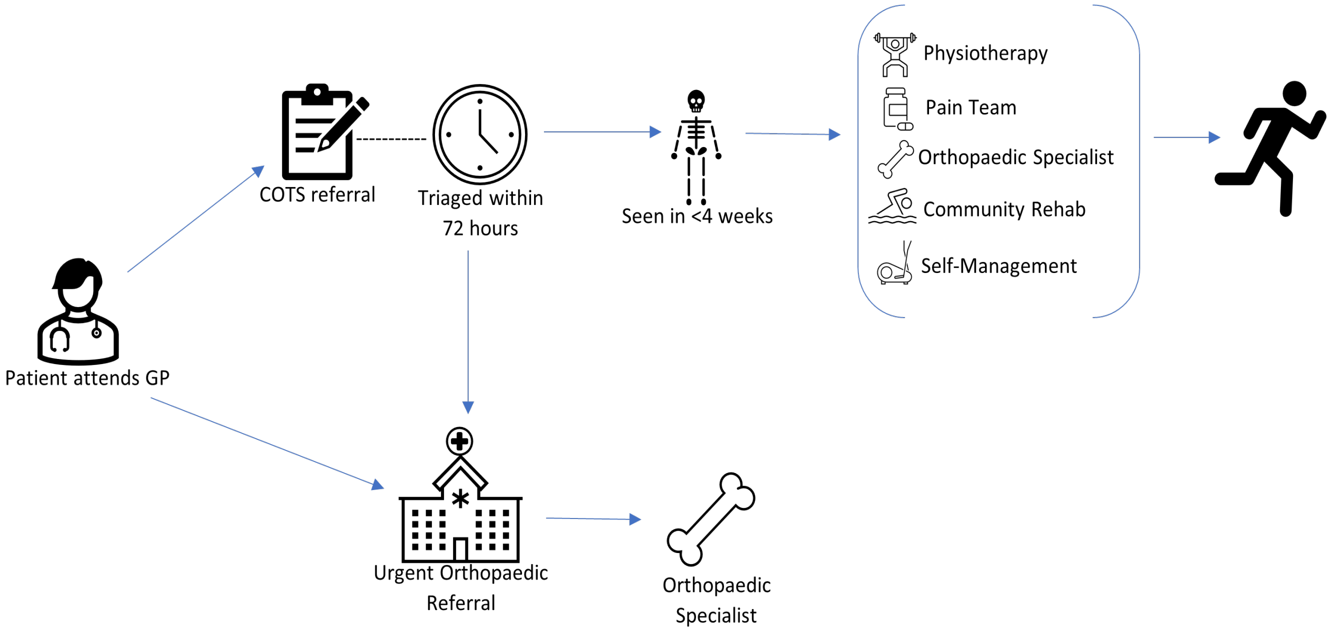
At the patient's appointment, an examination by a specially trained physiotherapist was undertaken. Each physiotherapist had a minimal of a Masters-level qualification and had completed extensive in-house training with the orthopaedic team. Following their assessment, the patient was referred to the most appropriate intervention, which included any of the following: one-on-one physiotherapy, FSA with an orthopaedic specialist, activity with arthritis community rehabilitation programme, chronic pain team, or returned to their GP for ongoing care. The aim of the COTS was to improve access to musculoskeletal services through lower threshold criteria while utilising physiotherapists as an alternative pathway for orthopaedic patients with hip or knee OA.

Evaluation study design

This study design was an outcome evaluation of the COTS, consisting of semi-structured interviews of people who had experienced the COTS model of care, people who used the traditional pathway, DHB physiotherapists and management involved in delivering the service, and GPs referring into the pathway. The evaluation was structured around the easy evaluation framework, which has been widely taught to the New Zealand public health workforce since 2007 (Adams & Neville, 2020). This has been used successfully as a framework for a number of research evaluations in a variety of health-related settings and highlights the role of formal evaluation in health care, specifically focusing on evaluations undertaken on projects, programmes, or policies (Dickinson et al., 2015; Wilkinson et al., 2014). The approach to this research is focused on the value branch of the evaluation tree based on the work of Scriven (1991) who considers the foundational description of evaluation as the systematic definition of merit, worth, or significance of a programme, project, or policy. Scriven (1991) states it is the work of the evaluator to make judgement about what is being evaluated.

Figure 1

Flow Diagram Representing the Bay of Plenty Community Orthopaedic Triage Service (COTS) Pathway



This evaluation research methodology is guided by the theoretical world view of pragmatism. More recently, research has focused on pragmatism as a paradigm for social research (Allemang et al., 2022). While it is a relatively new emerging paradigm, it maintains focus on patient outcomes to produce socially useful knowledge (Cornish & Gillespie, 2009; Shaw et al., 2010). Given the significance of problem solving in research design, this new worldview offers an alternative epistemological paradigm (Allemang et al., 2022).

Interviews

Interviews as a method of research assume that the participant's perspective can add meaningful insights into the success or failure of a project (Dickinson et al., 2015). Semi-structured interviews were conducted over a 12-month period from 1 September 2020 to 1 September 2021 (Stilwell et al., 2024). The research was approved by the Auckland University of Technology Ethics Committee (reference number 20/36).

Participants

Participants for the interviews were recruited in four distinct subgroups, which included patients assessed in the COTS service, patients assessed in the standard orthopaedic service (non-COTS), DHB physiotherapists and management involved in delivering the service, and GPs referring into both services. These groups were chosen to represent the range of personnel involved in the development and utilisation of the service. Both COTS and non-COTS patients were included to allow for analysis of both pathways and to form a more comprehensive understanding of the impact on those involved. This is in line with other literature that has completed pre- and post-implementation data collection (Abbott et al., 2019). Recruitment occurred using criterion-based purposive sampling (Table 1) (Palinkas et al., 2013).

Potential participants were initially contacted by administration staff at the BOPDHB (Appendix A). Those who verbally agreed to be interviewed were forwarded to the primary researcher and sent information letters outlining the study details. Although there are no standardised sample-size criteria for qualitative studies,12–20 participants are generally considered sufficient to achieve data saturation of themes with a moderately homogenous group (Kuzel, 1999). At the time of the data collection, recruitment was limited due to COVID-19 restrictions, and this is a limitation of this research. In our study, data were collected from nine participants in the patient groups and eight participants in the staff and GP groups. The researcher deemed information richness had been achieved when repetitive codes were identified, and no new information or relationships were identified within the data (Rahimi & Khatooni, 2024).

Data collection

The interview team consisted of one lead researcher and two advisors with qualitative research experience. Individual face-to-face interviews were conducted by the primary researcher using semi-structured interview guides. The interview questions were designed specifically for each subgroup (Appendix B). The interview questions for subgroups 1 and 2 were guided by the work done by Waters et al. (2016) and Fennelly et al. (2020). The questions vary for subgroups 1 and 2 to account for the different referral processes for each group. The interviews for subgroup 3 were guided by the work of Wiles and Milanese (2016). These studies have previously conducted interviews of patients and stakeholders using orthopaedic triage clinics, and, after a critique of the methodology, the researchers deemed these to be critical pieces of work to guide their interview development. After each interview, the primary researcher (JS) reflected on the interview and debriefed with the advisors (DR, PL) to make note of additional probes and modifications to the interviews. This is a key principle in qualitative data collection and focuses inquiry and rigour of the research (Barbour, 2013).

As the primary researcher (JS) worked within the COTS at the time of the data collection, they acknowledged their insider

Table 1

Sampling Criteria for Each Subgroup

Inclusion and exclusion criteria	Subgroup			
	1	2	3	4
Inclusion criteria				
Age (years)	> 45	> 45	> 18	> 18
Sex	Male or female [a]	Male or female [a]	Male or female	Male or female [a]
Ethnicity	At least one Māori participant	At least one Māori participant	Any	Any
Language	English speaking	English speaking	English speaking	English speaking
Sample	Patients	Patients	Staff	GPs
Exclusion criteria				
Language	Non-English speaking	Non-English speaking	Non-English speaking	Non-English speaking

Note. GP = general practitioner.

[a] At least one male and female required.

Table 2

Descriptive Details of Participants in Each Subgroup

Group	Description/role	Sex	Ethnicity	Age	Length of interview (min)
S1P1	COTS patient	Male	NZ European	65–74	33
S1P2	COTS patient	Male	NZ European	75–84	19
S1P3	COTS patient	Female	NZ European	65–74	31
S1P4	COTS patient	Male	Māori	55–64	27
S1P5	COTS patient	Male	Māori	45–54	21
S2P1	Orthopaedic patient	Female	Māori	55–64	22
S2P2	Orthopaedic patient	Female	NZ European	65–74	32
S2P3	Orthopaedic patient	Male	NZ European	55–64	33
S2P4	Orthopaedic patient	Female	NZ European	65–74	30
S3P1	COTS physiotherapist, working clinically	Female	European	35–44	47
S3P2	Physiotherapy manager, non-clinical	Female	NZ European	55–64	38
S3P3	Executive director of allied health – physiotherapist, non-clinical	Female	European	45–54	37
S3P4	Physiotherapy manager, non-clinical	Female	NZ European	45–54	34
S3P5	Orthopaedic surgeon	Male	NZ European	55–64	36
S4P1	GP	Female	European	35–44	33
S4P2	GP	Male	NZ European	45–54	20
S4P3	GP	Female	European	35–44	32

Note. GP = general practitioner; NZ = New Zealand; P = participant; S = subgroup.

perspective as they approached the interviews (Aburn et al., 2021). The researcher had not been involved in any of the care for the patients who were recruited. Before conducting the interviews, the JS underwent a pre-assumption interview by a researcher external to the project and unfamiliar with the research aim and context. A pre-assumption interview is a way of gathering insights about matters of significance in the interviewee's world and to highlight any known and unknown assumptions, biases, and values that were subconsciously present before the interviews take place (McNair et al., 2008). This researcher used this to reflect on their assumptions following each interview. This process improved rigour during data analysis by exposing insights that directly impacted on the research process.

Data analysis

The data were analysed using thematic analysis as outlined by Braun and Clark (2006). Data were transcribed by JS into an electronic written format, which helped with the familiarisation process. Transcripts were then checked by another researcher (DR) and corrected if necessary. The primary researcher (JS) carried out inductive informed coding at a semantic level to address the research objectives. Each segment of data that was relevant or captured something interesting was coded using Microsoft Excel as described by Bree and Gallagher (2016). Open coding was used, which allowed for the development and modification of codes throughout the coding process.

Following the completion of coding, the research team met virtually to discuss the codes. Codes were grouped into broader themes, and multiple interpretations and outliers were reviewed and discussed using an iterative process (Carpenter & Suto, 2008). The primary researcher (JS) consulted the research team to test the development of relevant themes throughout the analytic process to reference their assumptions. Themes were then further reviewed, and data were gathered using spider diagrams. Finally, a thematic map was developed to illustrate the relationship between themes.

RESULTS

Data analysis of the interviews resulted in one central organising concept: Changing the narrative about OA care delivery in the New Zealand public health system (Figure 2). This gave rise to three main themes: Making OA a national health priority, Optimisation of public health resources, and Embedding best practice. The central organising concept captures the essence of the three main themes, which are based on core meaningful patterns within the data. The concept gives rise to the participants' voices on the impact of the COTS to reframe the current management pathways of OA within the New Zealand public health system. It encompasses the challenges and pitfalls faced by patients and clinicians in the current OA models of care and how adopting a new model of care can contribute to improved patient management in multiple dimensions. Below, quotes from participants are coded based on their subgroup (S) and participant (P) identification numbers.

Theme 1: Making OA a national health priority

This first theme was about the lack of consistency within New Zealand regarding OA pathways and the potential impact of the COTS on managing this challenge.

A nationwide change

There was consensus from staff and patients that the orthopaedic pathway in the treatment and management of OA nationally was failing, and more consistency was required throughout the country. A participant working in the pathway said, “There’s an inconsistency around the DHBs, around the country, with how many patients are accepted in different regions” (S3 P5). Participants acknowledged how the COTS could address this challenge by standardising the delivery of care for patients with OA: “I think it’s a really good pathway, but I think there needs to be some major reinvention, overhaul of the system” (S3 P2).

Challenges to service delivery

Participants reported challenges to the service delivery for patients with OA, predominantly due to the dichotomy of the New Zealand health system. Participants commented on how the current structure of the health system formed barriers to accessing appropriate treatment for their OA. For example, “Initially the first thing was ACC and that was a cartilage thing [referring to affected joint] and after about five or probably more than that years, it [referring to affected joint] was doing its thing again but wasn’t ACC, it’s confusing” (S1 P1). This was also acknowledged by staff who said, “because of the way the health system is in New Zealand, we have ACC and DHB [funding], it’s difficult to navigate for patients” (S3 P2). Participants commented how having a triage model using physiotherapists could help with these challenges as “DHB physios are much more attuned to chronic ailments and treating arthritis and understanding what gets surgery” (S3 P2).

Theme 2: Optimisation of public health resources

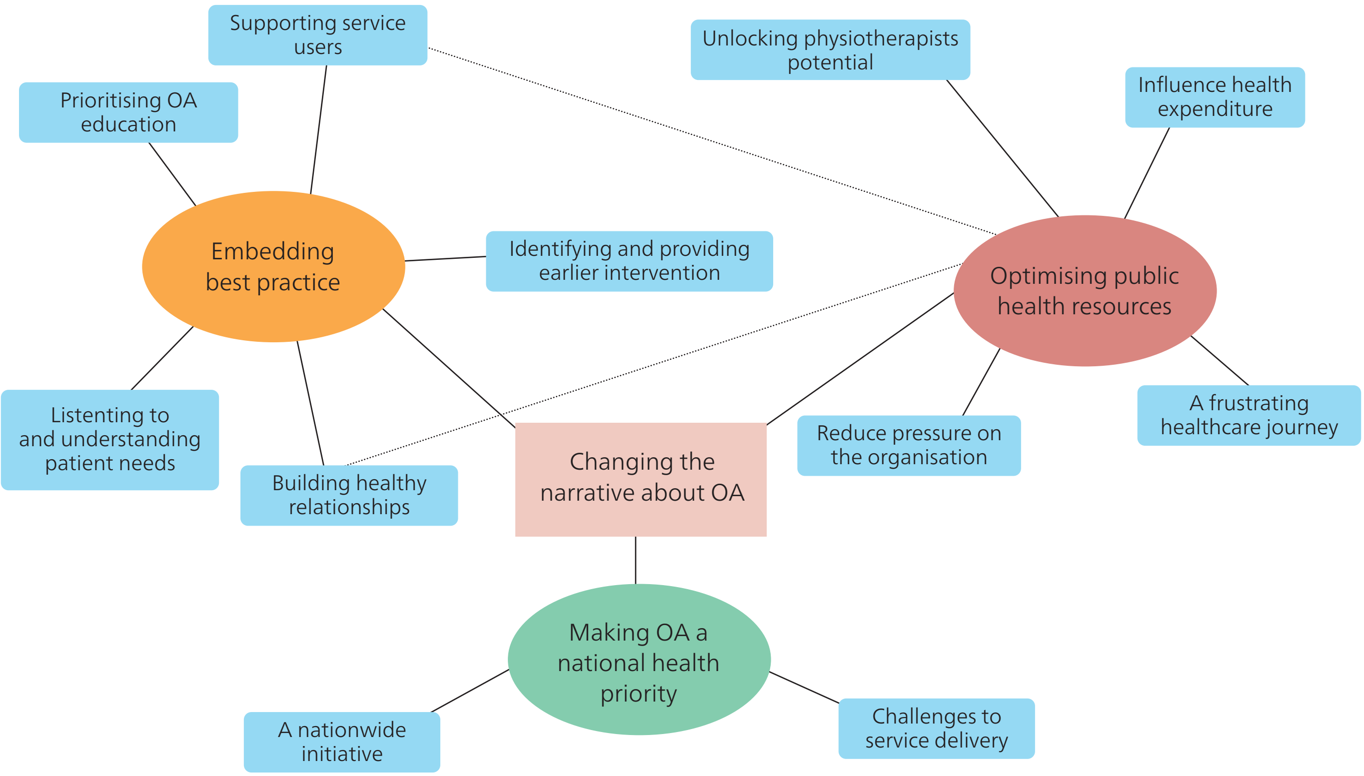
Within the second theme, participants commented on the impact of the COTS directly to the public health system, staff, and resources.

Unlocking physiotherapy potential

Participants felt the COTS has the potential to impact the future direction of the physiotherapy profession, including developing advanced practitioner education pathways, shifting professional boundaries, raising the physiotherapy profile, and setting the standard for OA care. Overall, participants using the COTS model, found they were satisfied with the care provided by the physiotherapist. Two participants commented that “I didn’t feel like I was missing out on anything from not seeing a doctor at this point” (S1 P3) and “I didn’t picture her as a physiotherapist as such over anything else. She was there, she was doing a job” (S1 P1). Staff members were also unanimous in the ability of

Figure 2

Thematic Map of Theme and Subthemes



Note. OA = osteoarthritis.

physiotherapists to be working in these roles, stating, "we are competent to do this, and we have the skill set to do this" (S3 P1).

Reduce pressure on the organisation

Participants across all four subgroups discussed the impact of the COTS to reduce pressure on the organisation, including providing care closer to home, reducing the pressure on GPs and on the orthopaedic workload. Overall, participants recognised how having a community service can reduce the foot traffic through the hospital, freeing up resources for acute care: "I can understand being in the hospital if you've got life-threatening things happening because they've got everything they need there but for these sorts of things I don't think it's critical" (S1 P4) and "Why would you want people driving into city where a hospital is situated if it's not needed? You know why do they need to go to a hospital?" (S1 P3). Additionally, participants commented that having physiotherapists working in these roles can reduce the pressure on the orthopaedic team, leaving them more time to perform surgery. One participant commented that there is "less pressure on the guys at the top who are actually doing the knee replacements and things like that, the surgeons. It frees up a lot more of their time" (S1 P4).

Influencing health expenditure

Participants commented on the ability of the COTS to influence health expenditure by substituting doctors with physiotherapists and reducing travel time for patients: "The most powerful point in getting the right service to the right patients in a cost-effective way is this gatekeeper role" (S3 P5) and "It's less expense because I imagine the surgeons' time are a lot more expensive than the physios' time" (S1 P3).

However, due to the resource needed to establish the project there were concerns from participants as to the impact of the COTS to improve cost effectiveness: "It's an improved service, I firmly believe that, how cost effective it is truthfully in terms of numbers and final outcome and what it costs, I don't know I haven't seen that data" (S3 P5).

A frustrating healthcare journey

Patients using the orthopaedic system commented on their frustration in using this pathway. They commented on the lack of follow up, structure, and discordance in the orthopaedic system: "It would be nice to know that there was somewhere you could go without the rigmarole of having to go through your doctor and then back through the specialist" (S2 P3). Participants also made comments on their frustration in the points system for accessing surgery and the discordance between the points system and their symptoms: "Quite confusing where the surgeon says I think this surgery would be the best thing for you and then when they input all the data it comes back oh no you don't qualify" (S2 P3) and "I don't see why you should go through a points system to see how bad it is, you know" (S2 P2). Another participant commented specifically on the lack of orthopaedic follow up, saying, "it would be quite good if they said look, we will see you again in 6 months or 12 months and review, you know, how things have gone rather than having to start the whole process again. Erm, quite upset and frustrated again" (S2 P1).

Theme 3: Embedding best practice

Theme 3 reflects participants' concordance on the contribution of the COTS in being able to deliver evidence-based practice as recommended for patients with OA. Participants highlighted the impact of an evolving COTS service from both a personal and health care delivery standpoint.

Identifying and providing earlier intervention

Participants commented on how the COTS was superior at identifying and providing earlier intervention in OA care compared with the orthopaedic pathway. This was discussed in two accounts, including being seen earlier within the disease process and timely access to care. One COTS patient commented specifically on how important it was to understand early what is going on to improve long-term outcomes: "I know a lot of people that would have come in here years ago and probably have been able to do something more you know before you get to the stage of replacement" (S1 P5).

All participants involved in the COTS model were satisfied on how quickly they were seen. For example, one participant was impressed by how short the wait times were to receive an appointment through the COTS: "I was seen at the GP, and she sort of said you will hear and next minute, I expected months with what's going on, but it was more like weeks rather than months, very impressed" (S1 P3). One participant commented on their previous experience of waiting to see an orthopaedic surgeon saying that "it would be nice to know earlier rather than later that this [OA] is causing the problem. So, the waiting time for that [seeing orthopaedics] is too long" (S2 P2). Staff members also commented on the reduced wait times, with one physiotherapist saying:

> Previously a patient would have waited months, seen the GP, then waited months to see an orthopaedic surgeon, sat in clinic for ages and had a shortish appointment with a registrar or consultant or a bit of both, and been given a brief message as to what was wrong with them (S3 P2).

Prioritising OA education

Participants noted that the education they received from the physiotherapist was very helpful, allowing a better understanding of their condition. Participants in the orthopaedic group highlighted the lack of available information when seeing doctors and attributed this to the lack of time provided in their appointment. Patients who had been seen in the COTS were satisfied with the amount of information they received and how this positively impacted on their management: "She explained everything really well. Did the examinations and everything so yeah, no that was good. Yep. She covered everything that you sort of needed to know" (S1 P4) and "I felt she sort of explained a lot of things that, like I say with everything connected and the knees clicking and how I can't put my socks on" (S1 P5).

Listening to and understanding patient needs

Participants said that the COTS was a positive experience in listening and understanding patient needs when compared with the previous pathway. They attributed this to having more time to spend with the physiotherapist who engaged in active listening, prioritised their OA, and took them seriously. Participants in the COTS said that the physiotherapists were easily approachable and able to spend more time with them than other health care providers: "It made me feel a little bit happier that you know that obviously you're being listened to which was a better experience than when I saw the GP" (S1 P2).

Staff and GPs also said that patients who had used the COTS felt listened to in their appointment, and their needs were met. One GP said, "the patients were positive about the waiting times, they were positive about the thoroughness of the assessment and were very positive about kind of the variety of options that were available" (S4 P2). An orthopaedic surgeon commented that "for many people COTS is a superior experience because they're not looking for surgery, they're looking for somebody to listen and advise" (S3 P5).

Building healthy relationships

Participants commented on the importance of strong relationships between physiotherapy and orthopaedics and the potential impact of the COTS in shifting hierarchical boundaries, building trust, improving communication streams, and gaining respect. One participant stated that "I think continued acceptance from orthopaedics, what we will see as this continues to be successful is that we will have, an increase in relationships with consultants." (S3 P4). In addition, GPs commented that the model can help improve the relationships between primary and secondary care: "I think what we will see, as I'm hoping this continues to be successful, is that we will have an increase in relationships between providers" (S4 P2).

Supporting service users

Participants felt the COTS could provide support in the management of patients with OA. There was positive feedback from GPs that the service could provide them with additional support including assisting with further diagnosis and clinical decision making around musculoskeletal pain: "I think, having allied health involved in assessment of areas where they're really skilled is really appropriate" (S4 P1) and "Having another option, a way to look at something is quite useful" (S4 P3).

Participants also expressed satisfaction with the service in its ability to provide support to patients with OA: "Having that support [from the COTS], yes I probably react better and put more into it if I'm not doing things alone" (S1 P1), compared to those using the orthopaedic system: "It would be nice to know that I was in the system and there was support, more support for ongoing care" (S2 P2).

DISCUSSION

The aim of this research was to explore patient, DHB physiotherapists and management, and GP perspectives of the COTS in order to understand how this model of care impacts the care experience within the management of hip and knee OA. To the best of our knowledge, this is the first time an orthopaedic clinic delivered by specially trained physiotherapists has been established independent of a hospital network in New Zealand. This type of service offers several potential advantages, including providing patients access to earlier intervention, reducing pressure on hospital waitlists, and supporting service users.

Despite the prevalence and financial burden of OA, the New Zealand public health system has yet to adopt a national model of care for OA management. Current OA management around the country has been described as fragmented and episodic, with "little inter-disciplinary collaboration to support optimal care" (Baldwin et al., 2017, p. 79). Key reports around the world identify the management of musculoskeletal disease, such as OA, as a major health priority (European Action Report, 2017). The clinical care standards for knee OA released in Australia provide a focus on improving the standardisation of care across the country and have led to several Australian states developing local models of care to guide service delivery (Australian Commission on Safety and Quality in Health Care, 2024; New South Wales Agency for Clinical Innovation, 2012). Related to Theme 1, participants in our study describe how the COTS model may have an impact on improving the consistency of OA care in New Zealand by standardising the delivery of care for patients with OA and removing access barriers. Adoption of similar models of care across the country has the potential for a positive impact on the musculoskeletal health of New Zealanders.

Optimisation of health resources was identified as Theme 2. This has been long recommended in New Zealand health documents. For example, in 2011, a Ministry of Health document stated the importance of training alternative health professionals to free up the time of specialists to manage more complex patients (Stott et al., 2011). Ministry of Health policy also supports transformational changes through collaboration between varied professionals co-designing clinical pathways to improve patient access and their journey within the public health system (Ministry of Health, 2011). Additionally, the 2011 musculoskeletal workforce services review supported the integration of specially trained physiotherapists into first contact models due to their expertise in managing musculoskeletal conditions (Ministry of Health, 2011). Previous research, conducted in a clinical environment in other high-income countries, has evaluated physiotherapist delivery of FSAs and has found this model to be acceptable in their care trajectory (Button et al., 2019). Physiotherapists are professionally competent in working in these models, including their agreement in treatment recommendations, diagnostic concordance with orthopaedic surgeons, and investigative accuracy (Aiken et al., 2008; Décary et al., 2017; Decary et al., 2016; Desmeules et al., 2013; MacKay et al., 2009). Similarly, our study participants generally had positive views of the triage model of care, with participants supporting the use of physiotherapists to provide FSAs. Overall, our patient participants were not concerned about which health professional they saw. Using specially trained physiotherapists to complete the roles previously undertaken by doctors in OA care could be a favourable option for integration into clinical practice in a New Zealand context.

New Zealand's health system has been reported as providing highly fragmented, poorly coordinated care to service users (Goodyear-Smith & Ashton, 2019). This arises because service users receive care from a wide range of professionals working in many provider organisations and often in siloed situations. An ongoing policy challenge has been to determine how to reduce such fragmentation and achieve more integrated and coordinated care that provides a smooth transition between primary and secondary health services (Cumming, 2011). Previous literature has identified that an OA joint clinic can satisfactorily bridge the gap between primary and secondary care and has received welcome support from GPs (Abbott et al., 2019).

Other research has identified that physiotherapists with specialist training are well-accepted members of the orthopaedic workforce, enhancing integration between primary and secondary care services (Vedanayagam et al., 2021; Williams et al., 2019 . Although funded by secondary care, to the best of our knowledge, our study is the first to report on an orthopaedic triage service delivered by specially trained physiotherapists in New Zealand to provide this model in a community setting. In our study, participant opinion was that the COTS could help GPs and patients navigate the complexities of the public health system. The present study raises the possibility that a triage model can improve the care transition from primary to secondary services through the application of a specialist interface assessment service.

Finally, participants identified several advantages of the COTS with respect to Theme 3 and its ability to embed best practice. Early access to care from a health professional with the appropriate clinical assessment skills and knowledge base has been highly regarded in the literature (Gillis et al., 2014). While many strategies have been put in place to try to reduce waiting time across the country, wait times for initial assessments in orthopaedic services in New Zealand remain longer than anticipated (Cook, 2022). Data have shown waiting times for FSAs have trebled since 2020 due to the rising population and the COVID-19 pandemic (Abbott et al., 2022). Additionally, when a patient waits longer than six months to be seen, there is a risk of significant functional decline (Mahon et al., 2002). This includes important loss of functional mobility and health-related quality of life (Morris et al., 2017; Morris et al., 2018). Reduction in wait time for first assessment is a positive outcome demonstrated in the literature for triage models of care managing hip and knee pain when the physiotherapist acts as a gatekeeper to orthopaedic services (Aiken et al., 2009; Cavka et al., 2015; Doerr et al., 2012; Farrar et al., 2014). Consistent with these findings, and in line with Theme 3, our participants valued the reduced wait times and less travel associated with the COTS model. Participants were pleased with the short wait time in the COTS and felt this contributed to their overall positive experience using this pathway. The average wait time to be seen in COTS was 37 days compared to 156 days in orthopaedics, with a statistically significant difference ($p < 0.0001$) in mean waiting times (Stilwell et al., 2024). Adoption of this model has the potential to improve access by identifying and providing earlier intervention for patients with hip and knee OA.

While this study does contribute to the understanding of the perspectives of a new model of care, it has some limitations. Due to COVID-19, there were smaller subgroups than initially anticipated, which limits the strength of the data. Additionally, as all participants are from a single DHB, caution needs to be exercised when generalising the results to other regions. Finally, the primary researcher (JS) worked as a clinician within the service at the time of the data collection. Although the researcher took steps to reduce bias, this still must be considered when interpreting results.

CONCLUSION

This study has contributed to knowledge on patient, DHB physiotherapist, manager, and GP experiences around an emerging OA model of care in the New Zealand public health system. Our data have shown that participants see potential impact of the COTS, including its ability to improve access, support service users, and reduce hospital pressures. The model also has the potential to bridge the gap between primary and secondary care; however, attention must be taken not to utilise a triage model as another barrier to accessing services. Finally, this study provides a case example that could inform future community models of care in a New Zealand health context.

KEY POINTS

1. This research provides qualitative data on patient, DHB physiotherapist, manager, and GP experience around an emerging OA model of care in the New Zealand public health system.
2. Participants in this study saw benefit in the community orthopaedic triage service (COTS), including its ability to improve access, support service users, and reduce hospital pressures.
3. This case study informs future community models of care in a New Zealand health context.

DISCLOSURES

No funding was obtained for this study.

CONFLICT OF INTEREST

The primary researcher is also a physiotherapist employed by the BOPDHB and worked in the COTS during the time of the data collection.

PERMISSIONS

This study was granted ethical consent by Auckland University of Technology Ethics Committee (reference number 20/36). No additional permissions are required for this manuscript.

CONTRIBUTIONS OF THE AUTHORS

Design conceptualisation and methodology; validation; formal analysis, JS, DR and PL; Data curation, JS; Writing – original draft, JS; Writing – review and editing, JS, DR and PL.

ADDRESS FOR CORRESPONDENCE

Jennifer Stilwell, Clinical Lead Physiotherapist, Hauora a Toi Bay of Plenty, Health New Zealand Te Whatu Ora, Tauranga, New Zealand.

Email: jennifer.stilwell@outlook.com

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Appendix A

RECRUITMENT PROCESS

Subgroup	Recruitment process
1 and 2	Participants who fit the inclusion criteria to be interviewed were identified and initially contacted by orthopaedic administration staff and their information was forwarded to the primary researcher. Within 72 hours following their COTS or orthopaedic appointment, the primary researcher made initial contact with the participant regarding the research study via telephone. Interested patients were provided with relevant information via an information leaflet and verbally by the researcher. This included the reason they were selected to be interviewed, the purpose of the study, and details on what the interview will involve including length of time (DeJonckheere & Vaughn, 2019). In addition, the researcher followed the required ethical principles and informed the participant that withdrawal from the interview would be permissible at any time, participation was voluntary, and information gathered would remain anonymous. The participant was then given the opportunity to ask any relevant questions and allowed 48 hours to process the information. After 48 hours, participants were contacted again and given another opportunity to ask any questions. If they were willing to participate, an interview was arranged within two months of their initial appointment at a time and location that was convenient for the participant.
3	Participants in subgroup three were purposefully selected by the primary researcher as important staff members in the development of the COTS. Potential interview participants were sent an explanatory invitation by email, with participant information by the primary researcher who sought locality approval and ethical clearance regarding the appropriateness for this recruitment process. Information in the invitation email included the reason they were selected to be interviewed, the purpose of the study, and details on what the interview involved including the length of time and format of questions (DeJonckheere & Vaughn, 2019). In addition, the potential interview participant was informed that withdrawal from the interview would be permissible at any time, participation was voluntary, and information gathered would remain anonymous. If they were willing to participate, an interview was arranged at a time and location convenient for the participant. The primary researcher did not have a professional, managerial, or operational responsibility for the participants recruited. This was to minimise any conflict of interest or power relationship.
4	Participants in subgroup four were purposefully selected by the primary researcher as GPs within the Bay of Plenty region who had experience referring into the COTS and the orthopaedic service. Potential interview participants were sent an explanatory invitation by email via their individual practice manager. Information in the invitation email included the reason they were selected to be interviewed, the purpose of the study, and details on what the interview involved including length of time (DeJonckheere & Vaughn, 2019). In addition, the potential interview participant was informed that withdrawal from the interview would be permissible at any time, participation was voluntary, and information gathered would remain anonymous. If they were willing to participate, an interview was arranged at a time and location convenient for the participant.

Appendix B

SEMI STRUCTURED INTERVIEW QUESTIONS AND PROMPTS

Subgroup 1

We are aware that you have recently had an appointment with a physiotherapist about your hip or knee OA. We are interested in your journey in the health system and how you found this experience.

A. Clinical journey

1. What do you understand about your current condition?
2. What has your journey been so far in the management of your hip/knee?
3. What health professionals to date have you seen for your hip or knee OA?
4. [Prompt: Have you seen anyone else?]
5. Prior to this appointment, have you had any experience using the public system for your hip or knee OA?
6. Prior to this appointment, have you seen anyone through the private or ACC system about your hip/knee?

B. Appointment and expectations

Your GP referred you to the community orthopaedic triage service (COTS) for assessment of your knee/hip: Can you tell me…

7. Approximately how long were you waiting for the appointment?
8. What did you expect from your recent appointment with the physiotherapist?
   [Prompts: Why? Did it meet those expectations? Were you informed about what would happen in the appointment?]
9. Can you explain to me what happened in the appointment?
10. What was your experience of this appointment?
    [Prompts: Did you get any advice, diagnosis, treatment, investigations?]
11. How did you feel about seeing a physiotherapist?
    [Prompt: Why?]
12. Would you prefer to see a different professional about your hip or knee pain?
    [Prompt: Why?]
13. Did the appointment differ to your appointment at your local GP?
    [Prompts: What makes it different/the same? Are there any advantages/ disadvantages?]

C. Outcome of the appointment

14. How did the appointment either meet your needs or not meet them?
    [Prompt: Was it worthwhile?]
15. In what way did you find the appointment valuable?
16. What is the plan for the management for your hip/knee pain?
17. Are you confident that your hip/knee pain will be managed following this appointment?
    [Prompt: What makes you feel that way? Do you think there will be a positive outcome?]
18. What advice would you give about improving the value of this service to the health system?
19. What would you like to see improved in this pathway?

Subgroup 2

We are aware that you have recently had an appointment with an orthopaedic specialist about your hip or knee OA. We are interested in your journey in the health system and how you found this experience.

A. Clinical journey

1. Firstly, can you tell me what you understand about the problem in your hip/knee?
2. Before you saw the specialist recently, can you tell me what experience you have had with your hip/knee?
   [Prompts: If this was not their first experience in orthopaedics – what was your previous experience? How did that make you feel? How did you find the service?]
3. What health professionals to date have you seen for your hip or knee OA?
   [Prompts: Have you seen anyone else? How did they make you feel?]
4. What has been your previous experience of seeing a physiotherapist about your hip/knee?

B. Appointment and expectations

5. Prior to your appointment, what did you expect to happen?
   [Prompts: Why? Did it meet those expectations?]
6. Approximately how long were you waiting for the appointment?
   [Prompts: How did this make you feel? Do you have any feedback on the time you waited?]
7. When you arrived at your appointment, what happened initially?
   [Prompt: How did you feel about this?]

8. What was your experience of the appointment with the orthopaedic doctor?
   [Prompts: Did you get any advice, diagnosis, treatment, investigations? How did this make you feel?]
9. How did you feel about the amount of time you spent with the doctor?
10. How did you feel about seeing an orthopaedic specialist?
    [Prompt: Why?]
11. How did this appointment compare to your GP appointment?
    [Prompt: In what way was it different/the same?]
12. Would you have preferred to see a different health professional?
    [Prompt: Why?]
13. In what ways was this appointment different to the one at your local GP?
    [Prompts: What makes it different/the same? Are there any advantages/disadvantages?]

C. Outcome of the appointment

14. How did the appointment either meet your needs or not meet them?
    [Prompt: Was it worthwhile?]
15. In what ways did you find the appointment valuable?
    [How did you find this service?]
16. From this appointment, what is the plan for the management for your hip/knee pain?
17. Are you confident that your hip/knee pain will be managed?
    [Prompt: What makes you feel that way? Do you think there will be a positive outcome?]
18. What other models of care do you think could be more valuable for people with OA?
19. Overall, how did you find this experience/journey?
20. What is your opinion on the orthopaedic service as you have experienced it?

Subgroup 3

I am aware that you have been involved in the development of the community orthopaedic triage service (COTS) project at the Bay of Plenty District Health Board (BOPDHB). I am interested in your experience of being involved with the project and how you think this service will impact the DHB and its population.

A. General questions

1. What is your role in the project?
2. How long have you been involved?
3. In your words, can you describe to me what the project involves?
4. How would you describe your experience in the project so far?

B. Now questions

5. As it currently stands, how would you describe the current position of the project?
6. What are the problems the team are currently trying to solve in this project?
   [Prompt: Are there any others?]
7. In your opinion, which is the most important to solve and why?
8. How do you see this project impacting on the current problems you have identified?
9. In the short term, what do you see as the most important outcomes for the project?
10. How do you think this type of model will impact the DHB?
11. How do you think this type of model will directly impact on patients using the public system?
12. In your opinion, will this model have any impact on other models of care?
13. How does this model impact on care delivery for patient who identify as Māori?
14. From your perspective, what has been the most challenging part of the project so far? And why?

C. Questions about the future

15. In the long term, what do you think the impact of a successful project will have to the DHB?
16. What do you think the long-term impact will be on the service users?
    [Prompt: Are these different? Why?]
17. What does success look like for you and your team?
18. Moving forwards, what do you see are the major obstacles or impediments to the success of the project?
19. What worries do you have about the project moving forwards?
    [Prompt: Why?]
20. What advice would you give to other DHBs trying to implement this type of project?
21. If you were to start this project again, would you approach it differently? And why?

D. Other

Is there anything else that I haven’t asked you that you would like to say?

Subgroup 4

We are aware that you have been referring patients with hip or knee osteoarthritis to the community orthopaedic triage service (COTS) at the Bay of Plenty District Health Board (BOPDHB). I am interested in your experience of using the service.

A. Questions about the past

1. Prior to the implementation of the COTS service, how would you describe the major joint OA referral pathway in the Bay of Plenty?
2. How often would you use the major joint OA referral pathway?
3. What was your previous experience of using this pathway?
   [Prompts: Were there any problems with this referral pathway? Are there any others? Which of these is the most important to solve?]

B. Now questions

4. How long have you been referring into the COTS service?
5. In your words, can you describe to me what the referral pathway involves?
6. Have your referrals increased since the implementation of the new service?
7. How would you characterise the patients you refer into the service?
8. Thus far, what is your experience of referring patients via this pathway?
9. What are the problems you have experienced with this new service?
   [Prompt: Are there any others?]

C. Questions about the future

10. What do you think the impact of this pathway will have to the DHB and its service users?
    [Prompt: Why?]
11. What worries do you have about the pathway?
    [Prompt: Why?]
12. What are the major obstacles or impediments to the success of the pathway?

D. Other

13. Is there anything else that I haven't asked you that you would like to say?