

THE ARTHRITIS AND MUSCULOSKELETAL QUALITY IMPROVEMENT PROGRAM (AMQUIP): A BREAKTHROUGH SERIES METHODOLOGY PROJECT

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ABSTRACT

The Australian government had funded the National Primary Care Collaborative (NPCC) program with funding of \$14.6 million over three years. One of the pilots project was the Arthritis and Musculoskeletal Quality Improvement Program (AMQUIP). The study aims to optimize general practitioners (GPs) management of patients with osteoarthritis (OA) of the hip and knee by identifying gaps between their current practice and best practice. The Breakthrough Series Collaborative methodology with several *Plan-Do-Study-Act (PDSA)* cycles was employed. Participants comprises of 12 GPs/practices from two Victorian Divisions of general Practice (one rural, one metropolitan) with 10 patients per GP/practice. GPs/practices attended an orientation and three learning workshops and a videoconference. GPs/practices completed PDSA cycles between workshop and reported results at workshops. GPs/practices reported use of guidelines, change in patient management and change in practice management/systems. All recruited patients completed the SF-12v2 Health Survey and WOMAC OA Index Questionnaire twice. Follow up activities including focus groups and face-to-face interviews were held six months after the final workshop. All GPs/practices used the guidelines/key messages, introduced "new" management strategies to patients, and made positive changes to their practice management/systems. Patient reported positive changes and outcomes. By using a structured methodology and evidence-based guidelines/key messages; GPs can introduce new patient management strategies, and by identifying gaps in practice management systems, positive changes can be achieved.

INTRODUCTION

There is an international effort to improve the application of what is known to work in patient care to the patients who need it most. Combining the effort of the academic research community and the quality improvement movement would enable maximum complementary effect.¹⁻⁵

Institute of Health Improvement (IHI) in Boston, United States introduced quality improvement project using the Breakthrough Series Methodology (BTS) since 1995 and has been continuously improving. IHI developed the BTS to help organizations make breakthrough improvements in quality while reducing costs.^{6,7} It was then introduced in United Kingdom (UK) by Sir John Oldham, a general practitioner. He has modified and applied the IHI's "breakthrough" methodology to UK primary care. The National Primary Care Collaborative (NPCC) has been implemented throughout the UK by the National Primary Care Development Team (NPDT).⁷ The United Kingdom NPCC is said to be the largest health service improvement in the world. Improvement such as a 60% reduction in waiting times to see a general practitioner,⁸ a four-fold reduction in coronary heart disease mortality⁴ and many others have drawn the attention of policy makers in Australia. The Australian government had funded of National Primary

Care Collaborative (NPCC) program with funding of \$14.6 million over three years period.⁹ One of the pilot project receiving is the Arthritis and Musculoskeletal Quality Improvement Program (AMQUIP) under the General Practice Department, Monash University.

A collaborative is a strategy for achieving rapid improvement in clinical outcomes through bringing providers together. This is achieved through running a series of workshops separated by action periods. Clinicians share and learn ways of improving their organizations in order to achieve an identical goal.⁵

I arrived in Melbourne in early September 2005 to pursue my training on "Non-Communicable Disease in Primary Care" in Monash University for one year. I am very fortunate because that was the time when the Department of General Practice as one of the 11 successful applicants started the Arthritis and Musculoskeletal Quality Improvement Program (AMQUIP). OA is the leading cause of musculoskeletal pain, disability and handicap in Australia.⁶

The Monash AMQUIP project focused on the management of OA of the hip and knee in general practice by using the BTS collaborative methodology with Plan-Do-Study-Act (PDSA) cycles. It was a short term collaborative learning system that

brings together large number of teams from primary care clinics or hospitals to seek improvement. The Model of Improvement asks three questions: (1) what are we trying to accomplish (aim)? (2) How will we know that a change is an improvement (measures)? (3) What changes can we make that will result in improvement (changes)? Quality improvements collaborative are being used to achieve better outcomes.¹¹

METHODOLOGY

The BTS collaborative methodology using the Improvement model with several Plan-Do-Study-Act (PDSA) cycles is a specific quality improvement approach, design to improve process of care (patient management) and service delivery (practice management). The actions periods take place serially between workshops, when participants test and implement changes in their local setting, collect data and measure impact of the changes.⁶

The topic was selected (OA of the hip and knee) and experts from relevant specialty (rheumatologist, pain management specialist, consumer representative, methodology, literature, general practice) recruited as Expert Reference Panel (ERP). An orientation and three learning workshops with three PDSA cycles took place over seven months from, October 2005 to April 2006. The workshop and discussions were held approximately eight weeks apart. Feedback and support was provided at workshops, via email, video-conference, telephone contact, and visits to practices.

Use of Guidelines

The Australian Cochrane Centre conducted a literature review about guidelines available for the management of OA of the hip and knee. Summary of the guidelines/key messages were given to the participants.

Participants

Two Divisions of General Practice (Bendigo and Monash) with geographic links to Monash University each recruited six GPs/practices, who in turn recruited 10 patients (five OA of hips and five OA of knee) who met the selection criteria. The intervention was "practice-based", thus the term "GPs/practices" includes GPs and their staff.

Intervention

GPs/practices referred to the guidelines/key messages when managing patients, reported their use of guidelines/key messages and recorded patient management changes. GPs/practices used PDSA cycle to identify, and work on gap/s in practice management/systems. Changes were reported at the workshops. Participating patients completed the SF-12v2 Health survey¹² and WOMAC OA Index questionnaire¹³ twice – once after the orientation workshop and once after the

completion of the third PDSA cycle. Follow-up was conducted six month after the final learning workshop. Three focus group discussions and four face-to-face interviews were conducted for the purpose of evaluating sustainability, generalisability, co-morbidities and barriers, and comparing the responses of those who were not, involved in the project.

RESULTS

A nominal approach to capturing change was adopted. All data was recorded on two standardized pro-formas; one for patient management change, and one for guidelines/key messages use and practice management/system change. All data were collected and reported at baseline and after the three PDSA cycles, analysed by the project management team, and reported and discussed at the learning workshops. Details of the pilot study results have been published by Jones K *et al.*¹¹

Participation

Both Divisions remain involved throughout the project. A total of 116 patients were recruited and 112 remain involved throughout the projects.

Intervention

The following were the results of the intervention:

- *Use of guidelines by the GPs.* Availability of evidence, the considerable number of guidelines, the difficulty synthesizing and then using this information in day-to-day management were all discussed at the workshops. Use was reported as opportunistic rather than systematic.
- *Change in patient management.* Of the 116 patients, 107 had at least one "new" management strategy introduced ("new" was defined as something not recorded in patient's management at baseline). Co-morbidities were recorded for 96/116 patients, and of these, 80 patients had multiple co-morbidities recorded.
- *Change in practice management.* During orientation workshop all GPs commented that they may have difficulty identifying 10 patients with OA. This disclosure led to significant discussion about information (IT) systems; particularly how data was entered/recorded and how information could/not be accessed/retrieved. Thus the focus during the first PDSA cycle was generally on clinical systems. All GPs/practices achieved a positive outcome by generally updating medical records. During the second PDSA cycle the focus moved to patient management and the third PDSA cycle, focus generally remained on patient management options.

One metropolitan GP developed a new data system that linked the GP's software package for medical billing (Pracsoft Billing) to GP Management Plan and TCA and facilitated the provision of patient reminders for reviews. The software was made available to all GPs in the project.

- **Patient feedback.** All patients completed the SF12v2 Health Survey, WOMAC OA Index Questionnaire, and face-to-face interview. Overall, there was little difference between responses by rural and metropolitan patients. Results from the SF-12v2 survey indicate that overall, 38% reported a "decrease" in their pain, 20% reported "no change" and 37% reported "increase" in pain. Results of WOMAC questionnaire indicate that 49% reported a "decrease" in their pain, 11% reported "no change" and "34% reported an "increase" in pain.
- **Follow-up after six months.** Three focus group and four face-to-face interviews were held six months after the completion of the final learning workshop. Five questions were asked of all participants includes sustainability, use of guidelines, barriers in care and learning, co-morbidities in particular obesity.

DISCUSSION

As an observer, this project has proved an interesting and rewarding experience for me. I have managed to follow the GPs in the Monash Division and attended all the sessions. The overwhelming feeling through out the whole period is getting the opportunity to follow a research project with a new methodology. Literature search reveal no publish work in Malaysia using this methodology.

Most of the sessions were done after hours, starting from 7.00pm onwards, once the GPs finished with their clinic sessions. This commitment really impressed me. The workshops session started with light refreshment and usually last about three hours. These workshops session were also useful in developing research ideas for me.

I also realized the good networking between the Department General Practice Monash University; Monash and Bendigo Division of General Practice; Cochrane Centre and other departments in the university. Following discussions are some of the important issues arising from the workshops which may need to be considered by other research group embarking on similar projects.

For of all, the guidelines/key messages document was reported by some GPs as cumbersome; this may have reduced the use of this documents. It is very challenging to carry out the project due to time constraint and this may have limited the type and number of activities undertaken by the GPs/practices. Finally, while funds were available to reimburse GPs/practices for their involvement, no data about costs associated with implementing and maintaining changes was collected. A cost analysis would be an essential component evaluating sustainability, particularly in the absence of financial reimbursement.

GPs/practices also identified challenges, including difficulties finding relevant information about OA (both online and through local agencies), finding relevant exercise programs in the local area, finding the expertise in their practice teams to completes the tasks.

The GPs/practices also reported benefits taking part in the project. The project became a catalyst for cohesion, resulting in a better dissemination of information between GPs and their staff. GPs also reported they found themselves and their staffs were empowered with the implementation of patient management/information systems. The patients reported positive outcomes and were empowered to participate in self-care through being introduced to new treatment, learning more about their condition and what they can do for themselves through the provision of educational information. More active managements were transferred to the patients other than those involved in the project.

Results from this pilot project study demonstrated that when a structured methodology is used, participants are supported and work together. When GPs use evidence-based guidelines/key messages, patients can be introduced to new management strategies, and when GPs/practices identify gaps in practice management and systems, positive and sustainable change can be achieved. It would be of value to conduct a follow-up study and undertake a randomised controlled trail to demonstrate validity and reliability and long-term follow-up to demonstrate sustainability.

Research in primary care is essential to inform practice and to develop better health system and health policies. The BTS collaborative methodology offers a framework for bringing about dramatic and lasting change. The rapid spread of the BTS model has shown that health care organizations around the world will avidly embrace effective methods for improving all aspects of their patients' care. Similar strategies should be introduced in Malaysia.

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Where to find clinical quizzes?

1. **Photo Quiz: American Family Physician.** [go to the journal website and look for "Photo quiz". http://www.aafp.org/afp/accessories/browse/?op=get_documents_via_department_id&department_id=7
2. **Skin and eye cases from Canadian Family Physician.** Type "Canadian family physician" and either "dermacase" or "ophthaprobem" (no need quotes) in Google (www.google.com)
3. **Evidence-based Eye Care.** <http://www.ebeyecase.ca/>
4. **Quizzes and Clinical Challenge from Australian Family Physician.** Go to *Australian Family Physician* website (<http://www.racgp.org.au/afp/>). Use the search box to look for quiz or clinical challenge
5. **Quizzes from Student BMJ.** Go to Student BMJ website (<http://student.bmj.com>). Use the search box to look for quiz.
6. **ECG Quiz. The Six Second ECG Workbook.** <http://www.skillstat.com/sixsecondECG.htm>
7. **Quizzes from Hong Kong Practitioner.** Go to Google Scholar (www.scholar.google.com), Select "Advance Search", type "quiz" (Select "in the title of the article" in the search box "where my words occur") and type "Hong Kong Practitioner" (in Publication search box).