

Patient compliance with a group model of care: the hernia clinic

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Background: In February 2006, a hernia clinic was established at the Queen Elizabeth II Health Sciences Centre in Halifax, Nova Scotia. It was based on a group model of care and was established to increase effective use of resources to reduce waiting times. We conducted a survey of patients referred to the hernia clinic to determine compliance.

Methods: We developed and mailed a questionnaire to all patients who had surgery after assessment at the hernia clinic. Data were analyzed for the entire study group and for 2 subgroups: patients in group I had the same surgeon for assessment and surgery, whereas patients in group II had a different surgeon for assessment and surgery. Differences between subgroups were assessed using the 2-tailed Fisher exact test. Waiting times were recorded.

Results: In all, 94 patients responded to the survey. Of these, 67% had the same surgeon for assessment and surgery, and 31% had a different surgeon; 2% were not sure. Two-thirds were comfortable having their surgery performed by a surgeon whom they met the day of surgery. Most patients had confidence in the competence of any surgeon and considered service to be better and faster in a specialized centre. Most felt that a group of surgeons providing hernia care uses resources more effectively. The waiting times from referral to initial consult decreased from 208 (standard deviation [SD] 139) days in 2007 to 59 (SD 70) days in 2009.

Conclusion: Patient compliance with a group model of care for hernia surgery is high.

Contexte : En février 2006, le Centre des sciences de la santé Queen Elizabeth II de Halifax, en Nouvelle Écosse, a ouvert une clinique de traitement de l'hernie inspirée d'un modèle de soins regroupés dans le but de promouvoir une utilisation plus efficace des ressources et de réduire les temps d'attente. Nous avons procédé à un sondage auprès des patients adressés à la clinique afin d'évaluer leur observance thérapeutique.

Méthodes : Nous avons rédigé et posté un questionnaire à tous les patients qui avaient subi une chirurgie après avoir été examinés à la clinique de traitement de l'hernie. Nous avons analysé les données de l'ensemble du groupe et de 2 sous-groupes : les patients du groupe I avaient été examinés et opérés par le même chirurgien, tandis que les patients du groupe II avaient été examinés et opérés par des chirurgiens différents. On a appliqué la méthode bilatérale exacte de Fisher pour mesurer les différences entre les groupes et on a noté les temps d'attente.

Résultats : En tout, 94 patients ont répondu au questionnaire. Parmi eux, 67 % avaient eu le même chirurgien lors de l'examen et de l'opération et 31 % avaient eu des chirurgiens différents; 2 % étaient incertains. Les deux tiers se disaient à l'aise de subir leur opération aux mains d'un chirurgien rencontré le jour même. La plupart se disaient confiants en la compétence des chirurgiens en général et jugeaient le service de meilleure qualité et plus rapide dans un centre spécialisé. La majorité des patients ont aussi estimé qu'un regroupement de chirurgiens consacrés au traitement de l'hernie permet une utilisation plus efficace des ressources. Les temps d'attente entre la demande et la première consultation est passé de 208 jours (écart-type [ÉT] 139) en 2007, à 59 jours (ÉT 70) en 2009.

Conclusion : L'observance des patients à l'endroit du modèle de soins regroupés pour la chirurgie de l'hernie est élevée.

Waiting for elective surgery is today's main concern in Canadian health care. Some consider the long waiting lists to be the Achilles heel of Canadian medicare.^{1,2} In 2005, the federal government and the provincial ministries of health announced a \$41 billion initiative to reduce

waiting lists.³ Several projects have been initiated to decrease waiting lists and improve effective use of resources; the Joint Replacement Access Clinic at Lions Gate Hospital in British Columbia, the Richmond Hip and Knee Reconstruction Project and the Alberta Hip and Knee Replacement Pilot Project are examples.⁴ Common waiting lists instead of waiting lists for individual physicians and sharing resources among groups of health care providers have been found to be helpful in reducing and equalizing waiting times and increasing capacity of care.⁴

In February 2006, an initiative for a joint hernia clinic at the Queen Elizabeth II Health Sciences Centre (QEII) in Halifax, Nova Scotia, was developed to improve access to surgery for patients with groin, umbilical and epigastric hernias. Until that time, patients with hernias had been referred to any of the general surgeons at the QEII. Patients were assessed by the individual surgeons and scheduled for surgery in the operating time allotted to the individual surgeons. Waiting times for initial consultation and surgery varied widely owing to variation in case load and focus of practice. Some patients had to wait as long as 18 months for surgical repair of a hernia.

The hernia clinic is a joint clinic run by 4 general surgeons, a fellow in minimally invasive surgery, surgical residents, medical students, a registered nurse, a research nurse, a data manager and an administrative assistant. The surgeons take turns attending the hernia clinic based on availability. A specific database for the hernia clinic patients has been developed in which physicians, nurses and administrative assistants enter all clinical data. When surgery is indicated, nurses provide standardized education to the patients. Patients are placed on a common waiting list for hernia surgery. The administrative office of the hernia clinic schedules operating time designated for hernia surgery. Surgeries are preferably performed consecutively on the same day and by the same surgical team at Hants Community Hospital, one of Capital Health's sites. The general surgeons who participate in the hernia clinic perform hernia surgery on a rotational basis.

At the onset of the hernia clinic, a letter was sent to family doctors informing them about the principles of the hernia clinic, including a specific fax number for referrals. Referrals for patients with groin, umbilical and epigastric hernias or groin pain received by the offices of all general surgeons were forwarded to the hernia clinic. All referrals were triaged by 1 surgeon to confirm appropriateness.

Patients received a letter stating the date and time of the clinic appointment together with information about hernias, the hernia clinic, a health questionnaire and a quality of life questionnaire. Patients were informed in writing and during the clinic visit that surgery might be performed by a surgeon other than the one conducting the assessment. Patients were offered the option of requesting a specific surgeon.

One of the concerns regarding a group model of care is patient compliance. The objective of the present study was to

assess patient compliance with our group model of care and to monitor waiting times from referral to first assessment.

METHODS

We developed a questionnaire comprising 19 items to assess patient compliance with the hernia clinic and their comfort with having different physicians involved in their care. The first 9 questions referred the assessment at the hernia clinic and to the hernia surgery. The last 10 items were statements that patients were asked to rate on a 4-point Likert scale (Box 1) ranging from strongly agree to strongly disagree. The questionnaires were mailed to all patients who had surgery after assessment in the hernia clinic.

Data were analyzed for the entire study group and for 2 subgroups; patients in group I had the same surgeon for assessment and surgery, whereas patients in group II had a different surgeon for assessment and surgery. We compared both groups with regards to first assessor, surgery-related problems and outcomes. We then analyzed the significance of differences between the 2 groups. We divided the answers into 2 categories: the agree/strongly agree category and the disagree/strongly disagree category. The answer "not applicable" was added to the disagree/strongly disagree category.

All questionnaire responses were confidential; no questionnaires could be linked to the responding patient. Data were entered and analyzed in SPSS software, version 13.0. Differences were calculated using the 2-tailed Fisher exact test. We considered results to be significant at $p < 0.05$.

Box 1. Contents of the questionnaire

1. Did your first assessment take place at the hernia clinic?
2. Who did your assessment?
3. Do you remember the name of the assessing surgeon?
4. Do you remember the face of the assessing surgeon?
5. Was the surgeon who assessed you the same as the surgeon who did your surgery?
6. Do you remember the name of the operating surgeon?
7. Do you remember the face of the operating surgeon?
8. Where did you undergo surgery?
9. Did any surgery-related problems occur?
10. It is important to me that the same surgeon assesses my hernia and does the operation.
11. I had confidence in the surgeon doing my assessment.
12. I had confidence in the surgeon doing my surgery.
13. I have confidence in the competence of any surgeon working in the hernia clinic.
14. I believe service is better in a specialized centre like the hernia clinic.
15. I believe service is faster in a specialized centre like the hernia clinic.
16. I believe that a group of surgeons providing hernia care uses resources effectively.
17. I understood I could request the assessing surgeon also to do my surgery.
18. I understood that if I chose the assessing surgeon also to do my surgery that the wait time might be longer.
19. I am comfortable having my surgery performed by a surgeon whom I meet on the day of surgery.

RESULTS

Between February 2006 and March 2007, 236 patients had hernia surgery after assessment in the hernia clinic. Four patients were excluded because their home addresses were unknown, and questionnaires were mailed to 232 patients; 105 questionnaires were returned. Of these, 9 were returned undelivered because patients had moved. We excluded 3 questionnaires because the patients had cancelled their surgery. One patient had died. A total of 94 questionnaires were available for analysis, representing a 40% response rate.

Initial assessment

At the assessment in the hernia clinic, 84% of respondents were seen by a surgeon only, whereas 8% were initially seen by a resident. Those who were initially assessed by a resident were subsequently assessed by a surgeon. About 8% of respondents were unaware whether they had been seen by a surgeon or a resident.

Remembering the surgeon

Most respondents remembered the name and face of the assessing surgeon as well as the name and face of the operating surgeon (Table 1). The number of respondents who remembered the name and face of the operating surgeon was higher than the number who remembered the name and face of the assessing surgeon, but this difference was not significant ($p = 0.14$).

Subgroup analysis

The last 10 items of the questionnaire contained statements about a group model of care, and patients were asked how strongly they agreed with the statements. Data were analyzed for the entire study group and for the 2 subgroups. Patients in group I ($n = 63$) had the same surgeon for assessment and surgery, whereas patients in group II ($n = 29$) had a different surgeon for assessment and surgery; 2 patients weren't sure whether they had the same surgeon.

There was no difference between the groups in postoperative complication rate and no difference in who assessed the patient first (Table 2).

In group I, 98.4% of respondents considered it important to have the same surgeon for assessment and surgery compared with 48.3% in group II ($p < 0.001$, Table 2). In

Memory	Yes, %	No, %	Unsure, %
Name of the assessing surgeon	79.3	12.0	8.7
Face of the assessing surgeon	75.0	17.4	7.6
Name of the operating surgeon	86.2	8.5	5.3
Face of the operating surgeon	82.8	11.8	5.4

group I, 98.4% of respondents had confidence in the assessing surgeon compared with 86.2% of patients in group II ($p = 0.034$). All patients in group I had confidence in the operating surgeon compared with 86.2% of patients in group II ($p = 0.009$).

Two-thirds of respondents had confidence in the competence of any surgeon and believed that service was better and faster in a specialized centre like the hernia clinic. The majority also believed that a group of surgeons providing hernia care uses resources more effectively.

In all, 52.2% of respondents understood that they could request the assessing surgeon to perform their surgery (59.0% in group I v. 41.4% in group II, $p = 0.18$). Half of all respondents understood that if they requested the assessing surgeon to perform their surgery, the waiting time might increase (49.2% in group I v. 55.2% in group II, $p = 0.66$). On average, two-thirds of respondents were comfortable having their surgery performed by a surgeon whom they meet the day of surgery (59.7% in group I v. 75.9% in group II, $p = 0.16$).

Waiting times

The waiting time from referral from the family doctor to initial consult in the hernia clinic decreased from 208 (standard deviation [SD] 139) days in 2007 to 59 (SD 70) days in 2009.

DISCUSSION

In 2003, an extensive survey was designed by the Canadian

Table 2. Results of analysis of the entire sample and analysis of the subgroups

Result	Group,* %			p value
	Entire group	Group I	Group II	
Assessed by resident/student	8.5	6.5	14.3	0.22
Presence of surgery-related problems	17.0	19.0	13.8	0.76
Importance of same surgeon	82.8	98.4	48.3	< 0.001
Confidence in assessing surgeon	94.6	98.4	86.2	0.034
Confidence in operating surgeon	97.5	100	86.2	0.009
Confidence in competence of any surgeon	67.0	65.6	71.4	0.63
Service is better in a specialized centre	88.6	90.2	89.7	> 0.99
Service is faster in a specialized centre	78.3	80.3	75.9	0.78
Resources used effectively	87.1	83.9	93.1	0.32
Understanding possibility to request same surgeon	52.2	59.0	41.4	0.18
Understanding that request might increase waiting time for surgery	53.3	49.2	55.2	0.66
Comfortable meeting surgeon day of surgery	65.6	59.7	75.9	0.16

*Group I comprised patients who had the same surgeon for assessment and surgery, whereas group II comprised patients who had different surgeons.

government to collect data regarding patients' experience accessing health services.⁵ One of the topics of the Health Services Access Survey was access to specialized services. Nationwide, 32 005 people filled out the survey, 2930 of whom resided in Nova Scotia. Thirteen percent of the population in Nova Scotia visited a specialist in 2003 and 9% required elective surgery.

In Nova Scotia, 13% of patients waited more than 3 months for a consultation with a medical specialist for a new illness or condition compared with 11% nationwide. When the joint hernia clinic was established in 2006, waiting times from referral to consult with a surgeon were longer than 6 months. The Health Services Access Survey showed that two-thirds of patients who were waiting for elective surgery, such as hernia repair, experienced worry, anxiety and stress, and one-third had problems with their daily activities owing to waiting. Almost 20% of patients considered the waiting time for nonemergency surgery to be unacceptable.

The primary goal of our survey was to determine compliance with a group model of care with a common waiting list in the hernia clinic. The joint hernia clinic was established to improve access to consultation and elective hernia surgery. The hernia clinic pooled patients on one common waiting list and standardized perioperative care. One of the parameters to measure access to elective surgery and the success of a common waiting list is waiting time. In our experience, waiting times from referral to initial consult in the hernia clinic dropped from 208 days in 2006, when the project was started, to 59 days in 2009. These numbers clearly demonstrate the effectiveness of a common waiting list.

Similar projects to improve access to elective surgery have been initiated in the last couple of years throughout Canada. The Joint Replacement Access Clinic at Lions Gate Hospital in British Columbia substantially shortened their waiting times for hip and knee replacement after the project started in 2005.⁴ Patients were pooled on a common waiting list, and they agreed to accept the first surgeon available or one of their own choice. A single clinic was developed with dedicated personnel, such as trained nurses, clerks and orthopedic surgeons, to coordinate and streamline all aspects of care before and after joint replacement, including laboratory tests and radiography. Waiting times for a first surgical consult were reduced from 1 year to 2–4 weeks. Waiting times for surgery from the decision that surgery was indicated to actual operation decreased from 2 years to 6 months or less.

Two other initiatives to shorten waiting times for hip and knee replacement are the Richmond Hip and Knee Reconstruction Project and the Alberta Hip and Knee Replacement Pilot Project. Both projects reorganized and improved the complete surgical process by providing all facets of care in a single focused centre, standardizing surgical procedures and clinical practices and using recourses

more efficiently. The Richmond Hip and Knee Reconstruction Project in the lower mainland of British Columbia reduced waiting times by 80%, from 20 to 4 months, within 2 years.⁶ The Alberta Hip and Knee Replacement Pilot Project reduced waiting times for consultation with an orthopedic surgeon from 145 to 21 working days and reduced waiting times for surgery after the decision that joint replacement was indicated from 58 to 7.5 weeks.⁷

Our study shows that patients' confidence in surgeons is high. Even if patients have a different surgeon for their operation than for their assessment, their confidence is high (86.2%). Our study also shows that almost all patients who have the same surgeon for assessment and surgery deem this important, but that most patients who actually have a different surgeon no longer consider it to be important. When patients are unfamiliar with the concept of having a different surgeon for their operation, they indicate that they have less confidence in the operating surgeon and that having the same surgeon is important to them. However, when they ultimately have a different surgeon for their procedure, they no longer consider this to be important and they express a high level of confidence in the actual operating surgeon. This result demonstrates that patients are very flexible in terms of their preferred doctor.

Limitations

A limitation of this study is its response rate, which was 40%. The experiences of the nonresponders are unknown, which could create bias.

CONCLUSION

In our survey we asked patients whether they believed that service in a specialized centre like the hernia clinic was faster and better. We also inquired if they believed resources were used more efficiently. About 80% of all respondents agreed or strongly agreed with these statements. In addition, two-thirds of respondents had confidence in the competence of any surgeon. These results show the great public support to a group model of care, and results stimulate expanding of a group model of care to decrease waiting times and use health care resources more efficiently. Further studies tracking patient compliance are necessary in addition to the development of a valid standardized method to measure patient compliance. Ongoing documentation and analysis of patient compliance data are mandatory to enhance transformation to patient-centred health care.

The Canadian health care system has a long tradition of allowing patients to choose a surgeon of their preference. In a group model of care, the choice to request a specific surgeon exists, although this may result in longer waiting times. Our survey results showed that almost half (48%) of all respondents did not understand this possibility, even

though patients were informed in writing before the clinic visit about the possibility of choosing their surgeon. Communication skills are 1 of 7 CanMEDS competencies⁸ that surgeons and physicians are expected to attain. For future implementation of a group model of care, our abilities as communicators need to improve, and patients need to understand that they still have the right to choose a surgeon of their preference.

Patient compliance with a group model of care for hernia surgery is high. Access to health care can be improved by using this model. More experience with this model needs to be accumulated.

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