Implementing shared decision-making in routine practice: barriers and opportunities

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Abstract

Objective Determine feasibility of shared decision-making programmes in fee-for-service hospital systems including physicians' offices and in-patient facilities.

Design Survey and participant observation. Data obtained during Phase 1 of a patient outcome study.

Settings and participants Three hospitals in Michigan: one 299-bed rural regional hospital, one 650-bed urban community hospital, one 459-bed urban and suburban teaching hospital. All nurses and physicians who agreed to use the programmes participated in the evaluation ($n = 34$).

Intervention Two shared decision-making® (SDP) multimedia programmes: surgical treatment choice for breast cancer and ischaemic heart disease treatment choice.

Main outcome measures (1) clinicians' evaluations of programme quality; (2) challenges in hospital settings; and (3) patient referral rates.

Results SDP programmes were judged to be clear, accurate and about the right length and amount of information. Programmes were judged to be informative and appropriate for patients to see before making a decision. Clinicians were neutral about patients' desire to participate in treatment decision-making. Referral volume to SDPs was lower than expected: 24 patients in 7 months across three hospitals. Implementation challenges centred on time pressures in patient care.

Conclusions Productivity and time pressure in US health care severely constrain shared decision-making programme implementation. Physician referral may not be a reliable mechanism for patient access. Possible innovations include: (1) incorporation into the informed consent process; (2) provider or payer negotiated requirement in the routine hospital procedure to use the SDP as a quality indicator; and (3) payer reimbursement to professional providers who make SDP programmes available to patients.

Introduction

'Shared decision-making' in routine clinical practice is a model that brings patients into the decision-making process. It brings together consumer involvement in health care, evidence-based decision-making and egalitarian models of the doctor–patient interaction. European and US advocates of informed patient choice anticipate that shared decision-making will improve clinical effectiveness, patient satisfaction with care and (perhaps) cost effectiveness. These expectations are based on the assumption that patients' and physicians' self-interest should produce an optimal balance when informed by treatment effectiveness evidence. A model of the path to evidence-based clinical practice proposed by Haynes *et al*. suggests a key role for shared decision-making.[1] They show a trajectory from generating research evidence through synthesizing the evidence, developing evidence-based clinical policies and finally, including the patient's circumstances and the patient's wishes. They suggest that barriers to this process are different for practitioners and for patients. Practitioners have trouble in finding, assessing, interpreting and applying current best evidence. Patients need to have research evidence integrated with their clinical circumstances and wishes to derive a meaningful decision about management. There is growing availability of patient information tools that not only aim to inform a patient about risks and benefits, but also describe a choice. Shared decision-making tools frequently address treatment decisions with competing efficacious treatments having different trade-offs among risks, costs and benefits of treatments. Such decisions require careful consideration of risk, outcomes and patient values. Shared decision-making tools present the amount of gain in life and the quality of that life. Each medical intervention is described from the point of view of patient experience including convenience, recovery time and side-effects of treatment options. Shared decision-making tools invite the patient to consider how he or she values the health outcomes.[2–4]

While the idea of shared decision-making and consumer education is widely supported[5–9], shared decision-making tools have been adopted primarily by staff model Health Maintenance Organizations (HMOs) such as those in the Kaiser Permanente system and Group Health of Puget Sound and in academic settings.[10,11] To evaluate the potential of shared decision-making programmes to improve the quality of care in routine care outside academic and HMO settings, a health insurer, Blue Cross and Blue Shield of Michigan (BCBSM) undertook to introduce shared decision-making in its fee-for-service hospital systems. The BCBSM objectives were: (1) to provide a high-quality, cost-effective benefit to BCBSM members; (2) to improve quality of care, including patient and provider satisfaction; and (3) to help manage health care utilization and costs. BCBSM selected its fee-for-service settings because of the high proportion of its enrollees in such settings and because fee-for-service systems do not provide as many mechanisms to implement cost control and quality improvement interventions as do managed care settings. BCBSM has 4 588 852 members enrolled through customers with headquarters in Michigan. Of that number, 82% (3 768 949 members) are covered under fee-for-service contracts. We report here the initial results of a 2-year programme to implement and evaluate a shared decision-making programme.

Methods

Hospital selection

BCBSM distributed a letter of interest statewide to Michigan hospitals soliciting collaborative participation in the shared decision-making programme (SDP) research project. Hospitals were informed in the letter that BCBSM was seeking one or two hospitals to evaluate the programmes. Hospitals were provided with a detailed background describing the theory of informed patient decision-making and the specific interactive video programs available. BCBSM provided an overview of BCBSM and

hospital roles and responsibilities in the study, stressing the collaborative nature of designing the study.

Interested hospitals were asked to provide evidence of: (1) demonstrated desire to use innovative patient quality improvement strategies; (2) strong physician leadership that is actively involved in the hospital's quality improvement effort; (3) membership in a hospital system or medical centre with clearly defined specialty units and associated physician specialists; (4) adequate volume of patients with the condition featured in the selected video(s) to ensure a minimum level of experience for the test project; (5) appropriate location to house the SDP and allow patient viewing, such as a patient training room or library; and (6) staff support to assist patients when operating the video equipment, and collect and record patient data.

Hospitals were asked to identify their demographics, including geographic region served and affiliated hospitals, videos of interest and patient volume for each clinical condition in the programme series. Hospital selection was based on scoring in four general areas collected from responses to the letter of interest and the site visit: hospital interest (40%), physician involvement/support (40%), operations/facilities (10%), capacity for evaluation and research (10%).

Five hospitals were selected as finalists. The BCBSM made site visits to each of the finalists to provide an opportunity for BCBSM and hospital clinical, administrative and professional staff to meet and discuss any questions related to the study; and to give BCBSM an opportunity to view the potential study site. BCBSM selected three hospitals. All agreed to participate. Each identified a nurse to be the Study Coordinator for the site. Northern Michigan Hospital Healthshare Group (Petoskey, MI, USA) is a 299-bed rural regional hospital serving 24 counties. It is a nonteaching hospital. SDP programmes were offered through the Community Health Education Centre adjacent to the hospital. Oakwood Hospital and Medical Centre (Dearborn, MI, USA) is a 650-bed urban community hospital serving the metropolitan Detroit area. It is a teaching hospital. SDP programmes were offered through the Cardiology Education and Research Department located in the hospital. Providence Hospital and Medical Centres (in Novi and Southfield, MI, USA) is a 459-bed urban teaching hospital serving Detroit and the Northwest suburbs. SDP programmes were offered through the Health Education Library at the Medical Centre in Novi and at the hospital's Cancer Centre in Southfield.

Clinician recruitment

Hospital Study Coordinators identified those clinicians (physicians, nurses, social workers) directly involved with patient decision-making in the selected clinical areas. Clinical leaders and those most actively involved in patient care in the areas of the SDP selected programmes were recruited. At the Ischaemic Heart Disease Programme (IHD) site, the administrator who championed the SDP was included in the pool of evaluators. Hospital study coordinators approached clinicians personally to request participation in referring patients to the study and evaluating the SDP programmes. Reviewing the videotape and completing the survey was a condition of participation in the programme. From the three sites, 34 out of 35 clinicians viewed the video and returned the questionnaire.

Nurses and physicians recruited to participate in the programme were asked to view and evaluate the programme using previously validated items assessing length, clarity and amount of information and potential bias in the programmes.[12] A single item assessed consistency of programme content with prior knowledge. Clinicians were also asked to rate the patient relevance, patients' receptivity to sharing in decision-making and the likely operational impact of using the SDP in practice. The survey provided clinicians' assessment of programmes before the operational phase brought actual patients to the programme. The sample was recruited to give the SDP programmes the best opportunity to succeed. It was not intended to

be representative of all clinicians in fee-for-service practice. Key physicians identified were a breast cancer surgeon at Providence Hospital, a breast cancer surgeon and a prostate cancer surgeon at Northern Michigan Hospital and a cardiologist at Oakwood Hospital. Each provided his/her own reviews of the SDP programmes and agreed to lead patient accrual to the programmes.

Shared decision-making programme selection

The shared decision-making programmes selected were the set of interactive videodisks called the Shared Decision-making Programs®, developed by the Foundation for Informed Medical Decision-Making (FIMDM).[13,14] The programmes were selected because of their overall quality, the evidence base and the shared decision-making philosophy. The SDP programmes aim 'to make it possible for a physician and a patient to efficiently make a treatment selection that reflects, not only important clinical considerations, but also the values and preferences of the patient.[14] At the time the study began, the programmes included early stage breast cancer, chemotherapy following breast cancer, early stage prostate cancer and ischaemic heart disease. The programmes describe treatment choices and provide probabilities of risks tailored to patients' specific characteristics. Videotaped patient interviews describe patient experiences with the treatments and their outcomes.[10,13] Selection of specific programmes to be used in practice was left to the participating hospitals.

Survey and participant observation

To insure local acceptance of the programmes and to fit the programme into existing routines, hospitals were asked to identify study coordinators who would work with local physicians and nurses to implement the programmes. The Study Coordinators recruited clinicians and participated in development and administration of surveys. They were involved in the study as participant observers, keeping a log of patient flow and documenting conversations with patients and physicians about any problems. The purpose of the log was to document institutional challenges and barriers to implementing the SDP in hospital systems. Members of the evaluation team, including hospital Study Coordinators (Draus, Nabozny-Valerio, Keiser), BCBSM staff (Valade, Orlowski) and the consultant (Holmes-Rovner), developed a common protocol for SDP implementation. Study Coordinators' daily observation logs consisted of daily notes of discussions with clinicians and administrators about the SDP and a narrative of observations about patient flow processes, including barriers and implementation difficulties. Data were transmitted to the BCBSM Study Coordinator by Fax.

Programme selection

The research team selected clinical areas in which support for the programme was strongest and patient volume would support an outcomes study. The two clinical areas chosen were breast cancer (the choice between mastectomy and lumpectomy in early stage breast cancer) and ischaemic heart disease/IHD (the choice among percutaneous transluminal angioplasty, coronary artery bypass surgery (CABG) and medical therapy for moderate stable angina). The Providence and Northern Michigan sites chose to evaluate the breast cancer programme; Oakwood chose IHD. Based on the number of patients treated in 1994, the potential pool of breast cancer patients was 1 319 per year. Based on the number of patients treated at Oakwood in 1994, the potential pool of patients was 1 222 per year.

Results

Survey

Programmes were rated on amount of information, length of programme and clarity of information. Of the 14 participating physicians, 57% felt the amount of information was about right. An additional 21% felt it was a little less then

Table 1 Should the SDP programme be used?

Item (1 = strongly agree; 5 = strongly disagree)	Physicians (n = 14)	Nurses (n = 13)	Admin., others (n = 7)
Patients should see…before treatment decision is made	Mean = 2.20 S.D. = 1.32	Mean = 1.21 S.D. = 0.58	Mean = 1.67 S.D. = 0.50
SDP patients…will be much better informed…	Mean = 2.40 S.D. = 1.24	Mean = 1.29 S.D. = 0.47	Mean = 2.00 S.D. = 1.12
All eligible patients should be referred to see the programme	Mean = 2.67 S.D. = 1.63	Mean = 1.36 S.D. = 0.63	Mean = 2.00 S.D. = 0.71
SDP may cause some…to make the wrong choice	Mean = 3.47 S.D. = 0.99	Mean = 3.86 S.D. = 1.03	Mean = 3.89 S.D. = 0.78

Table 2 Information value of the SDP programme

Item (1 = strongly agree; 5 = strongly disagree)	Physicians (n = 14)	Nurses (n = 13)	Admin., Others (n = 7)
SDP gives good explanation of outcomes likelihood	Mean = 2.40 S.D. = 0.91	Mean = 1.93 S.D. = 0.73	Mean = 2.44 S.D. = 1.24
SDP gives relevant information on patient preference in deciding on treatment	Mean = 2.13 S.D = 0.83	Mean = 1.50 S.D. = 0.52	Mean = 1.78 S.D. = 0.97
SDP gives relevant information on patient values in deciding on treatment	Mean = 2.20 S.D. = 0.77	Mean = 1.57 S.D = 0.76	Mean = 1.78 S.D. = 0.97

they wanted; 14% felt it was a little more. Of the 13 nurses, 92% felt it was about the right amount of information. Of the seven social workers and administrators, 83% felt the amount of information was about right. Fifty-seven percent of physicians, 54% of nurses and 42% of others felt it was about the right length. Thirty-six percent of physicians, 46% of nurses and 50% of others felt it was a little too long. No one thought the hour-long programme was much too short, and only two individuals felt it was much too long. Seventy-eight percent of physicians, 85% of nurses and 100% of others thought the programme content was completely, or mostly clear. Eight clinicians evaluated the balance of the Ischaemic Heart Disease programme (IHD). Of the three physicians, two thought it was completely balanced and one thought it was slightly slanted to medical therapy. Of the three nurses, two thought it was slightly slanted to medical therapy; one thought it was slightly slanted to surgery. Of the others, one thought it was slightly slanted toward surgery, the other that it was completely balanced. In general, nurses were more supportive than were physicians of showing the programmes to patients prior to decision-making.

The information value of the programmes was highly rated, though nurses were more positive. Physicians felt the information in the programmes was largely consistent with their knowledge. On a scale of 1–5 (strongly agree to strongly disagree), the mean consistency score was 1.9 for physicians.

Estimates of the feasibility of shared decision-making was somewhat lower. Clinicians were asked to rate their own estimates of patients' desire to share in decision-making about treatment. Results are shown in Table 3. In general, there was modest support for the readiness of patients for shared decision-making.

Asked about administrative issues, physicians and nurses indicated the SDP would not decrease the amount of time spent with patients and would not affect risk of malpractice or need for second opinion.

Table 3 Shared decision-making

Item (1 = Strongly Agree; 5 = Strongly Disagree) * Reversed scoring	Physicians (*n* = 14)	Nurses (*n* = 13)	Admin., Others (*n* = 7)
SDP will cause patients to be more involved in decision-making about treatment.	Mean = 2.20 S.D. = 1.26	Mean = 1.57 S.D. = 0.65	Mean = 1.78 S.D. = 0.67
SDP will cause patients to ask more questions than they would otherwise have asked.	Mean = 1.87 S.D. = 0.92	Mean = 1.50 S.D. = 0.52	Mean = 2.11 S.D. = 1.05
Knowing risks and benefits, most patients want to decide how acceptable treatment is to them.	Mean = 2.07 S.D. = 0.80	Mean = 1.64 S.D. = 0.63	Mean = 1.33 S.D. = 0.71
Patients usually want to be an equal partner with physicians in making important treatment decisions.	Mean = 2.40 S.D. 1.24	Mean = 2.14 S.D. = 1.35	Mean = 2.67 S.D. = 1.22
*Majority of patients do not wish to be involved in decision-making about their treatment.	Mean = 2.53 S.D. = 1.25	Mean = 1.71 S.D. = 0.99	Mean = 2.22 S.D. = 1.30
*Most patients prefer the doctor to take responsibility for their medical problems.	Mean = 2.87 S.D. = 1.36	Mean = 2.07 S.D. = 1.07	Mean = 2.56 S.D. = 1.42
Shared decision-making mean score	Mean = 2.47 S.D. = 1.01	Mean = 1.89 S.D. = 0.94	Mean = 2.19 S.D. = 0.93

Patient enrolment

A pilot study to test the protocols was conducted from October 1996 – December 1996. In the 3-month pilot, four patients were referred (three from ischaemic heart disease and one from breast cancer). Total referral in all three hospitals in the initial implementation period (January 1997 – May 1997) was 11 ischaemic heart disease patients and three breast cancer surgery patients. The exact magnitude of the gap between eligible and referred patients is difficult to ascertain. Eligibility criteria for the programmes do not match any single billing code, making estimates of eligible IHD patients difficult. However, in breast cancer, the presence in one hospital of a very complete cancer registry allowed determination of the denominator of the ratio of referred to eligible patients. In that case, in the first 3 months of the programme, 27 patients with stage one or two breast cancer were seen; four were referred to the SDP programme. The referral rate was slightly better than one in seven (15%).

Participant observation

Participant observation corroborated that physicians and nurses indicated that the SDP programmes were of high quality and should be implemented. One exception was found on the part of a surgeon who felt the descriptions were anatomically too explicit in the breast cancer programme. He refused participation. All the other clinicians indicated that having patients view the SDP programmes would enhance the quality of patient care. Barriers to regular use of the SDP are described in the categories below, as derived from participant observation notes.

Table 4 Administrative impact

Item (1 = strongly agree; 5 = strongly disagree)	Physicians (*n* = 14)	Nurses (*n* = 13)	Admin., others (*n* = 7)
With…SDP, I will be able to reduce…time spent educating patients about…treatment	Mean = 3.13 S.D. = 1.30	Mean = 2.86 S.D. = 1.23	Mean = 2.44
…SDP will reduce the risk of malpractice	Mean = 3.40 S.D. = 1.24	Mean = 2.79 S.D. = 0.89	Mean = 2.11
…SDP should eliminate…need for third party utilization such as second opinion	Mean = 2.93 S.D. = 1.22	Mean = 3.21 S.D = 1.12	Mean = 2.44

Approval of programme content is not participation

Study Coordinators found continued verbal approval of the programme. However, reminders and discussions with physicians about the programme did not improve referral rates. Sometimes when a nurse-researcher identified an eligible patient and called the physician, she was told, 'oh, sure, go ahead.' Since patient identification, however, is designed to originate with the physician referral, this prompted acquiescence represents nurse management rather than physician referral. At all three sites, few physicians spontaneously remembered to offer the programme to patients. In some practices, office managers did not return the Study Coordinator's telephone calls. Surgeons in the two breast cancer sites varied in their estimates of who should be referred to the programme. In the Providence site, the surgeon felt that all patients should see the programme. She refused formal participation due to randomization to usual care for half the patients. At the Northern Michigan Hospital site, the surgeon appeared to limit referral to those patients who were highly seeking information. He felt that most patients, especially elderly ones, wanted him to make the decision about lumpectomy or mastectomy.

Study Coordinators observed a high level of anxiety among eligible patients about their clinical conditions, external to the SDP programme. Patients appeared to experience shock, fear and anxiety and were quite vulnerable. All patients who watched the programmes, however, appeared reassured by them. None expressed heightened anxiety due to having detailed outcomes data.

Centralized technology

In one of the three sites, the SDP programme was offered in the health education centre, a separate building on the hospital campus. The logistics of sending patients to a different location may have inhibited referral.

Time limitations

Time pressure in patient care in office practice was felt by clinicians to be intense. The perception of Study Coordinators from discussion with office staff was that the introduction of the extra step required to identify and enrol eligible patients was difficult with existing staffing levels. Offices frequently requested research nurse Study Coordinators to come to physician offices to manage the SDP at the patient level. Getting office nurses and staff to assist in recruiting patients to the programme was largely unsuccessful. The ischaemic heart disease programme also encountered a difficulty with the use of the SDP following the diagnostic cardiac catheterization. The SDP-IHD programme is most informative if patients input the results of a diagnostic catheterization. Individualized risk estimates are then produced to aid the patient in choosing among medical therapy, coronary artery by-pass grafting (CABG) and percutaneous transluminal coronary angioplasty (PTCA). However in this, as in other US settings, a final treatment decision was made based on the catheterization results, while the patient was sedated. If a PTCA was indicated based on coronary anatomy, it was done using the same catheter used for the diagnostic procedure. For that reason, the SDP programme was used in its generic form, providing the patient with average risks for patients of his/her age and with his/her history and physical examination results. Lack of full clinical information at the time of the programme viewing appeared to limit the opportunity for patients to fully participate in decision-making. In that setting, the programme became informational rather than to be used for guiding decisions. While patients could theoretically have refused the diagnostic procedure based on information in the SDP, this was not encouraged by the clinicians at the site. The SDP-IHD programme became part of permission to undergo catheterization rather than active decision support. The momentum of decision-making in the surgical environment extended more subtly to breast cancer as well. Patients identified as being candidates for surgery were scheduled as quickly as possible for surgery in order to minimize time they would have to be at home experiencing anxiety about having cancer. Unless they

demanded more information, the pressure of completing the clinical process made extra informational loops appear to be not clinically important.

Conclusions

This is one of the first US studies of the use of the SDP in fee-for-service settings. Hospitals selected were cutting-edge institutions that competed for the opportunity to participate in the programmes. The low patient recruitment was surprising among a group of physician volunteers, apparently eager to test the SDP programmes. The survey results indicate that clinicians were positive about the value of the Shared Decision-making Programmes®. At the same time, however, referral rates were low. How can the gap be explained? Several factors intervened between approving of the programmes and actually referring patients. One was a subtle increase in the level of physician buy-in needed to actually refer patients. In one breast cancer site, the physician agreed with the information presented in the SDP programme but restricted eligibility to patients who wanted extra information. In the other breast cancer site, the physician chose not to participate in the randomized study due to enthusiasm for the programme. She was willing to wait for the end of the evaluation to begin referring patients. The participant observation data strongly suggests that the pressure to shorten time-to-decision and time-to-procedure produced disincentives to introduce interventions that would slow the process. While clinicians liked the SDP programmes in their own right, they rarely made time for them in routine practice. Our experience suggests that physician referral is not a reliable mechanism for patient access to the videodisk. While physician referral is an accepted mechanism for getting patients to procedures, it did not work well in this study for patient education materials.

What possible systems innovations might be mounted to increase patient access to the SDP programmes? Several appear feasible. The first is to incorporate referral to the SDP into a routine procedure for obtaining informed consent. As is true with other routine procedures, a computerized reminder system may be an important facilitator of such a system.[15,16] This would require a less personal introduction to the information. The physician would have to be willing to provide the SDP materials to patients without the opportunity to describe the treatment choices him/herself. This would presumably dilute the notion of 'sharing' the decision-making. It would also place the initial control of the information in the hands of the designers of the SDP or similar programmes. A second possibility is that providers or payers might negotiate a general requirement or guideline for routine use of the SDP as a quality of care indicator. This is feasible in loosely managed preferred provider arrangements in fee-for-service practice, as well as in HMOs. These first two approaches are not mutually exclusive. They share the creation of a routine procedure for SDP use rather than reliance on physicians to remember to refer patients. Another alternative is to provide patient decision support directly to consumers, outside the clinical encounter. Potential sites include the internet, public health departments, public libraries or via the health plan (e.g. nurse advice lines or other health education programmes). Finally, reimbursement for SDP use is a possible means to overcome barriers to access within the health care system. Following a viewing of an SDP programme, however, it is critical that patients have an opportunity to ask questions and participate in decision-making. Such counselling and discussion in the current cost accounting environment may require direct reimbursement for SDP use. Cost containment in the US has been accomplished by physicians seeing more patients per hour and by decreasing office staffs. Patient education has been increasingly delegated to nurses and health educators. However, the increase in time pressure on clinicians has created a sense of urgency about all aspects of care provision. This has been further reinforced by findings from patient satisfaction surveys that timeliness (meaning speed of getting appointments) is highly valued by patients. It is provocative to note that the one

other experiment with the SDP-IHD conducted to date was performed in Canada. In the study by Morgan *et al.*[17] 240 stable angina patients at the Toronto Hospital facing a treatment decision for the first time were enrolled in the trial. In the Canadian experience, patients were not required to have a therapeutic catheterization at the same time as the diagnostic catheterization; there was normally a week between the two. In that setting, the SDP group chose to pursue re-vascularization 59% of the time whereas 76% of the control group chose re-vascularization ($P = 0.02$) as their initial treatment choice.[17] There was no difference in health status between groups. The same SDP/IHD programme was one of two programmes implemented in the current investigation. However, it is not clear whether the Canadian results would generalize to US settings, due in part to the provision of a substantial opportunity to consider the choice in the Canadian setting. The greatest opportunity and challenge continues to be designing a structure that both provides patients access to shared decision-making programmes and at the same time encourages true shared decision-making between physicians and patients. Two approaches to such deliberation may be feasible. The first would require slowing down the flow of decision-making, especially in surgical settings. This is a fundamental paradigm shift that might not be perceived as progress by patients without a great deal of explanation. A second alternative would be to provide programmes like the SDP early and often in the decision-making process. This would not necessarily require more personnel, as information could be provided in print or multimedia formats outside the clinical encounter. In this approach, the specific programme content would become highly controversial. Physicians are accustomed to controlling information; even the practitioners of evidence-based medicine frequently reach consensus only through extensive debate. A great deal of controversy and uncertainty about the effectiveness and cost-effectiveness of procedures exists within medicine. The controversy is, however, rarely displayed to patients. For the most part, patients still expect the 'right' answer from their physicians, and physicians are well-trained to provide it. Displaying controversy and uncertainty will require a major re-education of the patient public, who presently expect cures and hear constantly about medical breakthroughs on the evening news. If partnership is to replace paternalism in medical decision-making, two things have to change even beyond a change in physician and nurse attitudes.[9] One is that time and a deliberative approach must replace the rush and drama of treatment decision-making. The second is that patients must become comfortable with uncertainty and the chance of less than perfect outcomes. Both are large changes. As with successful programmes to change physician behaviour, multimethod approaches may be expected to work best. An orderly flow from best evidence to best practice to best decision is unlikely. Either shared decision-making or informed patient decision-making may make progress best through simultaneous change in the public media, the clinical encounter and a new patient clinical information system.

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