



### Editor's key points

- ▶ Shared decision making requires 2 key competencies: explaining potential benefits and harms (risk communication) and clarifying what matters to patients and families (values clarification).
- ▶ Risk communication and values clarification occurred together in nearly two-thirds of visits in routine daily family practice, but risk communication occurred more frequently than values clarification.
- ▶ Certain factors were associated with the occurrence of both competencies. Visits with health care professionals who preferred a collaborative decision-making style and visits that included discussions about beginning something new, treatment options, or postponing a decision were more likely to demonstrate both elements. Visits that were longer were also more likely to contain both competencies, even when controlling for the number of decisions made. Other decisions might benefit from an increased focus on discussions of harms, benefits, values, and preferences.

# How often do both core competencies of shared decision making occur in family medicine teaching clinics?

Gisèle Diendéré MD MSc Selma Chipenda Dansokho PhD Rhéa Rocque  
 Anne-Sophie Julien MSc France Légaré MD MSc PhD FCFP Luc Côté MSW PhD  
 Sonia Mahmoudi Philippe Jacob MD Natalia Arias Casais MSc MD  
 Laurie Pilote MD Roland Grad MD CM MSc FCFP  
 Anik M.C. Giguère PhD Holly O. Witteman PhD

## Abstract

**Objective** To assess how often risk communication and values clarification occur in routine family medicine practice and to explore factors associated with their occurrence.

**Design** Qualitative and quantitative cross-sectional study.

**Setting** Five university-affiliated family medicine teaching clinics across Quebec.

**Participants** Seventy-one health professionals (55% physicians, 35% residents, 10% nurses or dietitians) and 238 patients (76% women; age range 16 to 82 years old).

**Main outcome measures** The presence or absence of risk communication and values clarification during visits in which decisions were made was determined. Factors associated with the primary outcome (both competencies together) were identified. The OPTION5 (observing patient involvement in decision making) instrument was used to validate the dichotomous outcome.

**Results** The presence of risk communication and values clarification during visits was associated with OPTION5 scores (area under the curve of 0.80, 95% CI 0.75 to 0.86,  $P < .001$ ). Both core competencies of shared decision making occurred in 150 of 238 (63%) visits (95% CI 54% to 70%). Such an occurrence was more likely when the visit included discussion about beginning something new, treatment options, or postponing a decision, as well as when health professionals preferred a collaborative decision-making style and when the visit included more decisions or was longer. Alone, risk communication occurred in 203 of 238 (85%) visits (95% CI 82% to 96%) and values clarification in 162 of 238 (68%) visits (95% CI 61% to 75%).

**Conclusion** Health professionals in family medicine are making an effort to engage patients in shared decision making in routine daily practice, especially when there is time to do so. The greatest potential for improvement might lie in values clarification; that is, discussing what matters to patients and families.



# À quelle fréquence rencontre-t-on les deux principales compétences de la prise de décisions en commun dans les cliniques d'enseignement universitaire de médecine familiale?

Gisèle Diendéré MD MSc Selma Chipenda Dansokho PhD Rhéa Rocque  
Anne-Sophie Julien MSc France Légaré MD MSc PhD FCFP Luc Côté MSW PhD  
Sonia Mahmoudi Philippe Jacob MD Natalia Arias Casais MSc MD  
Laurie Pilote MD Roland Grad MD CM MSc FCFP  
Anik M.C. Giguère PhD Holly O. Witteman PhD

## Résumé

**Objectif** Déterminer à quelle fréquence la communication des risques et la clarification des valeurs sont présentes ensemble dans les cliniques de santé familiales habituelles et examiner les facteurs associés à cette fréquence.

**Type d'étude** Une étude transversale qualitative et quantitative.

**Contexte** Cinq unités d'enseignement universitaire de santé familiale du Québec.

**Participants** Un total de 71 professionnels de la santé (55 % médecins, 35 % résidents, 10 % infirmières ou diététiciens) et 238 patients (76 % femmes; âgés de 16 à 82 ans).

**Principaux paramètres à l'étude** On a déterminé la présence ou l'absence de la communication des risques et de la clarification des valeurs au cours des consultations où des décisions étaient prises. On a identifié les facteurs qui influençaient sur la présence des 2 compétences. L'instrument *OPTION5 (observing patient involvement in decision making)* a servi à valider un résultat dichotomique.

**Résultats** On a observé une association entre la présence de la communication des risques et de la clarification des valeurs, et les scores obtenus à *OPTION5* (surface sous la courbe de 0.80, IC à 95% 0.75 à 0.86,  $P < .001$ ). Les deux compétences pour la prise de décision partagée étaient présentes dans 150 consultations sur 238 (63 %, IC à 95% 54 % à 70 %). Cette situation était plus susceptible de survenir lorsque la visite incluait des discussions sur la possibilité d'entreprendre quelque chose de nouveau, les traitements possibles ou le report d'une décision, mais aussi lorsque les professionnels de la santé préféraient un type de prise de décision collaborative et quand la consultation était plus longue ou portait sur plusieurs décisions. Dans 203 cas sur 238, on avait utilisé seulement la communication des risques, (85 %, IC à 95% 82 % à 96 %) et dans 162 cas sur 238, seulement la clarification des valeurs (68 %, IC à 95% 61 % à 75 %).

**Conclusion** Dans la pratique quotidienne, les professionnels de la santé en médecine familiale s'efforcent d'amener les patients à prendre des décisions en commun, particulièrement lorsqu'il est temps de le faire. Discuter avec les patients des choses qui leur importent est ce qui présente le plus fort potentiel d'amélioration.

## Points de repère du rédacteur

- ▶ Une décision partagée requiert deux compétences principales: l'explication des avantages et des risques éventuels (la communication des risques) et la mise au clair de ce qui est important pour les parents et les familles (la clarification des valeurs).
- ▶ Dans près des deux tiers des consultations dans les cliniques de santé familiale, la communication des risques et la clarification des valeurs ont été présentées ensemble, mais la communication des risques a été abordée plus souvent que la clarification des valeurs.
- ▶ On associait certains facteurs à la présence de ces 2 compétences. Les consultations auprès de professionnels de la santé qui préféraient la prise de décision en commun et celles où on discutait de la possibilité d'entreprendre quelque chose de nouveau, des traitements possibles ou du report d'une décision étaient plus susceptibles de comporter les deux éléments. Les discussions plus longues étaient aussi plus susceptibles de comprendre les deux types de compétences, même après un contrôle du nombre de décisions prises. En insistant pour que les discussions portent davantage sur les risques, les avantages, les valeurs et les préférences, on pourrait améliorer d'autres types de décisions.

Shared decision making is the collaborative process by which health professionals and patients partner to make evidence-informed health decisions that reflect what matters to patients and their families.<sup>1</sup> Such collaboration leads to greater patient knowledge, reduced decision conflict, more active patient involvement, greater patient satisfaction with disease management, more realistic patient expectations, and higher levels of treatment adherence.<sup>2-8</sup>

Shared decision making requires that both the health professional and the patient bring relevant expertise to health decisions. Professionals bring medical expertise, and patients bring expertise about their own lives and what matters to them and their families. Thus, shared decision making requires communicating evidence regarding potential benefits and harms of all available options (risk communication) and clarifying what matters to patients and families regarding those options (values clarification).<sup>1,2,9</sup> Shared decision making might occur less frequently than expected.<sup>10,11</sup> It can present challenges in family medicine because multiple health decisions might occur in a single clinical encounter<sup>12</sup>; decisions are likely to be about chronic conditions, preventive care, and lifestyle issues<sup>12,13</sup>; and the decision-making process might be complicated by issues such as comorbidity and diverse patient populations.<sup>14-16</sup>

Because little is known about how often the 2 core competencies of shared decision making occur in primary care, we assessed the frequency with which both occur, and explored contextual factors associated with this occurrence or lack thereof.

## — Methods —

### Study design and context

We conducted a cross-sectional study with both qualitative and quantitative methods. We aimed to collect a convenience sample of 250 visits in primary care, approximately 50 visits per site, considering both the need for a range of primary care consultations and the feasibility of the study. We collected data in 2014 to 2015 at 5 university-affiliated family medicine clinics across Quebec. The study was approved by the research ethics committees of the Integrated University Health and Social Services Centre of the National Capital in Gatineau; Centre de recherche de la CHU de Québec-Université Laval in Quebec city; and the Jewish General Hospital in Montreal.

### Participants and recruitment

We first invited all health professionals at participating clinics to enrol in the study, including family physicians, residents, nurses, and allied health professionals who were scheduled to provide care (planned visits or walk-in coverage) during each period of data collection. We then invited patients of the health professionals who

agreed to participate and were able to complete a questionnaire in English or French. Our participants included parents or guardians accompanying a minor (defined in Quebec as a person of 14 years of age or younger), as they were the legal decision makers. We refer to such parents and guardians as *patients* in this article. We excluded unaccompanied minors younger than 14 years of age and patients who had been identified by health professionals as having a condition that affected their ability to provide informed consent.

### Data collection

At each clinic, we collected data during 4 to 6 days. Participating adults provided written informed consent and accompanied minors provided written assent. Health professionals completed a single self-administered written questionnaire at recruitment, typically days or weeks ahead of data collection, with closed-ended questions about their sociodemographic characteristics and medical decision-making style preferences.<sup>17</sup> Patients completed 2 self-administered written questionnaires. The questionnaire before the visit contained closed-ended sociodemographic questions, as well as original English or translated French versions of validated measures of health literacy<sup>18</sup> and subjective numeracy.<sup>19,20</sup> The second questionnaire, administered after the visit to avoid biasing patient behaviour during the visit, contained a validated measure of medical decision-making style preferences on a 5-point scale.<sup>17</sup> We audio-recorded visits.

### Data analysis

Audiorecordings were transcribed verbatim by a professional transcriptionist. Two researchers (G.D., R.R.) independently coded all transcripts in NVivo 10, resolving disagreements by discussion until reaching consensus and reviewing all questions at regular meetings held with 2 other researchers (S.C.D., H.O.W.). We used a combination of inductive and deductive thematic analysis approaches<sup>21</sup> to develop a structured coding form.

### Coding of visits

We coded 6 aspects of each visit. First, we coded the visit's purpose (ie, checkup or preventive health care, or another medical reason). Second, we coded how many, if any, decisions were made during the visit. Third, we coded structural characteristics of each decision (ie, was the decision about doing nothing; beginning, stopping, or continuing something; postponing a decision; or taking action later). Fourth, we coded clinical characteristics of decisions (eg, deciding about a screening test or a medical treatment). Fifth and sixth, we coded instances of risk communication and values clarification according to established definitions and taxonomies, using relatively easy-to-attain thresholds. Specifically, we determined risk communication to have occurred

during the visit if there was any discussion about potential benefits and harms of health interventions.<sup>22-25</sup> We defined *values clarification* according to a systematic review of values clarification methods,<sup>26,27</sup> which specifies that preferences are inclinations toward or away from a medical option and values are the underlying feelings and emotions that help determine preferences. We accordingly defined *values* broadly as concepts relevant to the decision that matter to patients or families.<sup>28,29</sup> **Table 1** provides examples for each category. We validated our risk communication and values clarification coding structure by comparing it to OPTION5 (observing patient involvement in decision making) scores; OPTION5 is an established 5-item scale used to measure shared decision making.<sup>30,31</sup> We used OPTION5 rather than the original OPTION12 because OPTION5 contains 2 items about values and preferences that were lacking in OPTION12 and because OPTION5 has been shown to be more sensitive.<sup>32,33</sup>

Two team members (P.J., S.M.) entered questionnaire data into a spreadsheet. A senior research associate (S.C.D.) verified and corrected any discrepancies in data. We combined these data with codes from the transcripts to create a complete data set about each visit, including aspects of the visit itself and characteristics of the health professional and patient, categorizing variables as needed according to their distribution.<sup>34,35</sup>

Final coding reflected consensus judgments among 2 (G.D. and R.R. for most codes; R.R. and S.C.D. for OPTION5 scores) or 4 (G.D., R.R., S.C.D., H.O.W.) researchers. We assessed the reliability of coding between each pair of independent analysts with the Cohen  $\kappa$ .<sup>36</sup>

## Statistical analyses

Our main outcome of interest was dichotomous: whether or not risk communication and values clarification both

occurred. Our unit of analysis was the visit as a whole, not individual decisions within it, for 3 reasons. First, a single decision in primary care might be discussed during multiple visits,<sup>1,37</sup> meaning that analyzing the extent of risk communication and values clarification for a given decision within a single visit might underestimate the extent of these practices. Second, primary care visits are complex and move from one topic to another and then back again,<sup>38</sup> meaning that for visits in which multiple topics are addressed, it might be neither possible nor desirable to disentangle values clarification discussions that are relevant to multiple decisions. Third, patient impressions of shared decision making in family medicine visits appear to be formed from the visit as a whole, suggesting that a more global assessment likely better reflects what matters to patients.<sup>39,40</sup> We compared our dichotomous outcome to OPTION5 scores by examining the receiver operating curve and assessed the extent to which OPTION5 scores predicted values of our dichotomous outcome.

We identified factors associated with our primary outcome (both competencies together). We also examined the presence or absence of each competency alone within a visit and identified whether health professionals or patients initiated these discussions.

As our data were hierarchical at 3 levels (visit and patient, health professional, and clinic), we examined intraclass correlation coefficients. To account for potential clustering effects among study sites and health professionals, we performed a bivariate analysis and then a multivariable logistic regression analysis using a generalized linear mixed model to estimate the proportion of the presence of both competencies and to identify factors associated with their presence or absence. We conducted statistical analyses in SAS, version 9.4.

**Table 1. Coding scheme**

TYPE OF EXPRESSION AND EXPRESSIONS CODED	EXAMPLES
Risk communication	
• Statement about potential benefits or harms	"This medication has some side effects"
• Expression of probability or uncertainty	"The most severe side effects are rare"
• Numbers	"Less than 1 in a thousand"
Values clarification	
• Efficacy and side effects	"I did not try the medication because of the side effects"
• Frequency of administration	"It's really hard to make it to physiotherapy twice a week"
• Mode of administration and cost	"I have no insurance. For all the rest I am covered, but not for that"
• Patient priorities	"I really don't want to have to miss work"
• Life philosophies or identity	"I am not the kind of person who wants to suffer"
• Background	"No one in my family has ever breastfed"
• Life circumstances or context	"My father-in-law is living with us so I plan meals that he likes"

## — Results —

### Study participants

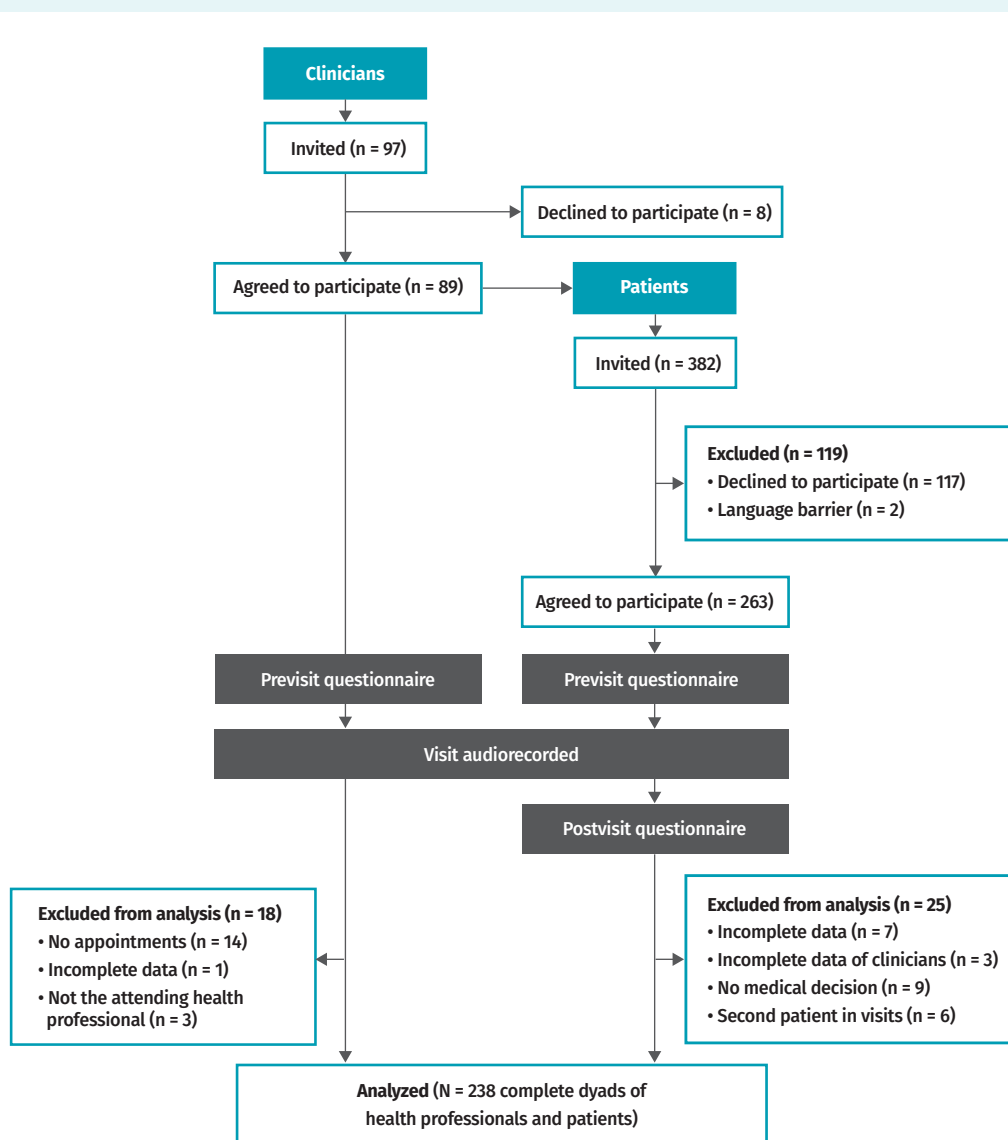
Of the 96 health professionals invited, 89 agreed to participate (93%) and 71 were included in the analysis. We excluded consenting health professionals who had incomplete questionnaire data ( $n=1$ ), who were in the room but were not the attending health professional (eg, a resident observing a preceptor) ( $n=3$ ), or who had no appointments scheduled during data collection ( $n=14$ ). We analyzed 238 complete clinical visits between health professionals and patients. **Figure 1** shows study flow and **Table 2**<sup>41</sup> details participant characteristics.

### Characteristics of visits

**Reliability of qualitative coding.** Interobserver reliability for primary coding as assessed by the Cohen  $\kappa$  was 0.85. For OPTION5 coding, the Cohen  $\kappa$  ranged from 0.82 to 0.89 across the 5 items. Internal reliability for the OPTION5 measure (Cronbach  $\alpha$ ) was 0.76.

**Risk communication and values clarification.** Risk communication occurred in 203 of 238 (85%) visits. Values clarification occurred in 162 of 238 (68%) visits. Risk communication and values clarification both occurred in 150 of 238 (63%) visits (**Table 3**), with a 95% CI of 54% to 70%. The presence of both risk communication and values clarification within a visit was related to OPTION5 scores, with an area

Figure 1. Study participant flow diagram



**Table 2. Participant characteristics: We report the mean and SD if the distribution is normal, and median and IQR if the distribution is not normal.**

CHARACTERISTIC	PATIENTS (N = 238)	HEALTH PROFESSIONALS (N = 71)
Site, n (%)		
• 1	48 (20)	14 (20)
• 2	50 (21)	18 (25)
• 3	62 (26)	12 (17)
• 4	40 (17)	12 (17)
• 5	38 (16)	15 (21)
Female sex, n (%)	181 (76)	48 (68)
• Physicians	NA	25 (52)
• Residents	NA	16 (33)
• Nurses and dietitians	NA	7 (15)
Male sex, n (%)	57 (24)	23 (32)
• Physicians	NA	14 (61)
• Residents	NA	9 (39)
• Nurses and dietitians	NA	0 (0)
Median (IQR) age	39 (16 to 82)	33 (23 to 64)
• Physicians	NA	40 (26 to 64)
• Residents	NA	27 (23 to 40)
• Nurses and dietitians	NA	30 (28 to 53)
Level of education, n (% of 238)		
• Low	89 (37)	NA
-None or some elementary school	2 (< 1)	NA
-Elementary school	18 (8)	NA
-Secondary school diploma	42 (18)	NA
-Secondary school vocational diploma	27 (11)	NA
• Medium (ie, cégep*)	47 (20)	NA
• High	98 (41)	NA
-Bachelor degree	65 (27)	NA
-Master's degree	24 (10)	NA
-Doctoral or professional degree	9 (4)	NA
• Missing data	4 (2)	NA
Median (IQR) health literacy score <sup>†</sup>	13 (3 to 18)	NA
Subjective Numeracy Scale score <sup>‡</sup>	36 (8 to 48)	39 (4)
Health professionals, n (%)		
• Physicians	NA	39 (55)
• Residents	NA	25 (35)
• Nurses and dietitians	NA	7 (10)
Place of origin, n (%)		
• Quebec	194 (82)	59 (83)
• Other Canadian province	8 (3)	4 (6)
• Other country	34 (14)	8 (11)
• Missing data	2 (< 1)	0 (0)

Table 2 continued on page e70

Table 2 continued from page e69

CHARACTERISTIC	PATIENTS (N = 238)	HEALTH PROFESSIONALS (N = 71)
Median (IQR) years in Quebec	33 (1 to 79)	32 (1 to 75)
Median (IQR) years in practice		
• Overall	NA	5 (1 to 40)
• Physicians	NA	12 (1 to 40)
• Residents	NA	1.5 (1 to 8)
• Nurses and dietitians	NA	6.5 (1 to 32)
Median (IQR) years in clinic	NA	3 (1 to 26)
Control Preferences Scale score, <sup>§</sup> n (%)		
• 1	13 (5)	7 (10)
• 2	122 (51)	19 (27)
• 3	69 (29)	39 (55)
• 4	27 (11)	2 (3)
• 5	4 (2)	0 (0)
• Missing data	3 (1)	4 (6)
Languages spoken, <sup>  </sup> n (%)		
• French	231 (97)	71 (100)
• English	212 (89)	70 (99)
Visible minorities, <sup>¶</sup> n (%)	30 (13)	4 (6)
People with disabilities, <sup>#</sup> n (%)	10 (4)	0 (0)

IQR—interquartile range, NA—not applicable.

\*Cégep is a stage of education in Quebec. It typically requires 2 years of study after grade 11. Graduates might then go on to college or university.

<sup>†</sup>Health literacy is defined as the capacity to understand basic health information.

<sup>‡</sup>This scale rates confidence in working with numbers and preferences for numerical information. Scores are reported as median (IQR) for patients and as mean (SD) for health professionals.

<sup>§</sup>The Control Preference Scale rates preferences as follows: 1 = prefers that the patient makes the final decision alone, 2 = prefers that the patient makes the decision after seriously considering the health professional's opinion, 3 = prefers that the patient and the health professional share responsibility for the decision, 4 = prefers that the health professional makes the decision after he or she seriously considers the patient's opinion, and 5 = prefers that the health professional makes the decision alone.

<sup>||</sup>Not mutually exclusive.

<sup>¶</sup>Visible minorities are defined as "persons, other than aboriginal peoples, who are non-Caucasian in race or non-white in color."<sup>41</sup>

<sup>#</sup>Disability is defined as physical, cognitive, intellectual, mental, sensory, or developmental impairment.

**Table 3. Frequencies of risk communication and values clarification in primary care visits: N = 238. We analyzed both objectives with GLMM to account for the potential clustering effect of health professionals, but assumed observations within each clinic to be similar owing to the low ICC at the clinic level.**

VISITS IN WHICH DECISIONS WERE MADE	ABSENCE OF RISK COMMUNICATION, N (%)	PRESENCE OF RISK COMMUNICATION, N (%)	TOTAL, N (%)
Absence of values clarification	23 (10)	53 (22)	76 (32)
Presence of values clarification	12 (5)	150 (63)*	162 (68) <sup>†</sup>
Total	35 (15)	203 (85) <sup>‡</sup>	238 (100)

GLMM—generalized linear mixed model, ICC—intraclass correlation coefficient.

\*The ICCs for risk communication and values clarification together were 0.15 at the level of health professionals and 0.0001 at the clinic level.

<sup>†</sup>The ICCs for values clarification alone were 0.07 at the level of health professionals and 0.0001 at the clinic level.

<sup>‡</sup>The ICCs for risk communication alone were 0.43 at the level of health professionals and 0.05 at the clinic level.

under the curve of 0.80 (95% CI 0.75 to 0.86,  $P < .001$ ). Using a cutoff of 5, sensitivity was 0.72 and specificity was 0.76.

Health professionals initiated risk communication discussions 96% of the time (194 of 203 visits containing risk communication) and values clarification discussions 60% of the time (98 of 162 of visits containing values clarification).

**Factors associated with risk communication and values clarification.** Among the diversity of visits (Table 4),

we observed 6 factors associated with the presence of risk communication and values clarification together. The visit was more likely to contain both core competencies of shared decision making when health professionals and patients discussed beginning something new (odds ratio [OR] of 3.54, 95% CI 1.32 to 9.48); discussed a treatment option (OR = 3.56, 95% CI 1.52 to 8.36); discussed more than 5 health decisions (OR = 5.00, 95% CI 1.50 to 16.90); discussed postponing a decision

**Table 4. Visit characteristics: N = 238. Median (IQR) visit length in minutes was 29.2 (5.2 to 97.3).**

CHARACTERISTIC	N (%)
No. of decisions per visit*	
• 1-2	88 (37)
• 3-4	81 (34)
• 5-10	69 (29)
Reason for visit	
• Checkup or regular preventive care	163 (69)
• Medical reasons	75 (32)
-1	49 (65)
-Several	26 (35)
Visit included $\geq 1$ decisions to ... <sup>†</sup>	
• Begin something	187 (79)
• Continue something	174 (73)
• Do nothing	45 (19)
• Postpone the decision	41 (17)
• Take action later <sup>‡</sup>	23 (10)
• Stop something	21 (9)
Visit included $\geq 1$ decisions about ... <sup>†</sup>	
• Treatment options (medical or surgical)	169 (71)
• Screening tests	93 (39)
• Diagnostic tests	87 (37)
• Follow-up of tests or treatment given or prescribed	87 (37)
• Following and watching something	69 (29)
• Treatment plan (discussion of lifestyle changes)	49 (21)
• Referral to another specialist	36 (15)
• Referral to an allied health professional	31 (13)
Patient knows health professional	
• Yes, the patient recalled having seen this professional before	179 (75)
• No, the patient did not recall having seen this professional before	59 (25)
Risk communication	
• No	35 (15)
• Yes	203 (85)
-Yes, in words without numbers	165 (81)
-Yes, in numbers	38 (19)
—Numbers were probabilities	23 (61)
—Other type of numbers	15 (39)
Values clarification	
• No	76 (32)
• Yes	162 (68)
-Yes, clinician asks a question	97 (60)
-Yes, clinician makes a statement that invites a response	1 (1)
-Yes, patient initiates the discussion	64 (40)

IQR—interquartile range.

\*Categories reflect distribution within our study and clinician team members' assessments of meaningful differences.

<sup>†</sup>These categories are not mutually exclusive.<sup>‡</sup>A decision was made to take action at a subsequent visit (eg, a decision to have a Papanicolaou test at the next visit).



(OR=4.92, 95% CI 1.35 to 17.87); and when visits were with health professionals who indicated that they preferred a collaborative decision-making style (OR=8.78, 95% CI 1.62 to 47.71). Longer visits were also more likely to contain both competencies (OR=1.03, 95% CI 1.00 to 1.07) (Table 5). Sensitivity analyses demonstrated that our results were robust.

## — Discussion —

Our study aimed to assess how often 2 core competencies of shared decision making occur in routine family

medicine practice together or alone and to explore factors associated with their occurrence. We found that risk communication and values clarification occurred together in nearly two-thirds of visits in routine daily family practice but that risk communication occurs more frequently than values clarification. In addition, clinicians had some commonalities regarding their use of both competencies.<sup>42</sup> These results led us to make 3 main observations.

First, our findings show that the core elements of shared decision making occurred together in nearly two-thirds of visits without any active intervention. This might be a more positive outcome than in other studies,<sup>10</sup> a

**Table 5. Factors associated with risk communication and values clarification (multivariable analysis)**

FACTOR*	BOTH RISK COMMUNICATION AND VALUES CLARIFICATION PRESENT	1 OR BOTH OF RISK COMMUNICATION AND VALUES CLARIFICATION MISSING	OR (95% CI)	P VALUE
<b>Factors associated with the visit</b>				
No. of decisions per visit, n (%)				
• 1-2	34 (39)	54 (61)	1	
• 3-4	54 (67)	27 (33)	1.40 (0.59 to 3.16)	
• ≥5	62 (90)	7 (10)	5.00 (1.50 to 16.90)	.03
Median (IQR) length of visit, min	30.3 (9.8 to 97.3)	25.8 (5.2 to 58.5)	1.03 (1.00 to 1.07)	.03
Decisions to postpone the decision, <sup>†</sup> n (%)				
• No	115 (58)	82 (42)	1	
• Yes	35 (85)	6 (15)	4.92 (1.35 to 17.87)	.02
Decisions to begin something, <sup>†</sup> n (%)				
• No	19 (37)	32 (63)	1	
• Yes	131 (70)	56 (30)	3.54 (1.32 to 9.48)	.01
Decisions about referral to an allied health professional, <sup>†</sup> n (%)				
• No	124 (60)	83 (40)	1	
• Yes	26 (84)	5 (16)	5.09 (0.96 to 27.04)	.06
Decisions about treatment, <sup>†</sup> n (%)				
• No	24 (35)	45 (65)	1	
• Yes	126 (75)	43 (25)	3.56 (1.52 to 8.36)	.004
<b>Factors associated with health professionals</b>				
Control Preferences Scale score, <sup>‡</sup> n (%)				
• No collaboration	1 (14)	6 (86)	1	
• Collaboration	36 (60)	24 (40)	8.78 (1.62 to 47.71)	.01

IQR—interquartile range, OR—odds ratio.

\*Factors for analysis selected based on bivariate analysis.

<sup>†</sup>Not mutually exclusive.

<sup>‡</sup>No collaboration includes the 2 extreme items on the scale (ie, “prefers that the patient makes the final decision alone” and “prefers that the health professional makes the decision alone”). Collaboration includes the 3 middle items on the scale (ie, “prefers that the patient makes the decision after seriously considering the health professional’s opinion,” “prefers that the patient and the health professional share responsibility for the decision,” and “prefers that the health professional makes the decision after he or she seriously considers the patient’s opinion”).

difference that might be explained by the nature of our clinical sites as teaching clinics,<sup>43</sup> the fact that clinicians knew they were being observed, or that our outcome measure was more encompassing than other measures. However, our findings also suggest some room for improvement, particularly in the context of a health decision in primary care, where discussion of risks, benefits, and patients' values should be a relatively easy threshold to attain.<sup>42</sup> Other studies have similarly concluded that shared decision making competencies could be improved in primary care.<sup>11,40,43-49</sup>

Second, we observed that risk communication was more prevalent than values clarification during primary care visits. This is consistent with previous work in the past 10 to 15 years showing that as evidence-based medicine has moved into practice, it might not always be bringing its intended discussions of values and preferences along to complement the evidence.<sup>50</sup> More work is needed to correct the misdiagnosis of patient values and preferences.<sup>26,51</sup>

Third, we observed that certain factors were associated with the occurrence of both competencies. Visits that included discussions about beginning something new, treatment options, or postponing a decision were more likely to demonstrate both elements. We suggest that other decisions might benefit from an increased focus on discussions of harms, benefits, values, and preferences. For example, given the increased focus on overdiagnosis<sup>52</sup> and evidence that patients might overestimate the benefits of screening,<sup>53</sup> screening discussions might offer room for meaningful improvement. Visits that were longer were also more likely to contain both competencies, even when controlling for the number of decisions made. These findings align with those of previous studies showing that perceived time constraints are a barrier to shared decision making<sup>54</sup> and longer visits are associated with higher scores of communication skills.<sup>10,55</sup> When health professionals preferred a less collaborative decision-making style, the core competencies of shared decision making were less likely to occur. Although this finding is not surprising, when combined with our findings of a substantial cluster effect at the level of health professionals and few patients initiating values clarification or risk communication discussions, it emphasizes that a health professional's individual communication style is a key factor in whether or not a patient will experience shared decision making.

## Limitations

Our study has 4 main limitations. First, the generalizability of our study is limited by the fact that we collected data in family medicine teaching clinics, meaning that our results might be less applicable to other primary care settings. Specifically, a relatively high proportion of patients had postsecondary degrees (41% compared with the provincial statistic of 31%<sup>56</sup>) and, as expected

for teaching settings, physicians were younger on average and the median (interquartile range) visit length (29.2 [5.2 to 97.3] minutes) might reflect longer visits compared with previously published mean visit lengths (21 minutes).<sup>57</sup> Second, although we used rigorous dual independent analysis to code transcripts and validated our coding strategy with an established, validated measure, our analyses used a newly created outcome measure. Third, we assessed medical decision-making style preferences at different times for patients and physicians. Specifically, for health professionals, we asked for their preferences at recruitment, which was typically days or weeks in advance of the recorded consultations. For patients, we asked immediately after the visit. This was because we believed that the greater threat to data quality for physicians would be missing data owing to difficulty in ensuring they completed a questionnaire after their last participating patient, whereas for patients, we believed that the greater threat to data quality would be that they might change their behaviour owing to answering the question immediately before their visit. It is possible that answering this question reminded physicians about the desirability of shared decision making in advance of recording visits and thus increased the occurrence of both competencies. Finally, this study simply addressed whether risk communication and values clarification occurred, and did not assess the quality of each discussion nor delve deeply into how discussions occurred. Further research will explore these questions to better unpack the intricacies of supporting shared decision making in family medicine.

## Conclusion

Health professionals in family medicine teaching clinics demonstrated a minimum level of the 2 core competencies of shared decision making in routine daily practice; progress remains to be made. The greatest area for improvement might have to do with clarifying patients' values and preferences rather than expecting patients to bring these into the discussion. Providing training in this competency, supportive tools, and time for discussion might facilitate progress. 🌱

**Dr Diendéré** is a clinical research coordinator at the Jewish General Hospital in Montreal, Que. **Dr Chipenda Dansokho** is a research associate in the Research Unit of the Office of Education and Professional Development at Laval University in Quebec city, Que. **Ms Rocque** is a doctoral student in psychology at Laval University. **Ms Julien** is a biostatistician in the Clinical Research Platform of the Research Centre of the CHU de Québec in Quebec city. **Dr Légaré** is a practising family physician and Full Professor in the Department of Family and Emergency Medicine at Laval University, Tier 1 Canada Research Chair in Shared Decision Making and Knowledge Translation, Scientific Co-director of the Canadian Cochrane Network Site at Laval University, and a researcher at the Centre de recherche sur les soins et les services de première ligne de l'Université Laval (CERSSPL-UL). **Dr Côté** is Professor in the Department of Family and Emergency Medicine and a researcher in the Office of Education and Professional Development in the Faculty of Medicine at Laval University. **Ms Mahmoudi** is a medical student in the Faculty of Medicine at Laval University. **Dr Jacob** is a resident in the Faculty of Medicine at Laval University. **Dr Casais** is a consultant with the Pan American Health Organization and the World Health Organization in Washington, DC. **Dr Pilote** is an oncologist in the Division of Radiation Oncology in the Department of Medicine at the CHU de Québec-Laval University. **Dr Grad** is a family physician in the Herzl Family Practice Centre in Montreal, and Associate Professor in the Department of Family Medicine and Director of the Clinician Scholar Program in the Department of Family Medicine at McGill University in Montreal. **Dr Giguère** is Associate Professor in the Department of Family and Emergency Medicine and a researcher in the Office of Education and Professional

Development at Laval University, the Centre d'excellence sur le vieillissement de Québec at the Research Centre of the CHU de Québec, and the CERSSPL-UL. **Dr Witteman** is Associate Professor in the Department of Family and Emergency Medicine and a researcher in the Office of Education and Professional Development at Laval University, Population Health and Optimal Health Practices at the Research Centre of the CHU de Québec, the Ottawa Hospital Research Institute in Ontario, and the CERSSPL-UL.

#### Acknowledgment

We thank **Ms Gisele Bouchard** for her work in transcribing visits, **Drs Michel Labrecque** and **Ruth Ndjaboue** for their comments on versions of this paper, and **Dr Jean-Sébastien Renaud** for providing his measurement and evaluation expertise. We gratefully acknowledge the participation of health professionals, patients, and family members at the participating family medicine clinics, and the staff at clinics for accommodating us. The study was funded by Fonds de recherche du Québec – Santé (Réseau-1 Québec), Fonds Gilles-Cormier (Laval University), and the Institut universitaire de première ligne en santé et services sociaux. The funders had no role in the study design, data collection, analysis, and preparation of this manuscript. **Dr Légaré** is supported by a Tier 1 Canada Research Chair in Shared Decision Making. **Dr Witteman** is supported by a career development award from the Fonds de recherche du Québec – Santé, Research Scholar Junior 2.

#### Contributors

**Dr Diendéré**, **Dr Chipenda Dansokho**, **Ms Rocque**, **Ms Julien**, and **Drs Légaré**, **Côté**, **Pilote**, **Grad**, **Giguère**, and **Witteman** designed the study. **Dr Diendéré**, **Ms Mahmoudi**, **Dr Jacob**, **Dr Casais**, and **Dr Chipenda Dansokho** collected data. **Dr Diendéré**, **Dr Chipenda Dansokho**, **Ms Julien**, **Ms Rocque**, and **Dr Witteman** conducted data analysis. **Drs Diendéré** and **Witteman** drafted the first version of the article. **Dr Diendéré**, **Dr Chipenda Dansokho**, **Ms Rocque**, **Ms Julien**, **Dr Légaré**, **Dr Côté**, **Ms Mahmoudi**, and **Drs Jacob**, **Casais**, **Pilote**, **Grad**, **Giguère**, and **Witteman** critically revised the article and approved the final version for submission for publication.

#### Competing interests

None declared

#### Correspondence

**Dr Holly O. Witteman**; e-mail [holly.witteman@fmed.ulaval.ca](mailto:holly.witteman@fmed.ulaval.ca)

#### References

- Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med* 2012;27(10):1361-7. Epub 2012 May 23.
- Rivera-Spoljaric K, Halley M, Wilson SR. Shared clinician-patient decision-making about treatment of pediatric asthma: what do we know and how can we use it? *Curr Opin Allergy Clin Immunol* 2014;14(2):161-7.
- Hack TF, Degner LF, Watson P, Sinha L. Do patients benefit from participating in medical decision making? Longitudinal follow-up of women with breast cancer. *Psychooncology* 2006;15(1):9-19.
- Hamann J, Langer B, Winkler V, Busch R, Cohen R, Leucht S, et al. Shared decision making for in-patients with schizophrenia. *Acta Psychiatr Scand* 2006;114(4):265-73.
- Joosten EA, DeFuentes-Merillas L, de Weert GH, Sensky T, van der Staak CP, de Jong CA. Systematic review of the effects of shared decision-making on patient satisfaction, treatment adherence and health status. *Psychother Psychosom* 2008;77(4):219-26. Epub 2008 Apr 16.
- Stacey D, Légaré F, Col NF, Bennett CL, Barry MJ, Eden KB, et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev* 2014;(1):CD001431.
- Légaré F, Labrecque M, Cauchon M, Castel J, Turcotte S, Grimshaw J. Training family physicians in shared decision-making to reduce the overuse of antibiotics in acute respiratory infections: a cluster randomized trial. *CMAJ* 2012;184(13):E726-34. Epub 2012 Jul 30.
- Shay LA, Lafata JE. Where is the evidence? A systematic review of shared decision making and patient outcomes. *Med Decis Making* 2015;35(1):114-31. Epub 2014 Oct 28.
- Légaré F, Witteman HO. Shared decision making: examining key elements and barriers to adoption into routine clinical practice. *Health Aff (Millwood)* 2013;32(2):276-84.
- Couët N, Desroches S, Robitaille H, Vaillancourt H, Leblanc A, Turcotte S, et al. Assessments of the extent to which health-care providers involve patients in decision making: a systematic review of studies using the OPTION instrument. *Health Expect* 2015;18(4):542-61. Epub 2013 Mar 4.
- Dillon EC, Stults CD, Wilson C, Meehan A, Chuang J, Li M, et al. Evaluating shared decision-making across clinical topics in primary care: an exploratory study using the OPTION<sup>2</sup> observer measure. *J Patient Cent Res Rev* 2016;3(3):187.
- Légaré F. Decisions faced by patients: primary care. In: Kattan MW, editor. *Encyclopedia of medical decision making*. Vol 2. Thousand Oaks, CA: Sage Publications; 2009. p. 316-9.
- Hudon C, Chouinard MC, Diadiou F, Lambert M, Bouliane D. Case management in primary care for frequent users of health care services with chronic diseases: a qualitative study of patient and family experience. *Ann Fam Med* 2015;13(6):523-8.
- Hunt LM, Kreiner M, Brody H. The changing face of chronic illness management in primary care: a qualitative study of underlying influences and unintended outcomes. *Ann Fam Med* 2012;10(5):452-60.
- Nutting PA, Goodwin MA, Flocke SA, Zyzanski SJ, Stange KC. Continuity of primary care: to whom does it matter and when? *Ann Fam Med* 2003;1(3):149-55.
- Kievit J. Applied decision analysis. In: Kattan MW, editor. *Encyclopedia of medical decision making*. Vol 2. Thousand Oaks, CA: Sage Publications; 2009. p. 25-9.
- Degner LF, Sloan JA, Venkatesh P. The Control Preferences Scale. *Can J Nurs Res* 1997;29(3):21-43.
- Chew LD, Griffin JM, Partin MR, Noorbaloochi S, Grill JP, Snyder A, et al. Validation of screening questions for limited health literacy in a large VA outpatient population. *J Gen Intern Med* 2008;23(5):561-6. Epub 2008 Mar 12.
- Fagerlin A, Zikmund-Fisher BJ, Ubel PA, Jankovic A, Derry HA, Smith DM. Measuring numeracy without a math test: development of the Subjective Numeracy Scale. *Med Decis Making* 2007;27(5):672-80. Epub 2007 Jul 19.
- Zikmund-Fisher BJ, Smith DM, Ubel PA, Fagerlin A. Validation of the Subjective Numeracy Scale: effects of low numeracy on comprehension of risk communications and utility elicitation. *Med Decis Making* 2007;27(5):663-71. Epub 2007 Jul 24.
- Pluye P, Hong QN. Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Annu Rev Public Health* 2014;35:29-45. Epub 2013 Oct 30.
- Trevena LJ, Zikmund-Fisher BJ, Edwards A, Gaissmaier W, Galesic M, Han PK, et al. Presenting quantitative information about decision outcomes: a risk communication primer for patient decision aid developers. *BMC Med Inform Decis Mak* 2013;13(Suppl 2):S7. Epub 2013 Nov 29.
- Zikmund-Fisher BJ. The right tool is what they need, not what we have: a taxonomy of appropriate levels of precision in patient risk communication. *Med Care Res Rev* 2013;70(1 Suppl):37S-49S. Epub 2012 Sep 6.
- Zipkin DA, Umscheid CA, Keating NL, Allen E, Aung K, Beyth R, et al. Evidence-based risk communication: a systematic review. *Ann Intern Med* 2014;161(4):270-80.
- Akl EA, Oxman AD, Herrin J, Vist GE, Terrenato I, Sperati F, et al. Using alternative statistical formats for presenting risks and risk reductions. *Cochrane Database Syst Rev* 2011;(3):CD006776.
- Witteman HO, Gavaruzzi T, Scherer LD, Pieterse AH, Fuhrel-Forbis A, Chipenda Dansokho S, et al. Effects of design features of explicit values clarification methods: a systematic review. *Med Decis Making* 2016;36(6):760-76. Epub 2016 Apr 4.
- Witteman HO, Scherer LD, Gavaruzzi T, Pieterse AH, Fuhrel-Forbis A, Chipenda Dansokho S, et al. Design features of explicit values clarification methods: a systematic review. *Med Decis Making* 2016;36(4):453-71. Epub 2016 Jan 29.
- Lee YK, Low WY, Ng CJ. Exploring patient values in medical decision making: a qualitative study. *PLoS One* 2013;8(11):e80051.
- Schwartz A, Weiner SJ, Binns-Calvey A, Weaver FM. Providers contextualise care more often when they discover patient context by asking: meta-analysis of three primary data sets. *BMJ Qual Saf* 2016;25(3):159-63. Epub 2015 Jul 22.
- Barr PJ, O'Malley AJ, Tsulukidze M, Gionfriddo MR, Montori V, Elwyn G. The psychometric properties of Observer OPTION(5), an observer measure of shared decision making. *Patient Educ Couns* 2015;98(8):970-6. Epub 2015 Apr 29.
- Elwyn G, Tsulukidze M, Edwards A, Légaré F, Newcombe R. Using a 'talk' model of shared decision making to propose an observation-based measure: Observer OPTION 5 item. *Patient Educ Couns* 2013;93(2):265-71. Epub 2013 Aug 27.
- Stubenruch FE, Pieterse AH, Falkenberg R, Santema TK, Stiggelbout AM, van der Weijden T, et al. OPTION(5) versus OPTION(12) instruments to appreciate the extent to which healthcare providers involve patients in decision-making. *Patient Educ Couns* 2016;99(6):1062-8. Epub 2015 Dec 30.
- Dillon EC, Stults CD, Wilson C, Chuang J, Meehan A, Li M, et al. An evaluation of two interventions to enhance patient-physician communication using the Observer OPTION<sup>2</sup> measure of shared decision making. *Patient Educ Couns* 2017;100(10):1910-7. Epub 2017 May 1.
- MacCallum RC, Zhang S, Preacher KJ, Rucker DD. On the practice of dichotomization of quantitative variables. *Psychol Methods* 2002;7(1):19-40.
- Naggara O, Raymond J, Guilbert F, Roy D, Weill A, Altman DG. Analysis by categorizing or dichotomizing continuous variables is inadvisable: an example from the natural history of unruptured aneurysms. *AJNR Am J Neuroradiol* 2011;32(3):437-40. Epub 2011 Feb 17.
- Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977;33(1):159-74.
- Elwyn G, Miron-Shatz T. Deliberation before determination: the definition and evaluation of good decision making. *Health Expect* 2010;13(2):139-47. Epub 2009 Sep 9.
- Holman GT, Beasley JW, Karsh BT, Stone JA, Smith PD, Wetterneck TB. The myth of standardized workflow in primary care. *J Am Med Inform Assoc* 2016;23(1):29-37. Epub 2015 Sep 2.
- Edwards A, Elwyn G, Smith C, Williams S, Thornton H. Consumers' views of quality in the consultation and their relevance to 'shared decision-making' approaches. *Health Expect* 2001;4(3):151-61.
- Ford S, Schofield T, Hope T. Observing decision-making in the general practice consultation: who makes which decisions? *Health Expect* 2006;9(2):130-7.
- Canadian Employment Equity Act*. S.C. 1995, c. 44, section 3.
- Kenny DA, Veldhuijzen W, Weijden TV, Leblanc A, Lockyer J, Légaré F, et al. Interpersonal perception in the context of doctor-patient relationships: a dyadic analysis of doctor-patient communication. *Soc Sci Med* 2010;70(5):763-8. Epub 2009 Dec 11.
- Premji K, Upshur R, Légaré F, Pottie K. Future of family medicine. Role of patient-centred care and evidence-based medicine. *Can Fam Physician* 2014;60:409-12 (Eng). 421-4 (Fr).
- Saba GW, Wong ST, Schillinger D, Fernandez A, Somkin CP, Wilson CC, et al. Shared decision making and the experience of partnership in primary care. *Ann Fam Med* 2006;4(1):54-62.
- Légaré F, O'Connor AM, Graham ID, Wells GA, Tremblay S. Impact of the Ottawa Decision Support Framework on the agreement and the difference between patients' and physicians' decisional conflict. *Med Decis Making* 2006;26(4):373-90.
- Légaré F, Stewart M, Frosch D, Grimshaw J, Labrecque M, Magnan M, et al. EXACTE<sup>2</sup>: exploiting the clinical consultation as a knowledge transfer and exchange environment: a study protocol. *Implement Sci* 2009;4:14.
- Pellerin MA, Elwyn G, Rousseau M, Stacey D, Robitaille H, Légaré F. Toward shared decision making: using the OPTION scale to analyze resident-patient consultations in family medicine. *Acad Med* 2011;86(8):1010-8.
- Gagnon S, Labrecque M, Njoya M, Rousseau F, St-Jacques S, Légaré F. How much do family physicians involve pregnant women in decisions about prenatal screening for Down syndrome? *Prenat Diagn* 2010;30(2):115-21.

49. Mangin D, Stephen G, Bismah V, Risdon C. Making patient values visible in health-care: a systematic review of tools to assess patient treatment priorities and preferences in the context of multimorbidity. *BMJ Open* 2016;6(6):e010903.
50. Bensing J. Bridging the gap. The separate worlds of evidence-based medicine and patient-centered medicine. *Patient Educ Couns* 2000;39(1):17-25.
51. Mulley AG, Trimble C, Elwyn G. Stop the silent misdiagnosis: patients' preferences matter. *BMJ* 2012;345:e6572.
52. Morris E, Feig SA, Drexler M, Lehman C. Implications of overdiagnosis: impact on screening mammography practices. *Popul Health Manag* 2015;18(Suppl 1):S3-11.
53. Hudson B, Zarifeh A, Young L, Wells JE. Patients' expectations of screening and preventive treatments. *Ann Fam Med* 2012;10(6):495-502.
54. Shepherd HL, Tattersall MH, Butow PN. Physician-identified factors affecting patient participation in reaching treatment decisions. *J Clin Oncol* 2008;26(10):1724-31.
55. Valverde Bolívar FJ, Pedregal González M, Pérez Fuentes MF, Alcalde Molina MD, Torío Durántez J, Delgado Rodríguez M. Communication skills of tutors and family medicine physician residents in primary care clinics. *Aten Primaria* 2016;48(10):632-41. Epub 2016 May 5.
56. Crespo S. Portrait du profil scolaire des régions administratives du Québec. In: Institut de la statistique du Québec. *Panorama des régions du Québec. Édition 2017*. Québec city, QC: Gouvernement du Québec; 2017. p. 45. Available from: [www.stat.gouv.qc.ca/docs-hmi/statistiques/profils/panorama-regions-2017.pdf#page=45](http://www.stat.gouv.qc.ca/docs-hmi/statistiques/profils/panorama-regions-2017.pdf#page=45). Accessed 2017 Nov 14.
57. Sarma S, Hajizadeh M, Thind A, Chan R. The association between health information technology adoption and family physicians' practice patterns in Canada: evidence from 2007 and 2010 National Physician Surveys. *Healthc Policy* 2013;9(1):97-117.

---

This article has been peer reviewed.

Cet article a fait l'objet d'une révision par des pairs.

*Can Fam Physician* 2019;65:e64-75