



Decisional Stakes and Patient-Provider Incongruence during Shared Decision Making: A Family
Medicine Resident Perspective

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ABSTRACT

Background

Training Canadian physicians in shared decision-making (SDM) typically occurs during postgraduate medical education (PGME). However, the extent to which medical residents are willing to engage in SDM is unclear. As the popularity of SDM continues to grow, residents will encounter situations where patient-provider incongruence exists regarding next steps to care. Little is known about how comfortable residents are providing care when patient perspectives misalign with their own during SDM.

Objectives

The specific objectives of my study are to (i) assess how Family Medicine (FM) resident perceptions of situational stakes influences their comfort providing care when faced with patient incongruence and to (ii) describe what FM residents consider to be high versus low stakes situations when engaging patients in shared decisions.

Methodology and methods

I conducted a sequential explanatory mixed methods study with first year FM residents at McGill University who attended an academic-half day session about SDM. Quantitative: Residents were asked to complete a 7-item version of IncoRpoRATE to measure their willingness to engage in SDM with patients. Qualitative: Using extreme case-sampling of IncoRpoRATE responses, I interviewed 16 residents about what they considered as high versus low stakes situations for SDM and how this affected their comfort providing care in the context of patient-provider incongruence. Integration: I compared and combined the results of the qualitative and quantitative study components.

Results

IncorpoRATE results showed residents expressed higher comfort with incongruent patient choice when the stakes were perceived as low (7.59 [2.01]) versus high (4.38 [2.47]). Qualitative findings revealed variation in what types of decisions residents considered low and high stakes for SDM. Prostate specific antigen (PSA) tests are one example of a shared decision where there was a lack of consensus about the stakes surrounding the decision as being high or low for a patient. Factors that increased or decreased resident comfort with patient incongruence were also identified: patient health literacy, perceived consequences, involvement of proxy decision makers, administrative and legal concerns, and perceived therapeutic alliance.

Discussion and conclusion

Residents report less comfort with incongruent patient preferences when they perceive the situation to be high stakes. However, what decisions are considered high or low stakes varies widely across residents. This perception subsequently influences their comfort level engaging in SDM when patients harbor incongruent perspectives regarding a specific decision. My findings reveal the need to reassess Item 6 and Item 7 of the IncorpoRATE measure so that they better address their intended construct. More work should be done to assess what physicians understand about the stakes of situations for SDM. Medical educators may also wish to consider how individual risk perception affects comfort involving patients in medical decision-making, particularly when patient-provider incongruence arises.

RÉSUMÉ

Historique

La formation des médecins canadiens à la prise de décision partagée (SDM) a généralement lieu pendant la formation médicale postdoctorale (FMPD). Cependant, la mesure dans laquelle les médecins résidents sont prêts à s'engager dans le SDM n'est pas claire. Au fur et à mesure que la popularité de la GDT continue de croître, les résidents seront confrontés à des situations où il existe une incongruence entre le patient et le fournisseur en ce qui concerne les prochaines étapes des soins. On sait peu de choses sur le confort avec laquelle les résidents fournissent des soins lorsque les points de vue des patients ne s'agrent pas avec les leurs pendant le SDM.

Objectifs

Les objectifs spécifiques de mon étude sont (i) d'évaluer comment les perceptions des résidents en médecine familiale (FM) des enjeux situationnels influencent leur confort de fournir des soins face à l'incongruence du patient et (ii) de décrire ce que les résidents FM considèrent comme des situations à enjeux élevés par rapport à des enjeux faibles lorsqu'ils engagent les patients dans des décisions partagées.

Méthodologie et méthodes

J'ai mené une étude séquentielle sur les méthodes explicatives mixtes avec des résidents fm de première année de l'Université McGill qui ont assisté à une session académique d'une demi-journée sur le SDM. Quantitatif : On a demandé aux résidents de remplir une version en 7 items d'IncorpoRATE pour mesurer leur volonté de s'engager dans le SDM avec les patients. Qualitatif : À l'aide d'un échantillonnage extrême de cas de réponses IncorpoRATE, j'ai interviewé N = 16 résidents sur ce qu'ils considéraient comme des situations à enjeux élevés par rapport aux

situations à faible enjeu pour SDM et comment cela affectait leur confort dans la prestation de soins dans le contexte de l'incongruence patient-fournisseur. Intégration : J'ai comparé et combiné les résultats des composantes qualitatives et quantitatives de l'étude.

Discussion et conclusion

Les résidents semblent moins à l'aise avec les préférences incongrues des patients lorsqu'ils perçoivent la situation comme des enjeux élevés. Cependant, ce qui est considéré comme des enjeux élevés ou faibles varie considérablement d'un résident à l'autre. Cette perception influence par la suite leur niveau de confort s'engageant dans SDM quand les patients hébergent des perspectives incongruentes concernant une décision spécifique. Mes constatations révèlent la nécessité potentielle de réévaluer les points 6 et 7 de la mesure IncorporATE afin qu'ils répondent mieux à leur concept prévu. D'autres travaux pourraient être faits pour établir des paramètres plus définitifs entourant les enjeux des situations pour la GDS. Les éducateurs médicaux peuvent également souhaiter examiner comment la perception individuelle du risque affecte le confort impliquant les patients dans la prise de décision médicale, en particulier lorsque l'incongruence patient-fournisseur survient.

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LIST OF ABBREVIATIONS

1. SDM–Shared decision making
2. FM– Family Medicine
3. PGME–Postgraduate medical education
4. CMA–Canadian Medical Association
5. QCA–Qualitative content analysis
6. PSA–Prostate specific antigen

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CHAPTER 1: BACKGROUND AND INTRODUCTION

In 2021 my thesis supervisor, Dr. Roland Grad, was asked to teach FM residents at McGill University about preventive health care. He used this occasion to also teach FM residents about the process of SDM. To evaluate the impact of his teaching, he used a new tool to assess resident willingness to engage in SDM called IncorporATE, which is currently unavailable for public use. This tool contains 7-items; two of the seven items address physician comfort when a patient prefers a treatment or screening option not aligned with their clinical recommendation. These items are identical except for the ‘stakes’ of the situation, which are described as being "low stakes" or "high stakes" in item 6 and item 7, respectively. To our knowledge, little is known about how the perceived stakes of a clinical decision influence comfort providing care when incongruence exists between a patient’s preferences and a care provider’s recommendation. I undertook this work to examine how resident physicians understand low or high stakes shared decisions and how these perceived stakes influence their comfort providing care when patients make choices that they may not make themselves.

1.1 Background and conceptual frameworks

1.1.1 History of medical decision making

Physicians were the primary authority regarding medical decision making until the 1960s. Due to increasing societal emphasis on patients' rights and the growth of patient advocacy organizations, by the 1980s, there became a need to re-evaluate paternalistic medical practices (Hoving et al., 2010; Timmermans, 2020). This shift led to SDM in the 1990s, whereby patients were actively involved in decisions with their care provider based on equality and shifting away from paternalistic practice (Hoving et al., 2010; Timmermans, 2020). As SDM continues to gain popularity (Finset & Street, 2022) there is a need to explore resident physician attitudes toward and understanding of SDM .

1.1.2 What is shared decision making?

Patient centered care is respectful and responsive to patient values and preferences, the pinnacle of which is the active engagement of patients when health care decisions must be made (Epstein & Street, 2011). SDM occurs when several reasonable alternatives exist which can be compared using evidence about relevant harms and benefits (G. Elwyn et al., 2017). Charles and colleagues first introduced SDM and provided the original framework for SDM (Charles et al., 1997). This included at least two people involved in the treatment decision and emphasized two-sided information sharing as a pre-requisite to initiating the SDM process. Researchers have since created more models for SDM for educational purposes (Stiggelbout et al., 2015).

For instance, Elwyn's **Three-Talk Model** simplifies the various conditions for making a shared decision into three phases: team talk, option talk, and decision talk (Glyn Elwyn et al., 2017). Team talk involves working with a patient to describe choices, offer support, and ask about

goals. Option talk entails discussing the inherent risks and benefits for each available option for a treatment decision. Finally, decision talk involves informed preferences and making preference-based decisions (Glyn Elwyn et al., 2017). Similarly, The Agency for Healthcare Research and Quality’s **SHARE Approach** simplifies SDM into five steps: Seek patient participation, Help patient explore and compare treatment options, Assess patient value and preferences, Reach a decision with the patient, and Evaluate the patient’s decision (Brach & Borsky, 2020).

As sustainable medical care requires clinicians to consider time required to deliver interventions in practice (Pieterse et al., 2019), it follows that clinicians may want to focus the implementation of SDM based on how they perceive the stakes of the situation for their patient (Ali et al., 2017; Driever et al., 2022). When the stakes of a patient making a choice their physician would not make are perceived as low, residents may be more comfortable when a patient makes an incongruent decision at the end of the SDM process (Driever et al., 2022); accordingly, it is important to examine resident physician descriptions of low and high stakes shared decision and to consider how stakes influence comfort when patients and providers are incongruent about decisions (Ali et al., 2017; Lemmon et al., 2019; Padilla Garrido et al., 2019; Sommovilla et al., 2019; Zisman-Ilani et al., 2020). This may have implications for the way SDM is taught in medical education (Bossen et al., 2019; Junod Perron et al., 2018).

1.2 Shared decision making in medical education

1.2.1 Shared decision-making: required competencies for medical education

The evolution of patient-centered care increasingly demands physicians to be well versed in the recognition of preference-sensitive decisions and SDM (Clayman et al., 2017; Morrow et al., 2011). SDM is embedded in PGME and has received growing support in health policy worldwide

(Durand et al., 2018). Two competency categories have emerged as imperative to SDM: relational skills and risk communication (Légaré et al., 2013). Risk communication refers to the ability to discuss both the risks and benefits of a particular decision (Hoffmann et al., 2021; Laight, 2022; Lewiecki, 2010). Relational skills refer to areas such as communication with the patient to elicit patient values and preferences about the decision at hand (Rake et al., 2022). However, one of the most critical aspects of SDM may also be one of the hardest for residents to grasp: physicians need to be comfortable with patients making choices that they themselves may not make (Mackwood et al., 2023).

Although there is no best way to teach SDM, consistently highlighting opportunities for SDM helps learners recognize the practical value of the approach (Thériault et al., 2019). It is important for young physicians to be preference sensitive when considering why a patient may not chose something in line with their preferences and values (Mackwood et al., 2023). Understanding how situational stakes may influence comfort with incongruence could inform best practices for teaching SDM in medical education.

1.3 Introduction

As medical residents are the doctors of tomorrow, research on resident perspectives of learning and implementing SDM is important for progressing PGME (Barnhoorn, 2020). There is evidence that primary care physicians recognize the importance of SDM and are receptive to additional SDM training to better understand the process (Burton et al., 2010; Menear et al., 2018). Further investigation is required to ensure that clinician educators are adequately equipped to teach SDM to future generations of physicians. This includes looking at the way SDM is understood by

learners; particularly, how the perceptions of stakes can influence comfort with patient incongruence when engaging in SDM.

1.3.1 Problem statement: Resident comfort with decisional incongruence when shared decision-making is needed

There is a need to assess physician attitudes as they pertain to SDM, especially amongst physicians in training (Caldwell, 2008; Driever et al., 2022). Specifically, assessing resident physicians' comfort with incongruent patient decisions during SDM is important. As the popularity of SDM continues to grow in Canadian healthcare (France Légaré et al., 2011; Légaré et al., 2017), resident physicians may encounter situations where patient-provider incongruence exists regarding next steps to care (Müller et al., 2016). Accordingly, understanding resident physician comfort with patients making decisions unaligned with their preferences in the context of low and high stakes is important to inform instruction and ensure the next generation of family doctors are equipped for SDM with patients.

1.3.2 Problem statement: Definitions of situational 'stakes' when engaging in shared decision-making are unclear

Although literature on resident attitudes towards SDM exists for specialists in Surgery or Internal Medicine (Bossen et al., 2022; Bossen et al., 2019; Carlisle et al., 2018), the conditions upon which the stakes of a shared decision depend are understudied in other fields of practice such as FM are unclear. Decisional stakes in the context of patient-provider incongruence appear in the IncorporATE measure of physician willingness to engage in SDM (Berkowitz et al., 2021). Considering the novelty of decisional stakes in the context of SDM, investigating FM resident comfort when SDM results in incongruence and how the stakes of the situation can influence this comfort may better inform the way SDM is taught in primary care. Clarifying what makes a

situation high or low stake according to FM residents may be useful in designing future teaching interventions about SDM for resident family physicians.

1.3.3 General objectives

The general objectives of my thesis are to explore what FM residents perceive as low or high-stake situations when engaging in SDM and to examine how these stakes can influence their comfort when patient preferences misalign with their preferences. This work will contribute to knowledge of how decisional stakes influence physician comfort with incongruence from patients in the context of SDM.

CHAPTER 2: LITERATURE REVIEW

Many studies have assessed the role of SDM in medical education by creating and implementing educational interventions and observing subsequent physician SDM practices (Amell et al., 2022; Bossen et al., 2022; Geiger et al., 2017; Grad et al., 2022; Ritter et al., 2019; Rusiecki et al., 2018; Simmons et al., 2016; Wilkes et al., 2013). Despite the rapid growth of literature pertaining to SDM interventions and the increased production of instruments designed to assess SDM practices and attitudes (Berkowitz et al., 2021; Elwyn et al., 2013; Elwyn et al., 2003; Kriston et al., 2010), fewer studies have evaluated the existing attitudes and understanding held by resident physicians about learning and incorporating SDM into medical practice (Alameddine et al., 2020; Alden et al., 2013; Allaire et al., 2012; Caldwell, 2008; Young et al., 2008; Zeuner et al., 2015).

To inform study development, I conducted a literature review to assess the current state of teaching SDM in PGME and resident physician attitudes towards learning and using SDM. Existing instruments used to measure SDM use and attitudes in medical education research were also examined. Understanding the way physicians-in-training comprehend and use SDM may help educators better integrate SDM into PGME.

2.1 Literature review: strategy and methods

2.1.1 Literature review objectives

The overarching goal of this literature review is to gain a richer understanding of resident physician attitudes towards learning and implementing SDM. Specifically, my interest was to investigate (i) how use of and attitudes towards SDM are assessed in medical education, (ii) the current attitudes and perspectives of residents about SDM, to (iii) identify any knowledge gaps that need to be addressed to improve how SDM is taught in PGME.

2.1.2 Information sources consulted

Information sources consulted were PubMed (MedLine) and Google Scholar. A search strategy was developed in collaboration with a professional librarian and was run in the MedLine database. Additionally, the Google alert filter was activated and used over the course of the literature review and thesis study to notify of any new work pertinent to teaching SDM to medical residents. Various print and digital textbooks were also consulted based on recommendations from my thesis supervisor. Additionally, an expert in the field, Dr. Glyn Elwyn, was consulted. Dr. Elwyn provided additional references pertinent to the aims of this literature review outside of what was found through other information sources.

2.1.3 Literature review search strategy

A search matrix was developed in collaboration with a specialized research librarian through McGill University Library Services. MeSh terms and subheadings were consulted and embedded into the search strategy using Boolean logic such as AND, OR, and NOT to further filter results. In addition to consulting the MeSh database to build my search strategy in MedLine, text words linked to key concepts such as “shared decision making” and “medical education” and “physician

attitudes” were also incorporated to further streamline search results towards SDM in medical education. A copy of the search strategy used can be found in [Appendix A](#).

2.1.4 Inclusion and exclusion criteria

As literature that investigates SDM in the educational context of FM residency is limited (Dion et al., 2016; Grad et al., 2022), I designed my inclusion and exclusion criteria to be less conservative in order to access as much relevant literature as possible. However, certain exclusion criteria were established to ensure that focus remained on SDM and PGME.

The inclusion criteria for studies were as follows: (i) the topic of the study pertained to SDM with a special focus on studies that contained educational interventions about SDM with medical residents, (ii) the population of the study is physicians, medical residents, or postgraduate medical educators, and (iii) the study is available for retrieval through McGill University and is (iv) available in the English language.

The exclusion criteria for studies were as follows: (i) the topic of the study did not pertain to learning to make shared decisions in clinical practice or patient centered care, (ii) the population of the study were medical students or non-physicians (iii) interventions were carried out at the level of undergraduate medical education or interventions did not center around SDM (iv) the study mainly focused on patient attitudes and perspectives related to SDM instead of physicians’ and (v) the study was unavailable for retrieval through McGill University and/or (vi) unavailable for retrieval in English.

2.1.5 Study selection

The search matrix used yielded 296 eligible studies from PubMed (April 25, 2022). I imported these studies into EndNote and removed duplicates. My supervisor and an expert in the field also

provided 13 additional studies. This resulted in a total of 232 studies after duplicate removal. These studies were screened via their titles and abstracts for subject matter relevant to the objectives of my literature review, reducing the number of eligible studies to 117. One-hundred and fifteen studies were omitted at this stage as they failed to satisfy inclusion criteria.

After examining and annotating the screened literature, I extracted studies that pertained to literature review objectives to inform the next steps of my mixed methods evaluation. For each potentially relevant publication, I retrieved and read the full text article. A total of 112 studies that related to the objectives of my literature review were found. Five studies were excluded at this stage as they pertained to undergraduate medical education and not PGME. A flow diagram detailing the study selection process can be found in [Appendix A](#). The findings of the literature review are presented in Sections 2.2-2.5.

2.2 Facilitating the learning of shared decision making in medical education

The first objective pertains to how SDM is taught and facilitated in medical education. This included finding work pertaining to educational tools used to measure SDM use or attitudes in physicians and the effectiveness of educational interventions teaching SDM at the level of PGME.

2.2.1 Measuring shared decision-making practices and attitudes in physicians

As SDM continues to permeate many medical specialties (Durand et al., 2014; Légaré et al., 2017), different tools have emerged that aim to measure physicians' use of SDM and to assist physicians in implementing SDM with patients, although the paucity of evidence based SDM tools available to clinicians is still limited (Ali-Ahmed et al., 2019). One of these assessment tools is **OPTION** (Nicolai et al., 2012). OPTION is an observation-based measure which aims to assess the extent to which physicians incorporate patients in medical decision making (Elwyn et al., 2003). Since its conception, several studies have been done that have successfully validated the OPTION scale in different countries (Chen et al., 2020; Kolker et al., 2018; Shunnmugan et al., 2021).

CollaboRATE is another measure used in SDM research and education that assesses clinician use of SDM through patient evaluation and feedback. Designed to be a fast and direct measure of a physicians' competencies in SDM according to the patient, it should be noted that this measure lacks the appropriate psychometric data to support its use as a general measure (Elwyn et al., 2013). There has been a comparison study of the CollaboRATE measure as a means of validation (Brodney et al., 2019).

The **SDM Process 4 Scale** uses four measures to assess a physician's SDM behaviors: discussion of options, pros, cons, and preferences (Fowler et al., 2021). This measure also

evaluates use of SDM using participant evaluation and feedback of clinicians. Validation studies have been done for SDM Process 4 (Brodney et al., 2019; Fowler et al., 2021).

Finally, **SDM-Q9** is a nine-item questionnaire designed to measure the process of SDM in clinical encounters, also from the patient’s perspective (Kriston et al., 2010). This scale has had several validation studies in a variety of countries (Baicus et al., 2019; Doherr et al., 2017).

In contrast to measures that seek to quantify the ‘amount’ of SDM done by physicians during medical consultations across various specialties, psychometric-based measures seek to quantify psychological constructs such as attitudes towards SDM. Attitudes are defined as enduring and general evaluations of an object, person, group, issue, or concept (Shrigley et al., 1988). In the context of SDM, measures of attitude can center around constructs such as physicians’ openness to learning and using SDM in practice (Berkowitz et al., 2021).

There is a need to assess physician attitudes toward SDM, as meeting criteria for objective SDM does not ensure that the decision-making process is subjectively collaborative (Pavlo et al., 2019; Saba et al., 2006). Other dynamics such as trust, and power may influence whether a shared decision is actually shared (Pavlo et al., 2019; Saba et al., 2006). This highlights the need to study the archetypes of physician attitudes surrounding SDM if it is to become a regular part of medical education and practice.

The **Patient-Practitioner Orientation Scale (PPOS)** is a tool that can be used to assess the extent to which a physician holds patient centered attitudes (Krupat et al., 2000). Although not explicitly referring to SDM, a measure of how patient-centered a physician is in their approach to practice may be an indirect measure of their willingness to engage patients in SDM. This scale has

had many validation studies done and has been assessed cross culturally as well (Pereira et al., 2013).

More recently, **IncorpoRATE** is a unique measure that seeks to gauge physicians' attitudes towards using SDM in clinical practice. Attitude in this measure centers on the concept of physician willingness to incorporate SDM in patient encounters, essentially, how open physicians are to using SDM (Berkowitz et al., 2021). However, like other psychometric assessment tools this measure needs to be further validated.

IncorpoRATE underwent two rounds of pilot testing with US physicians during development. Physicians were recruited based on the SERMO database and were senior practitioners from a wide variety of medical specialties. The SERMO database is a research database of willing clinicians to test out assessment tools, such as IncorpoRATE (Berkowitz et al., 2021). IncorpoRATE was not validated with resident physician populations. The concept of decisional stakes emerged during the final stages of piloting. As such, questions containing these constructs did not undergo further review by physicians (Berkowitz et al., 2021).

It is also important to acknowledge the extensive amount of consultation, financial input, potential revisions to medical training and alterations to physicians common practice may be required to integrate SDM into medical education (Elwyn et al., 2022). This can be a difficult adjustment heavily dependent on physician support (Pollard et al., 2015). Accordingly, research pertaining to educational interventions about SDM and physicians' attitudes regarding SDM constructs is important.

2.2.2 Educational interventions to teach shared decision making: Are they effective?

The benefits of SDM in specialties like FM are inherent because these specialties center around longitudinal patient-provider relationships and are influenced by factors such as trust and communication (Adams & Drake, 2006; Elwyn et al., 2014). Accordingly, the effectiveness of past SDM interventions is important to consider in the context of PGME. Out of 112 studies, only 11 pertained to evaluating the effects of educational interventions about SDM in PGME. The structure and outcomes of these interventions for medical residents are outlined in Table 1.

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Study	Population	Intervention	Comparison Group	Outcome
Amell et al., 2021	First year residents in the Internal Medicine (IM) Residency Program at Montefiore Medical Center, Bronx NY, USA.	100-minute workshop using role-play practice and evaluated with pre and post online Objective Structured Clinical Examinations (OSCEs) and survey.	Pre-post design with no comparison group: OCSE scores and online survey responses from residents compared pre and post intervention.	Intervention improved SDM communication skills, the ability to find and provide risk-benefit education, and SDM-facilitating attitude.
Dion et al., 2016	Second year FM residents at Laval University, Montreal, Quebec	DECISION+2: Web-based tutorial to train family physicians in shared decision making (SDM) regarding the use of antibiotics for acute respiratory infections (ARIs)	Pre-post design with no comparison group: use of DECISION+2 and knowledge test scores pre and post intervention	The tutorial seemed less effective for increasing SDM knowledge scores.
Grad et al., 2022	First- and second-year FM Residents at McGill University, Montreal, Quebec, Canada.	A lecture and a workshop on implementing SDM in preventive health care. Before the lecture (T1), participants completed a measure of their willingness to engage in SDM. Six months later, participants completed the measure a second time (T2).	Pre-post design with no comparison group: willingness for SDM measure scores from T1 (pre-intervention) and T2 (6 months post-intervention) compared.	The willingness to engage in SDM is highly variable among residents. Although mean scores at T2 were significantly higher, the educational importance of this change was questioned.

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Ritter et al., 2019	Senior internal medicine residents across 3 hospitals in Switzerland	2-hour workshop and pocket card use in clinical practice.	Pre-post design with no comparison group: Encounters with standardized patients (SPs) were recorded and SDM performance was assessed using a SDM completeness rating scale (scores ranging from 0 to 100), a self-reported questionnaire, and SPs rating the residents.	After training, participants were more comfortable with their SDM-related knowledge and skills, and with practicing SDM. Physicians applied SDM concepts more often in practice and SPs felt more comfortable with how participants discussed their care.
Rusiecki et al., 2018	Third- and fourth-year internal medicine and pediatric residents across four outpatient continuity clinics in the University of Pittsburgh Medical Center internal medicine residency program during their final six months of training,	A seven-step SDM model and a skills-focused standardized patient case were integrated into an ambulatory rotation for senior residents and video recording residents in practice	Pre-post design with no comparison group: survey answers from pre and post intervention were compared for participants	Knowledge of, attitudes toward, and demonstration of SDM skills in practice increased across all participants
Simmons et al., 2016	First to fourth year (PGY1-PGY4) internal medicine residents from Massachusetts General Hospital, Boston, MA, USA	1- and 2-hour workshop curriculum for internal medicine residents to promote SDM in treatment decisions for four common chronic conditions:	N/A	Overall, most participants rated the workshop as excellent or very good and said that they would change their practice based on what they learned. Decision

		diabetes, depression, hypertension, and hyperlipidemia. The workshops included a written case exercise, a short didactic presentation on shared decision-making concepts and strategies for risk communication, and two role-playing exercises.		Worksheets addressing diabetes, depression, hyperlipidemia, and hypertension were downloaded almost 1,200 times in the first 8 months following the workshops. Preceptors were able to observe only one consult during which one of the four topics was discussed
Stacy et al., 2012	Medical residents enrolled in training at a large academic teaching hospital and completing residency focused on oncology or palliative care.	3-h educational SDM workshop provided by an interprofessional team comprising a physician and a nurse.	Pre-post design. Main outcome measures were feasibility of the study design and acceptability of the SDM workshop. secondary outcomes included quality of SDM provided to simulated patients and intention and its determinants to foster SDM with patients facing health decisions	Findings from this pilot study suggest that it was feasible and acceptable to evaluate an intervention aimed at enhancing SDM skills of medical residents in oncology-related specialties. Despite that these residents had positive intentions to engage patients in SDM, they demonstrated few SDM skills at baseline. The 3-h educational intervention appears to help enhance their skills and the

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				residents found it very acceptable.
Tucker Edmonds et al., 2020	Obstetrics and gynecology residents at the University of Indiana School of Medicine	Three simulation scenarios with increasing complexity to assess the skills of residents in their first, second, or third postgraduate year in using SDM in TOLAC counseling in the form of objective structured clinical examinations (OSCEs)	N/A	The majority of residents provided complete discussions of the clinical issue (93%), chances of success (72%), and maternal and fetal risks (100% and 85%, respectively) but obtained partial assessments of understanding (78%). Discussions of benefits were typically absent, apart from maternal benefits (47%). More than 40% of residents did not discuss the patient's goals, 53% lacked discussion of uncertainties related to TOLAC, and half failed to explore the patient's preference, with most deferring a decision to a future encounter
Tucker Edmonds et al., 2019	Fourth year OB/GYN residents between 2013 and 2015 at the Indiana University	Objective Structured Clinical Examination (OSCEs): Residents	N/A	All residents provided "complete" discussions of the clinical issue and "complete" or

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	School of Medicine.	counseled a standardized patient presenting with preterm premature rupture of membranes at 23 weeks' gestation. Braddock's 9-item measure of SDM was adapted to a 10-item scoring rubric		'partial' ratings for informing the woman of her prognosis and addressing her role in decision-making. Discussions of her goals and preferences were often absent. Only 42% of residents discussed uncertainties.
Worthington et al., 2020	PGY 2-PGY 4 Internal medicine and pediatric residents	A curriculum to teach contraception counseling under the framework of SDM for IM residents. The curriculum focused on contraception counseling through the lens of SDM. The curriculum consisted of a didactic teaching session with integration of an instructional video and structured interactive discussion. The session lasted 60 minutes	Pre-post design: Surveys were administered pre and post intervention (pre-curriculum and post-curriculum) over the course of the two-year program	On pre- and post-curriculum surveys, residents reported improvement in contraception knowledge and comfort with contraception counseling. Residents expressed strong support for SDM before and after the curriculum
Yuen et al., 2013	Internal medicine residents that attended an annual intern	The intervention consisted of a PowerPoint online module	Pre-post design: Participants completed surveys that included self-	important self-assessed communication skills learned

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	retreat at an internal medicine residency program (located in New York City)	followed by a four-hour workshop implemented at a retreat for medicine interns training at an urban, academic medical center.	assessed skills learned, an open-ended question on the most important learning points from the workshop, and retrospective pre- and post-workshop comfort level with ICU communication skills. Participants rated their satisfaction with the workshop.	reflect key components of shared decision making, which include assessing the family's understanding of the patient's condition and obtaining an understanding of the patient/family's perspectives, values, and goals. Interns reported significant improvement in their comfort level with ICU communication skills. Overall satisfaction with the intervention was high.
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Table 1: Individual study results (N=11)

2.3 Resident attitudes towards shared decision making

The second objective of the literature review pertained to resident physician attitudes towards learning and implementing SDM. Barriers to learning and using SDM were looked at to investigate what factors may prevent medical residents from adopting SDM as part of clinical practice.

2.3.1 Assessing physician attitudes about shared decision making in medical education

General attitudes amongst physicians remain positive towards learning SDM (Driever et al., 2020; Forcino et al., 2018; Grad et al., 2022), however attitudes and level of support varies by clinical scenario, treatment decision, and specialty (Grant et al., 2020; Javaid et al., 2022; Woltz et al., 2018). For instance, findings from work by Menear et al., 2018 indicate that primary care physicians recognize the importance of SDM and are receptive to additional SDM training to better understand the process. Specialties like obstetrics reported higher levels of support for SDM whereas the least support for SDM was found in surgical specialties (Pollard et al., 2015). Cancer specialists also emphasized the importance of SDM and were aware of the need to involve patients in deciding about treatments pertaining to recurrent cancers (De Snoo-Trimp et al., 2015).

Furthermore, Ali-Ahmed et al., 2019 found similar sentiments echoed by cardiologists in their study, although the vast majority of physicians understand the benefits and attempt to engage in SDM, less than half of these physicians are able to access and use SDM tools while an even smaller minority were aware of other factors such as patient gender and race that may also affect the SDM process. Emerging work examining the factors that influence participation in SDM programs indicate that affective attitudes and perceived behavior control influence intentions to step away from paternalistic medicine (Allaire et al., 2012).

Much of the literature that demonstrates that a vast majority of physicians have open attitudes towards SDM in clinical. (Ali-Ahmed et al., 2019; De Snoo-Trimp et al., 2015; Zeuner et al., 2015) also acknowledges the disparity between attitude and implementation demonstrated by physicians under study. It is important to examine potential underlying barriers that may hinder otherwise willing physicians from engaging in SDM.

2.3.2 Barriers to learning shared decision making according to physicians

Despite seemingly welcoming attitudes towards including patients in medical decisions, most literature alludes to concerns voiced by physicians when attempting to learn and utilize SDM. In a study of rural primary care physicians' perspectives on clinical practice guidelines pertaining to SDM, results indicated that physicians may feel tension between what they perceive as two competing norms of good practice: the need to consider patient preferences and the pressure to adhere to clinical guidelines, this may be an underlying reason for why the use of SDM in practice is not reflective of physician attitudes towards the practice (Boivin et al., 2008).

Indeed, it appears that despite many doctors expressing general support for incorporating SDM into practice, most continued to hold fundamentally inconsistent beliefs about practicing SDM (Zeuner et al., 2015). Many participants stated that they felt comfortable discussing patient value and preferences yet simultaneously described concerns about responding to patients who disagree with a recommendation.

Furthermore, previous work by (Charles et al., 2004; Charles et al., 2003) also demonstrated similar concerns held by physicians when a patient and physician come to a decisional stalemate. In such cases, findings revealed that physicians tried to prolong the discussion until the patient aligned their preferences with those of the provider, this clearly highlights the need to investigate

whether physicians genuinely understand the principles of SDM and are able to translate them to practice (Charles et al., 2003). Many physicians also felt that discussing uncertainty and clinical equipoise may reflect poorly on their skill set rather than the quality of the scientific evidence available for a particular decision, further deterring them from pursuing shared approaches in the face of patient provider incongruence and decisional uncertainty, especially among newer physicians (Zeuner et al., 2015). Alokozai et al., 2022 found that a well-informed and motivated group of specialists were not in tune with their patients’ perceived involvement in decision-making; there was poor agreement between patients and surgeons regarding the extent of patient participation in decision-making despite the practitioners’ belief that they were involving patients in medical decisions and employing characteristics of SDM.

In a longitudinal study observing primary care providers’ perceptions about SDM, it was found that physicians and resident physicians shared the belief that the patient should rely on the knowledge of their physician as opposed to independently consulting external information sources (Cantaert et al., 2021). However, these findings are concerning when we consider the growing preference for patients to be involved in their medical decision-making (Carlsen & Aakvik, 2006) and the myriad of medical information available to patients as a result of the Internet (Benetoli et al., 2018; Langford et al., 2020).

As demonstrated, the barriers that may prevent doctors from engaging in SDM primarily center around physician understanding about what SDM entails, and individual attitudes and beliefs held by physicians surrounding the role of the patient and provider in health care decisions (Alameddine et al., 2020; Alden et al., 2013; Bieber et al., 2009; Bossen et al., 2022; Charles et al., 2004; Coylewright et al., 2017; De Snoo-Trimp et al., 2015; Dodds et al., 2016; F. Légaré et al.,

2011; Rusiecki et al., 2018; Tinsel et al., 2013; Treadwell et al., 2021; van der Horst et al., 2011; Zeuner et al., 2015).

Therefore, despite an apparent acceptance towards less paternalistic practices in medicine, the practical implications and implementation of SDM strategies must be carefully observed to ensure that educational interventions are reflective of practical behaviors.

2.4 Current gaps in knowledge and directions for future research

The final objective of this literature review was to investigate whether any gaps were present in current literature pertaining to SDM to inform future research that may attempt to fill in these identified lacunae.

2.4.1 Disparity between attitudes towards and implementation of shared decision making

Despite overall willingness and positive attitudes towards incorporating SDM into medical education, there is a large disparity between what physicians think and what they actually do in clinic in regard to involving patients in medical decisions (Aoki & Ohbu, 2016; Davis et al., 2011; Dodds et al., 2016; Edwards et al., 2005; McKeown et al., 2002; Schoenfeld et al., 2019; Woltz et al., 2018). Although forty-one percent of physicians reported that shared discussion between doctors and patients was important, only a fraction of them stated that they were actually engaging in SDM practices in outpatient clinic (Aoki & Ohbu, 2016).

As medical residents are the physicians of tomorrow, it is important to consider whether medical residents are benefitting from the SDM interventions delivered to them as medical education shifts away from paternalistic medical practice. Despite recognition of its numerous benefits, the implementation of SDM into routine clinical practice is occurring slowly (Alden et al., 2013). The question must be asked as to why there is a large disparity between physician attitudes towards SDM and its implementation in practice (Davis et al., 2011; Eggeling et al., 2020; Forcino et al., 2018; Pollard et al., 2015; Shungu et al., 2022).

2.4.2 Directions for future research

Research must be done to understand why doctors struggle to involve patients in medical decision making (Driever et al., 2022) and why some physicians tend to involve patients proportionally to

their perception of disease severity (Burton et al., 2010). This suggests that there is an aptitude for enabling patient involvement and that physicians have the capacity to alter their attitudes and behaviors related to medical decision making (Blumenthal-Barby et al., 2019; Burton et al., 2010). It is possible that physician perceptions about SDM may differ when discussing emergent and complex decisions (Carlisle et al., 2018).

Accordingly, investigating the extent to which the severity or ‘stakes’ of a medical decision influences physician comfort with incongruent patient choice is important to inform SDM literature and medical education. For example, in ‘higher-stake’ scenarios, surgeons make conservative clinical decisions dominated by the disease and personal justifications as opposed to incorporating patient values and preferences (Whelehan et al., 2021). High stakes were interpreted as complex surgical cases which could have potentially serious risks or consequences for patients in this study. However (Whelehan et al., 2021) also acknowledge further research is needed to explore other variables known to affect clinical decision-making such as sociocultural bias, social media use, (Alden et al., 2014; Benetoli et al., 2018; Camerini & Schulz, 2016; Zisman-Ilani et al., 2020) and the severity of the outcome in decision-making (Gerritse et al., 2022; Medendorp et al., 2021; Stiggelbout et al., 2015).

Medical residents’ attitudes have been sparsely studied in literature on SDM but may be valuable markers in determining current trends and future directions for SDM in medical education (Caldwell, 2008; Driever et al., 2020; Driever et al., 2022; Kheirkhah et al., 2020). There is a need to research how resident physicians think about high and low stakes shared decisions and to what extent these stakes influence their comfort with incongruent patient choice.

IncorpoRATE mentions high stakes and low stakes situations for SDM. Examining the literature reveals sparse use of the ‘decisional stakes’ (Ali et al., 2017). Relevant literature pertains to consequences of SDM interventions with patients (Blumenthal-Barby et al., 2019; Elwyn et al., 2009; Elwyn et al., 2016). Consequences in shared decision making typically refer to the harms or benefits associated with certain decisions in medical practice, for instance, cancer screening in primary care (Petrova et al., 2015). Stakes and consequences may also refer to organizational level implications, for example, increased costs or increased vulnerability to legal issues when discussing SDM (Elwyn et al., 2016; Elwyn et al., 2022). Literature presents an unclear definition of what shapes the stakes of a decision-making situations that can occur in patient centered practices (Blumenthal-Barby et al., 2019). Considering the clinical limitations and ambiguities of SDM (Elwyn et al., 2022) it is important to increase our knowledge about the effects of using SDM on health decisions across a varying degree of severity and health domains (Elwyn et al., 2022).

Accordingly, for this thesis I defined high stakes situations to be those where the potential consequences for patients are perceived to be severe and long lasting (Ali et al., 2017; Coylewright et al., 2017; Elwyn et al., 2016). Low stakes situations are defined to be those where the potential consequences are perceived to be less severe and transient for patients (Ali et al., 2017; Ali-Ahmed et al., 2019; Elwyn, 2006; G. Elwyn et al., 2017; Elwyn et al., 2016; Zeuner et al., 2015). The crucial questions regarding the discrepancy between acknowledgment of SDM as an important model and the general lack of its application in patient care might be addressed further by evaluating the attitudes, education, and training of medical residents (Caldwell, 2008).

2.5 Study objectives and research questions

As a mixed methods study, the objectives of this research are both quantitative and qualitative in nature. This study seeks to contribute to the gap in knowledge surrounding resident comfort with diverging patient preferences based on their perceptions of the stakes of a decision to be made.

2.5.1 Quantitative objectives

Using the IncoRpoRATE tool as a measure of resident physician comfort with incongruence across low stake and high-stake situations, this study will attempt to quantify the relationship between situational stakes being high or low and comfort with decisional incongruence amongst FM residents.

2.5.2 Qualitative objectives

This study will attempt to assess when resident family doctors consider a decision as high stakes versus low and to what extent their perceptions of decisional stakes affect their comfort with a patient making a choice, they would not endorse during SDM. Being able to qualitatively describe the degree to which decisional stakes influence a junior clinician's comfort with letting patients make incongruent decisions may have implications to inform the way that SDM is taught at the level of primary care. This may also enhance existing literature and future investigations regarding decisional stakes in SDM.

2.5.3 Research questions

Two research questions have emerged that pertain to resident physician perceptions of high and low stake situations when incongruence exists between patient and provider. The aim of this study is to answer the following research questions:

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- I. To what extent do the stakes of a shared decision influence FM resident comfort in situations where patient preferences are incongruent with a particular clinical recommendation?
- II. What do FM residents consider to be low or high stakes situations for shared decisions in primary care?

CHAPTER 3: STUDY DESIGN AND METHODOLOGY

To conduct my study, I adopted a sequential explanatory mixed methods design to better understand how decisional stakes influence FM comfort with patient incongruence during SDM (Bowen et al., 2017; Creswell & Clark, 2007).

3.1 Study design and ethics

3.1.1 Adoption of sequential explanatory mixed methods design

The opportunity to collect quantitative data from a large sample of FM residents was limited to a scheduled workshop at the Faculty of Medicine and Health Sciences at McGill University in May of 2022. Consequentially, a sequential mixed methods design as opposed to convergent mixed methods approaches (Ivankova et al., 2006) was adopted.

The academic half day intervention consisted of FM residents completing an online measure of willingness to engage in SDM during the workshop and then discussing their answers in semi-structured interviews following the workshop. Interdependence exists between the quantitative and qualitative study components during data collection and analysis: residents invited for follow-up interviews were selected based on their scores for the last two items of the IncorporATE measure completed during the academic half-day.

My intention was to assess if residents could explain their ratings for IncorporATE when interviewed to better understand how their perceptions of stakes influence comfort when faced with incongruence from patients about how to proceed with care. This data triangulation method aims to contextualize and validate quantitative findings using qualitative data, thus calling for the adoption of a sequential explanatory design of mixed methods research (Bowen et al., 2017). The adopted sequential explanatory design framework (Creswell & Clark, 2007) is presented in Figure 1.

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S T E P 1	PHASE 1 QUANTITATIVE	
	Data Collection and Analysis	- Collect data from residents during Common Core workshop on SDM in May 2022 using an online measure of willingness for SDM. - Analyze quantitative data using descriptive statistics
S T E P 2	INTEGRATION	
	Phase 1 Analysis Informs Phase 2 Recruitment	- Extreme case sampling used to isolate residents eligible for Phase 2 interviews. - Purposely recruit these residents
S T E P 3	PHASE 2 QUALITATIVE	
	Data Collection and Analysis	- Residents complete two semi-structured interviews between June 2022 and December 2022 - Interview data analyzed using qualitative content analysis
S T E P 4	INTEGRATION	
	Integration of Phases and Research Question Answers	- How do the stakes influence resident comfort when faced with decisional incongruence with patients? - What do residents consider to be low and high stakes shared decisions?

Figure 1: Sequential Explanatory Mixed Methods Design (Adapted from (Creswell & Clark, 2007))

3.1.2 Data confidentiality and ethics

Residents had the opportunity to complete and submit an online measure during the SDM lecture and workshop. Accordingly, ethical approval and participant consent was needed before study initiation. Institutional Review Board (IRB) approval was obtained from McGill University Faculty of Medicine and Health Sciences ([Appendix B](#)) to conduct Zoom interviews with and collect qualitative data from residents. As I intended to use the IncorpoRATE measure, which is unreleased for public use, permission to use IncorpoRATE in my study was obtained from its developers prior to initiation ([Appendix C](#)). Prior to study commencement, electronic consent forms were administered to obtain permission to contact residents for brief interviews about their answers ([Appendix D](#)). Consent to participate in both study phases could be obtained simultaneously during the workshop with this strategy. A second coder was also hired for the qualitative phase of this project to strengthen internal validity of analyzed interview data.

All collected data was stored securely on a password protected McGill OneDrive belonging to my primary supervisor, Dr. Roland Grad. Audio and video recordings were collected via the Zoom platform and stored in compliance with McGill University guidelines on Microsoft OneDrive. Participant data was anonymized prior to any form of analysis. Residents were given verbal confidentiality reminders and had the opportunity to revoke consent throughout the study period. Residents that completed the measure and participated in both interviews were sent a \$100 gift card to thank them for their time and participation in my thesis study. Funding was provided by my supervisor through an unrestricted grant he received from CMA Joule, a Canadian Medical Association Company.

(AS) was the primary researcher for this study, conducted in fulfillment of the master's degree in Family Medicine. All study participants were aware of this aspect of the study context. My thesis supervisor, Dr. Roland Grad, is a physician-scientist in the Department of Family Medicine at McGill University. Annually since 2021, he delivers a lecture about SDM for preventive healthcare to resident family physicians. My supervisors experience teaching SDM to residents is what enabled me to appreciate the importance of addressing student perspectives in PGME to better inform teaching of SDM. As this was the second year delivering this intervention, I shaped my study to focus on resident physician understanding and perspectives about SDM.

3.2 Phase one quantitative

3.2.1 Participant description

First year FM residents from all nine teaching sites affiliated with the McGill Faculty of Medicine and Health Sciences were emailed invitations to attend the virtual lecture and workshop held during one academic half day in May of 2022.

3.2.2 Educational intervention

My primary supervisor, Dr. Roland Grad, led an academic teaching session on SDM for first year FM residents on May 04, 2022. This session included a lecture that addressed the use of SDM in preventive healthcare followed by a workshop. Other primary care educators and SDM researchers including my co-supervisor, Dr. Samira Abbasgolizadeh-Rahimi, assisted in facilitating the workshop component of this session. The workshop activities included open discussion about the use of SDM techniques in preventive health care and role-playing exercises to help residents familiarize themselves with the SDM process.

3.2.3 The IncorpoRATE measure

IncorpoRATE (Figure 2) is a psychometric assessment tool that seeks measures physician willingness towards using SDM in clinical practice. IncorpoRATE accomplishes this by assessing physicians' perspectives on various domains of SDM use that may present as barriers in practice (Berkowitz et al., 2021; Shrigley et al., 1988). A psychometrically tested measure containing seven items that span six domains, IncorpoRATE was developed using a three-stage procedure. This consisted of a literature review to inform domain and item development, cognitive interviews with practicing US physicians to iteratively refine the measure, and pilot testing across a larger sample of US physicians to explore item and measure performance (Berkowitz et al., 2021). Importantly, to our knowledge, IncorpoRATE has never been tested with resident physicians in FM. Respondents are asked to rate each of the seven items on an 11-point scale that ranges from 0 to 10. Utilizing IncorpoRATE in the context of a workshop and seminar about SDM may assist in further tool validation.

My study used Item 6 and 7 of IncorpoRATE to assess how situational stakes are perceived by and influence resident comfort providing care when faced with patient preferences that differ from their clinical recommendation. Item 6 assess comfort in the context of a low stakes situation while Item 7 assesses comfort in a high stakes situation when physician-patient incongruence exists (Berkowitz et al., 2021). The development of these items occurred during the final round of refinement for IncorpoRATE. As such, the developers of this measure did not perform further cognitive interviews to evaluate the addition of the concept of high and low stakes to the measure (Berkowitz et al., 2021). Clinician understanding and evaluation of these items is needed for further refinement of the IncorpoRATE measure.

Data collection with IncorpoRATE began on May 03, 2022. Residents were emailed a link and prompted to complete IncorpoRATE prior to attending the lecture and workshop. During the lecture component, residents were again prompted by Dr. Grad to complete the measure using their phones or computers prior to participating in the workshop. IncorpoRATE was closed for responses after conclusion of the academic half-day on May 04, 2022. This marked the end of quantitative data collection. IncorpoRATE data was collected through the Lime Survey platform and results were exported for analysis and to inform recruitment for the next study phase.

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For each of the following questions, please drag the slider to the position on the 0-10 scale that best matches how you feel.

1. In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is...

Unnecessary for clinical care 0  Necessary for clinical care 10

2. In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is...

Not welcomed by most patients 0  Welcomed by most patients 10

3. In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is...

A poor use of my time with patients 0  A good use of my time with patients 10

4. In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is...

A skill I do not feel confident using in clinical practice 0  A skill I feel confident using in clinical practice 10

5. In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is...

Not important if there is a strong clinical recommendation 0  Important even if there is a strong clinical recommendation 10

6. In a **low stakes** situation, if a patient who is educated about their treatment options chooses an option that is not aligned with my clinical recommendation, I would feel...

Uncomfortable providing this care 0  Comfortable providing this care 10

7. In a **high stakes** situation, if a patient who is educated about their treatment options chooses an option that is not aligned with my clinical recommendation, I would feel...

Uncomfortable providing this care 0  Comfortable providing this care 10

Figure 2: IncorpoRATE measure of physician willingness to engage in SDM

3.2.4 Quantitative data analysis

JASP 0.16.2 was used to run statistical analysis on IncontroRATE data as I had previous academic and research experience with the software. JASP is also recognized for its easy-to-use interface and has been recommended for academic use (Love et al., 2019; Marsman & Wagenmakers, 2017). The central tendency measures of mean and standard deviation for each item were examined as part of descriptive statistical analysis. This allowed me to obtain a general understanding of resident willingness to engage in SDM across the six domains measured by IncontroRATE (Berkowitz et al., 2021). IncontroRATE was administered to FM residents at McGill in 2021 as part of a similar academic intervention. As such, I also compared my 2022 findings to those collected in 2021 (Grad et al., 2022) to assess if responses varied from the previous year.

3.2.5 Sampling methods for phase two recruitment

A total of 32 residents consented to participate and provided quantitative data using IncontroRATE. Analysis of quantitative data enabled the selection of a purposeful sample of residents for phase two interviews, where I could probe their understanding of high versus low stakes shared decisions as they relate to comfort in the context of patient incongruence. Residents who perceived large disparities between high and low stake situations and whose comfort with patient incongruence varied based on their IncontroRATE answers to items 6 and 7 were recruited. Residents with similar ratings of items 6 and 7 were expected to have similar willingness levels for SDM irrespective of situational stakes, making them poor candidates for further questioning.

Initially, I considered a conservative sampling approach based on score distribution of the mean ratings for these items (Etikan et al., 2016; Teddlie & Yu, 2007). This approach involved selecting

residents with IncoRpoRATE scores that fell more than one standard distribution away from the mean on item 6 or item 7 for phase two. This yielded a total of 13 residents that could be contacted for interviews. A sample of 13 physicians to recruit from and interview would be unlikely to yield sufficient qualitative data to reach saturation and allow for any meaningful conclusions to be drawn (Shenton, 2004; Varpio et al., 2017). This led me to consider a less conservative approach to sampling.

Using extreme case sampling (Etikan et al., 2016), residents with scores that fell on extreme ends of the Likert scale for item 6 or item 7 would be eligible for participation in phase two. With this approach, residents with ratings between (0-2) and (8-10) for item 6 or item 7 were eligible for phase two. This strategy yielded 25 out of 32 eligible residents for interviews. As this strategy provided a larger sample of residents to recruit from and interview, I utilized this approach. A larger number of residents to interview would help reach data saturation during content analysis (Shenton, 2004; Varpio et al., 2017).

Extreme case sampling and other purposeful sampling methods are more defensible compared to convenience sampling (Etikan et al., 2016). As I sought to investigate comfort across high or low stake situations, it was important that I implemented a form of purposeful sampling to interview residents that perceived a disparity between what is meant by low or high stakes to question.

3.3 Phase two qualitative

3.3.1 Participant selection and recruitment

Using the exploratory sequential framework outlined by (Bowen et al., 2017; Creswell & Clark, 2007; Pluye et al., 2018), quantitative results were used to identify a sample of 25 residents that

had differing attitudes based on the stakes of a shared decision. Residents were then sent an email reminding them of their consent to be contacted for interviews. A series of reminder emails were also sent on a bi-weekly basis to encourage participation ([Appendix E](#)).

Additionally, with the help of my supervisor, I was able to contact residents in-person at the Family Medicine Units of St. Mary’s Hospital, CLSC Côte-des-Neiges, and Herzl Family Practice sites in Montreal. I accomplished this by scheduling my visits around resident clinics. Assistance from administrative staff at all three sites enabled me to track which residents were away on rural rotation and who was assigned to each site.

The second interview was a member check to ensure trustworthiness in the data collected from the first interview (Birt et al., 2016). All physicians who participated in the first interview were sent follow up invitations and bi-weekly reminder emails ([Appendix F](#)) asking them to attend a brief follow up interview where they could reflect on and discuss previous answers before I proceeded with further analysis and data integration. Member checks were scheduled approximately 3 months from the primary interview date for participants.

3.3.2 Primary interview guide development and data collection

I sought to gain a deeper understanding of how residents interpret the stakes of a shared decision to be high or low. I also wanted to uncover more information surrounding the factors that can influence a resident’s comfort providing care when confronted with an SDM situation containing incongruent patient wishes. Interviews were designed to have two parts. First, residents were asked to give an example of a shared decision they had made with a patient during their training. This would allow me to gauge their overall understanding about SDM and their SDM related behaviors in practice. This is followed by asking their thoughts about the stakes of the example

they had previously described. By assessing their description of situations as high versus low stakes, I hoped that common themes would emerge that would provide insight about what types of decisions residents perceived as low versus high stakes.

The second half of the primary interview is where residents were questioned about their ratings for item 6 and 7 of IncorpoRATE. For each resident, their rating on a scale of 0 to 10 for each item was shown on screen during the interview. Item 6 assessed their comfort delivering incongruent care in the context of low stake situations while item 7 was contextualized as a high stakes situation. Residents were asked to explain why they rated their comfort a particular number on the Likert scale first for item 6 and then for item 7. This was done in an attempt to understand what factors influence comfort with patient incongruence .

The interview concluded by giving the resident an opportunity to ask general questions about the interview and IncorpoRATE measure. Feedback is a valuable way of refining educational interventions and programming and can also help to highlight any conceptual deficiencies that can be addressed in the future by educators (Wald et al., 2009). This approach had the added benefit of allowing residents to convey their understanding of item 6 and 7, which could validate and inform further item refinement of IncorpoRATE. Participant feedback could also inform physician-educators about what knowledge gaps to address in future training sessions for SDM. The full primary interview guide and flowchart can be found in [Appendix G](#).

3.3.3 Member-check interview guide development and data collection

Member-checking was chosen to uphold reliability and trustworthiness in qualitative data collected. The method of member-checking I chose was interviews with participants where I could verbally reiterate their previous responses to ensure accuracy (Candela, 2019). In this

process, the participant was re-read relevant sections of a research transcript and is invited to comment on the accuracy of the report (Koelsch, 2013). This was chosen as opposed to returning written transcripts for participant review because my population consisted of resident clinicians that had limited time to participate. Sharing transcripts and expecting written feedback from participants was not a feasible expectation for this project.

Benefits of member checking include obtaining richer sets of data and an opportunity to clarify meanings (Birt et al., 2016). To serve as an interview guide for each member check, a summary template to document responses from the primary interview ([Appendix H](#)) was created where I could copy excerpts of responses to individual questions from the first interview. Having a summary of the exact answers in chronological order while conducting the member-check enabled member-checks to be brief, organized, and remain focused on the participant (Busetto et al., 2020; Koelsch, 2013). Prior to each member check, I filled out the summary template with responses from the primary interview and any codes assigned to those responses. This also allowed me to keep track of any new information or meanings that emerged from the data and to bring up any coding conflicts that needed participant clarification. Additionally, I re-read transcripts and re-watched recordings of the first interview to refamiliarize myself with each participant's data prior to each member check (Shenton, 2004).

The purpose of the member check interview was two-fold: residents were given a chance to review their previous answers and make corrections accordingly before synthesis and integration of results. Additionally, reciting coded information back to participants served to verify the coding performed during the content analysis and enhanced the trustworthiness of qualitative results (Shenton, 2004). In instances where the resident changed their response from

the first interview, revised data from the member-check interview would be transcribed and an amendment was added at the end of the original transcript containing updated information from the member-check. Amended transcripts were then re-coded. This method allows for primary transcripts to be modified without the need to completely re-transcribe the entire length of the member check interviews.

3.3.4 Qualitative data analysis

I wanted to understand what constituted low versus high stakes for residents in addition to exploring how their comfort providing care was influenced by patient incongruence. I used qualitative content analysis approach to accomplish this. Content analysis is used to provide rich descriptions of particular settings or phenomena (Hsieh & Shannon, 2005; Mayring, 2014). I also utilized a second qualitative coder to further enhance the validity of this qualitative analysis (Berends & Johnston, 2005; Sweeney et al., 2013). The individual hired part time for my thesis study was a fellow graduate student in the Family Medicine Department at McGill University. Since I had previous experience collaborating with this individual and we had been trained in qualitative methods together, this student was the best fit to be second coder for my project and to ensure some degree of inter-rater reliability (Busetto et al., 2020). In the event that myself and my colleague would disagree on a particular piece of coded data, the member check interview would be used as an opportunity for the participant to provide resolution and clarity (Varpio et al., 2017). If the reflections and insights of the participant did not result in a resolution, Dr. Grad was to be consulted.

To prepare for analyses, I met with my colleague to review the content analysis framework to ensure they were familiar with the objectives of my study and the a priori coding framework

to be implemented. I reviewed each code's definition in detail and provided clarification for any questions raised by my colleague. During content analyses, my colleague and I compared our coding on a weekly basis to ensure uniformity in emerging results. To perform qualitative analysis, NVivo 1.7.1 software was selected because both coders had prior experience using the tool. It should also be noted that NVivo 1.7.1 is a popular and trusted tool used by qualitative researchers, making it a suitable choice for my thesis project (Dhakal, 2022; Edwards-Jones, 2014).

3.3.5 Hybrid qualitative content analysis

Two qualitative approaches were chosen for phase two data analysis: conventional and directed content analyses. My design for the analysis procedure was to first implement a directive approach and perform initial coding and categorization of data using pre-defined codes based on pre-existing theory (Hsieh & Shannon, 2005). This approach was the best fit because I had pre-existing ideas about the phenomenon I wished to study (high or low stakes in SDM and the effect on physician comfort with decisional incongruence. This allows for organization of data into categories which could be analyzed further using conventional methods (Fereday & Muir-Cochrane, 2006).

Next, conventional QCA was applied to assess any patterns that emerged from the coded data from initial directive analysis, constituting a hybrid approach to qualitative content analysis (Fereday & Muir-Cochrane, 2006). This allowed me to explore how decisional stakes influenced physician comfort making shared decisions when decisional incongruence arises with patients. Additionally, inductively coding the data collected with deductive framework allowed me to describe which types of medical decisions residents perceived as high versus low stakes.

The first step to implementing this hybrid approach was to develop the framework for the directive content analysis. I carefully reviewed my research questions, objectives, and all pertinent literature to generate a series of codes to apply to data based on my study objectives. My supervisor was also consulted during framework creation to ensure the codes I created would be appropriate for answering the research questions of interest.

3.3.6 Directive qualitative content analysis framework

I wanted to understand to what extent comfort with patient incongruence in SDM situations was influenced by perceived stakes. I also wanted to define what low or high stakes decisions meant according to residents. Using existing theory and research, I started by identifying key concepts as initial coding categories with respect to my research questions and objectives. Code descriptions were based on literary findings pertaining to making shared decisions. Code terminology was informed by the IncorporATE measure (Berkowitz et al., 2021), as it was the measure used to obtain data.

To enable classification of SDM examples as high or low stakes, the codes of **High Stakes Shared Decision** and **Low Stakes Shared Decision** were created for directive analysis. The codes were also broad enough to allow for further analysis to qualify specific primary care decisions and the characteristics that make them high or low stakes according to residents.

To my knowledge, a definition of low or high stakes is absent from most of the SDM literature. The concept of short-and-long term consequences for patients arising from health outcomes is the closest literary reference to the ‘stakes’ of a shared decision as found within IncorporATE (Elwyn et al., 2016; Elwyn et al., 2022). To compare participant data to literary findings of decisional stakes, the codes of **Short-Term Consequences** and **Long-Term**

Consequences were created to qualify health outcomes after SDM to refine what is meant by a low or high stakes shared decision.

Decisional Regret, **Decisional Relief**, and **Decisional Conflict** were all described psychological phenomena related to physician decision-making (LeBlanc et al., 2009; Légaré et al., 2012; Vo et al., 2022; Whelehan et al., 2021). To establish congruency between literature and study data, these codes were used to examine whether similar phenomena emerged as residents discussed making low versus high stakes shared decisions with patients when an alternative to what the physician was recommending was preferred.

Decreased Comfort with Incongruence and **Increased Comfort with Incongruence** were used to assess resident comfort in SDM situations when patient wishes would misalign with clinical recommendations (Berkowitz et al., 2021). These codes were used to discover to what extent situational stakes influence resident comfort when faced with patient incongruence. These codes were also broad enough for additional conventional content analysis which could uncover specific factors that contribute to a resident comfort when faced with decisional incongruence.

I was curious about resident understanding of SDM competencies after the academic half-day. To create a deductive framework that would allow me to assess the impact of the academic session on resident competency in SDM, I consulted literature and my thesis supervisor. Part of the primary interview involved discussing resident comfort ratings for Item 6 and 7 of IncorporATE. Based on literature, residents who attempted to rationalize rather than explain their ratings of comfort have lower comprehension of the information taught at the academic session (Arai et al., 2019; MacGregor & Stuebs, 2012). Accordingly, the code for **Rationalization** was

created. Residents with the ability to use evidence to explain their attitudes or positions about their comfort across high and low stakes situations are assessed to have higher competence in the topic (Braaten & Windschitl, 2011; Fuchs et al., 1996).

Family doctors must be skilled in providing explanations to patients to achieve the best possible care outcomes when engaging in SDM (Diendéré et al., 2019; F. Légaré et al., 2011; Légaré et al., 2013). Physicians can learn communication skills both through consumption of primary care literature and through their preceptors or attending physicians during graduate medical education and clerkship (Gingerich et al., 2018; Mysore et al., 2009; Olmos-Vega et al., 2018). The latter can colloquially be referred to as experiential explanation (Aronowitz & Lombrozo, 2020), while the former can generally be referred to as a scientific explanation (Trout, 2002). Thus, I explored the ability of residents to use clinical evidence in their responses to my questions and created the corresponding code of **Explanation**.

To qualify the response style used by residents when asked to reveal why they rated their comfort a particular number across low and high stakes situations, I created two codes. **Scientific Explanation** requires physicians to be able to translate and convey clinical evidence pertaining to screening decisions and other complex topics in a way that patients can make informed choices for effective SDM (Vranceanu et al., 2009). For residents that were able to integrate scientific explanation in their responses, I created codes that would allow assessment of the degree to which residents referred to medical evidence to defend their answers. This was accomplished by assessing the degree to which residents could elaborate on the quality of scientific evidence they refer to in their scientific explanations. Physicians with the skill to elaborate when citing evidence in their answers were coded under **Quality of Evidence (Elaborate)**. In contrast, participants that

were only able to make superficial references to evidence were coded using **Quality of Evidence (Non-Elaborate)**. To account for the possibility that some participants may not focus on evidence quality but on the quantity of evidence available for a particular decision, the code **Quantity of Evidence** was created.

Experiential Explanation involves residents relying on past experiences to justify their responses. My study population consists of resident physicians who work under the supervision of attending physicians when treating patients. Residents also interact and work alongside clinical support staff present at the training sites such as nurses and clinical psychologists. Working under a hierarchical structure during clerkship can influence the way residents practice FM (Perrella et al., 2019), which includes medical decision making.

It is important to assess possible tensions between residents and clinical staff and patients (Mysore et al., 2009) in the context of incongruent SDM present in my study results. To account for this, two codes were created. **Incongruence with Supervisors** was integrated into my directive framework to account for events when residents experienced decisional incongruence with their preceptors when engaging a patient in SDM. **Congruency with Supervisors** was used to assess the degree of decisional congruency between residents and preceptors as recounted through the experiences described by residents. A copy of the directive framework codebook can be found in Table 2.

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Code	Description
Long Term Consequences	Future, far off, or difficult to predict consequences a patient could experience when making an incongruent shared decision
Short Term Consequences	Short term, immediate, and clear consequences a patient could experience when making an incongruent shared decision
Decisional Conflict	Physician uncertainty about which course of action to take when choice among competing options involves risk, regret, or challenge to personal life values
Decisional Regret	Distress or remorse after a health care decision felt by the physician
Decisional Relief	A feeling of reassurance following a health care decision; the physician does not ruminate about a decision made with a patient
Decreased Comfort with Incongruence	A decreased comfort with incongruent patient choice when making shared decisions is experienced by the resident
Explanation	A justification for an action, attitude, or belief that draws upon medical evidence or evidence-based practice.
Experiential Explanation	Explanation that consists of anecdotal evidence from past experiences in clinic or recommendations by supervisors, colleagues etc.
Scientific Explanation	An explanation that consists of scientific, clinical, or medical evidence or reasoning
Quality of Evidence (Elaborate)	A specific reference is made to evidence, including elaborations and details regarding evidence quality, findings, limitations, or other pertinent information
Quality of Evidence (Non-Elaborate)	A general reference is made to evidence, however details relating to evidence quality, findings, limitations, or other pertinent information are omitted
Quantity of Evidence	The resident refers to the quantity of evidence regarding a clinical decision
High Stakes Shared Decisions	Any decision classified as high stakes in interviews; decision is time-sensitive, emergent, and may significantly affect patient quality of life and health
Increased Comfort with Incongruence	An increased comfort with incongruent patient choice when making shared decisions is experienced by the resident
Low Stakes Shared Decisions	Any decision classified as low stakes in interviews; decision is not time-sensitive or emergent and is unlikely to significantly affect patient quality of life and health

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Rationalization	The action of trying to explain or justify a behavior or an attitude with logical reasoning, even if those reasons are inappropriate for the specific context being spoken about. No medical evidence is presented.
Incongruence with Supervisors	Could refer to power issues between the resident and the supervisor or support staff when making shared decisions with patients who harbor incongruent perspectives about treatment
Congruency with Supervisors	Refers to harmony between residents and their preceptors or support staff when making shared decisions with patients who harbor incongruent perspectives about treatment

Table 2: Directive content analysis codebook

3.3.7 Directive content analysis coding queries

Query analysis of deductive codes enabled a quantitative analysis of qualitative data in an attempt to empirically validate emergent results (Imran & Yusoff, 2015). Accordingly, I designed three queries as a way to empirically validate the qualitative findings from my study. (Carcary, 2011). The expected output format of these queries can be seen in [Appendix I](#).

The first query was designed to validate patterns with the way high and low stakes decisions are described in terms of consequences. This allowed an investigation of congruency between literary descriptions of decisional stakes and resident descriptions of stakes in my study framed in terms of long and short-term consequences.

The second query was designed to validate the relationship between comfort providing care when facing patient incongruence and decisional stakes. This would also allow me to investigate the congruence or divergence between quantitative data collected and resident explanations of their InCorpoRATE scores.

The third query was designed to explore resident understanding of SDM following participation in the academic session. This query was designed to assess the number of times residents rationalized or explained their ratings for Item 6 and 7 of InCorpoRATE, allowing insight about the impact of the SDM lecture and workshop.

3.3.8 Inductive framework development

Conventional analyses are generally implemented within study designs that aim to describe a phenomenon (Assarroudi et al., 2018; Hsieh & Shannon, 2005). My study objectives were to describe what situations residents classified as being low or high stakes as well as examine to what extent the stakes of a situation influence a physician's comfort with patient incongruence.

The advantage of the conventional approach to content analysis is gaining direct information from study participants without imposing preconceived categories or theoretical perspectives; this type of design is usually appropriate when existing theory or research literature on a phenomenon is limited (Assarroudi et al., 2018; Hsieh & Shannon, 2005). Thus, an inductive and conventional approach was adopted to advance understanding of decisional stakes and comfort when patients do not wish to follow provider recommendations. This approach can also be used to establish what residents thought about Item 6 and 7 of IncorporATE and whether they felt any improvements needed to be made to these item measures.

Part of the conventional analysis framework was formulated by selecting codes from the directive analysis framework and inductively coding them to meet study objectives. **Increased** and **Decreased Comfort with Incongruence** were the directive codes selected to undergo further conventional analysis to uncover what factors may underlie this increase or decrease in comfort. This other framework component also includes inductive coding of resident feedback about IncorporATE items to potentially inform refinement of the measure. Codes generated were analyzed and summarized into larger themes that attempt to answer objectives. A visualization of this framework is shown in Figure 3.

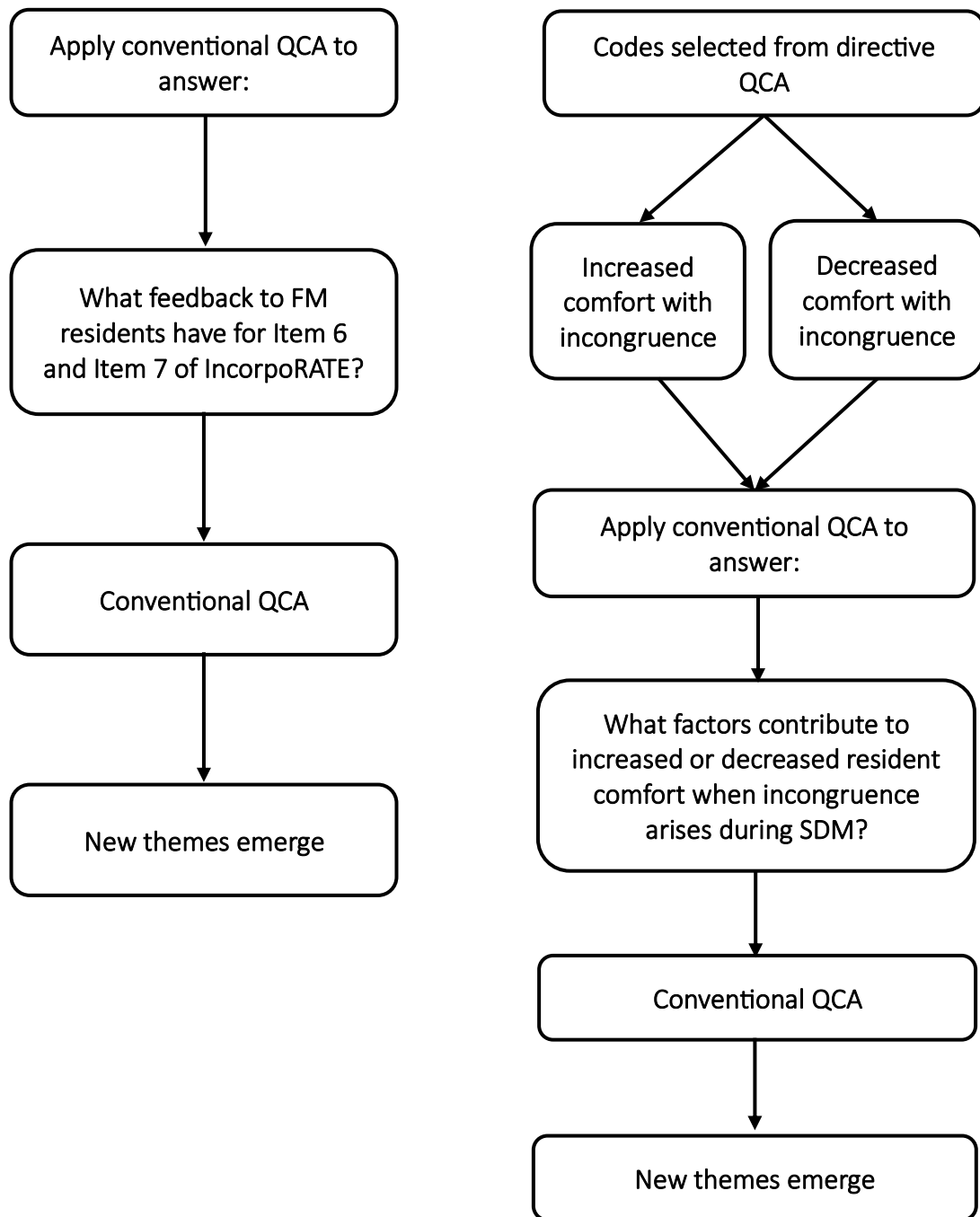


Figure 3: Conventional Content Analysis Framework

CHAPTER FOUR: STUDY RESULTS

My study aimed to answer the following research questions about SDM and the attitudes of FM residents:

- I. To what extent do the stakes of a shared decision influence FM resident comfort in situations where patient preferences are incongruent with a particular clinical recommendation?
- II. What do FM residents consider to be low or high stakes situations for shared decisions in primary care?

4.1 Phase one quantitative results

4.1.1 Recruitment and participation

The Family Medicine Residency Program at McGill University welcomes 100 first-year residents annually. Residents train at one of the nine Family Medicine Teaching Units in Quebec affiliated with the McGill University. Residents from seven of the nine teaching sites attended the academic half-day intervention; those based at the Francophone sites of Vallée de l'Or and Gatineau did not participate. Fifty-four FM residents attended the academic half-day session on May 04, 2022. Of those in attendance, 32 residents completed the IncorporATE measure and agreed to be contacted for phase two interviews (Figure 4).

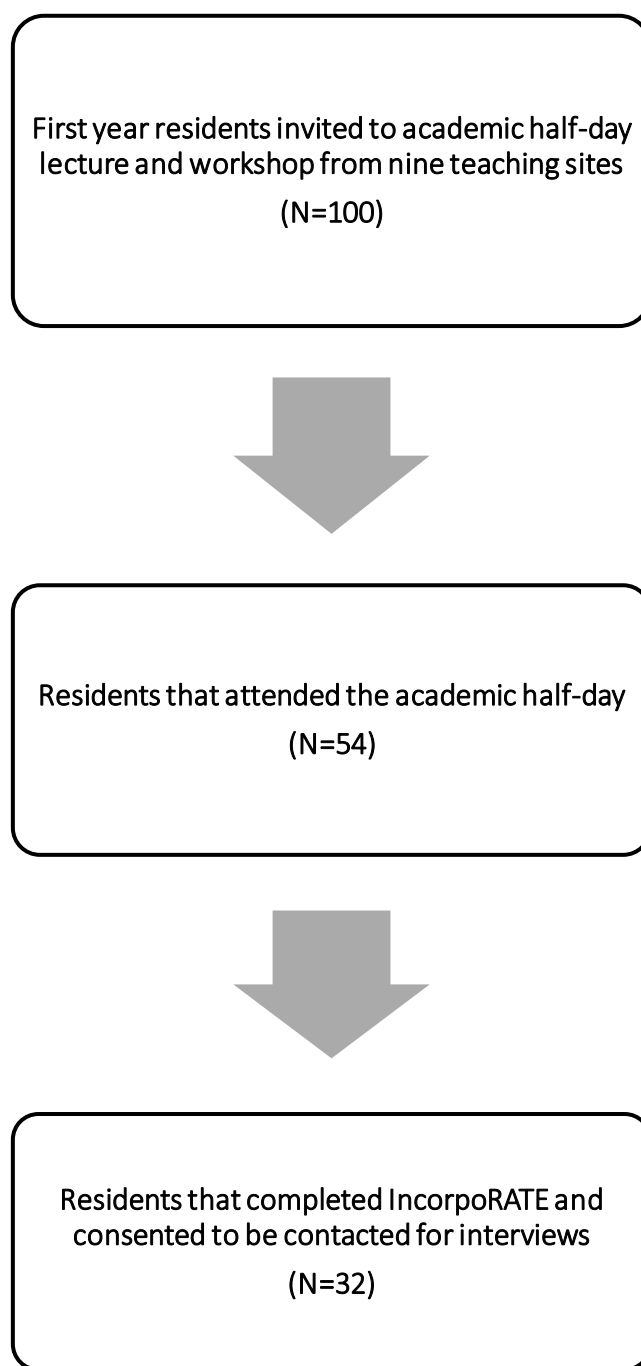


Figure 4: Phase One Participation

4.1.2 IncorpoRATE 2022 descriptive statistics

Residents completed IncorpoRATE just prior to or during the lecture. Digital responses were exported into JASP for descriptive statistical analysis. I wanted to understand to what extent decisional stakes sway a resident physician's willingness to engage in SDM. Residents' comfort with patient incongruence during clinical encounters was assessed using IncorpoRATE Items 6 and 7 to accomplish this (see Table 3 for these items). These items differ in the severity of the stakes involved when physician and patient preferences misalign. Item 6 measures comfort in the context of low stakes while Item 7 measures comfort when situational stakes are high. The mean and standard deviation for each IncorpoRATE item and the measure total are found in Table 3.

FM residents had an overall mean score of 7.32 [1.52] on IncorpoRATE, indicating that, on average, resident physicians were willing to engage in shared decisions. Results are comparable to previous findings where a different cohort of FM residents had a total measure score of 7.39 [0.97] in 2021 (Grad et al., 2022).

Residents expressed higher comfort with incongruent patient choice when decisional stakes were perceived as low (7.59 [2.01]). Residents were less comfortable providing care in situations that were high stakes (4.38 [2.47]). In 2021, Grad et al., 2022 found similar levels of comfort among residents for low stakes (7.41 [1.95]) and high stakes (3.52[2.09]) situations.

IncorpoRATE: Domains and Associated Items (N=32)	Mean Item Score [SD]
<u>Item 1: Necessity in practice</u> <i>In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is . . .</i> • Unnecessary for clinical care (0) • Necessary for clinical care (10)	9.19 [0.99]
<u>Item 2: Patient desirability</u> <i>In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is . . .</i> • Not welcomed by most patients (0) • Welcomed by most patients (10)	7.72 [1.20]
<u>Item 3: Effective resource use</u> <i>In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is . . .</i> • Poor use of my time with patients (0) • Good use of my time with patients (10)	8.31 [1.31]
<u>Item 4: Confidence in skill</u> <i>In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is . . .</i> • A skill I do not feel confident using in clinical practice (0) • A skill I feel confident using in clinical practice (10)	6.69 [1.84]
<u>Item 5: Importance despite clinical preference</u> <i>In my opinion, when more than one reasonable option exists, educating patients about their treatment options, eliciting their preferences, and coming to a collaborative decision is . . .</i> • Not important if there is a strong clinical preference (0) • Important even if there is a strong clinical preference (10)	7.34 [2.46]

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<u>Item 6: Comfort with incongruent patient choice</u> <i>If a well-informed patient in a <u>low</u> stakes situation selects a treatment option that is not aligned with my clinical recommendation, I would feel ...</i> • Uncomfortable providing this care (0) • Comfortable providing this care (10)	7.59 [2.01]
<u>Item 7: Comfort with incongruent patient choice</u> <i>If a well-informed patient in a <u>high</u> stakes situation selects a treatment option that is not aligned with my clinical recommendation, I would feel ...</i> • Uncomfortable providing this care (0) • Comfortable providing this care (10)	4.38 [2.47]
<u>Total Mean Score</u>	7.32 [1.52]

Table 3: IncorpoRATE results 2022

4.1.3 Extreme case sampling of items 6 and 7 of IncorpoRATE

Extreme case sampling was used to identify residents with scores of (0-2) or (8-10) for item 6 or item 7, as these scores represent the extreme ends of the 11-point IncorpoRATE rating scale. Twenty-five residents out of 32 were eligible to be interviewed based on their IncorpoRATE ratings for Items 6 and 7, which seek to assess physician comfort for SDM in a high stakes or low stakes situations when patient and provider preferences misalign. These 25 physicians were purposefully recruited in subsequent study phases for qualitative data collection.

4.2 Phase two qualitative results

4.2.1 Recruitment and participation

During phase two recruitment, one resident dropped out of the study. Another resident was on maternity leave which decreased my recruitment pool to N=23. Of these 23, 16 residents provided both quantitative and qualitative data for analysis (Figure 8). Thus, recruitment was challenging for my study's qualitative component.

Using the sample of 25 residents that demonstrated extreme variation in their responses to Items 6 and 7 of IncorpoRATE, I used multiple strategies to solicit participation: recruitment emails, in-person visits to their Family Medicine Unit, and hand-written invitations. 16 residents participated and completed the primary interview. At the time of interviews, residents had progressed to the second year of training. All residents that participated in the first interview opted to participate in the member-check.

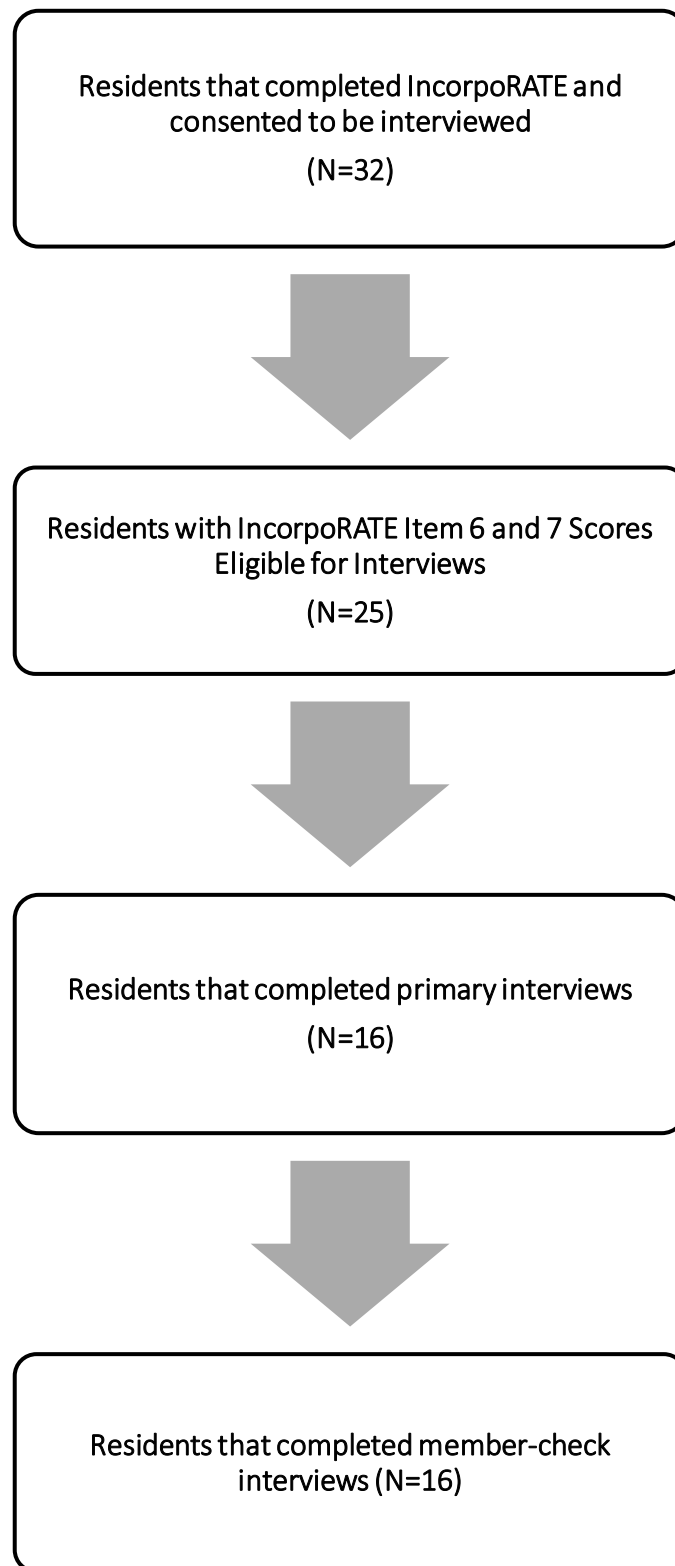


Figure 5: Phase Two Participation

Member-checking was conducted prior to final analysis using a second round of semi-structured interviews. These interviews focused on confirmation, modification, and verification of primary interview answers prior to final data analysis (Birt et al., 2016). There were 9 participants that made amendments whereby they elaborated on or clarified their initial answers after hearing their initial answers read back to them verbatim. There was only 1 instance of a participant that had completely changed their answer from first interview to the member-check. Three residents expressed that while their understanding of stakes and patient incongruence is the same, their comfort ratings would be different if they completed IncorporATE now as compared to their ratings from May 2022. Final transcripts generated from both interviews were then analyzed using directive and conventional methods of content analysis (Assarroudi et al., 2018; Kibiswa, 2019; Mayring, 2014).

4.2.2 Directive content analysis results

The purpose of directive QCA was to employ a framework to capture what FM residents describe as high stakes compared to low stakes situations for SDM. Residents' ability to explain versus rationalize in their interview answers was also assessed using this framework to provide feedback about the effects of the half-day session. Tensions between residents and staff were also explored through directive QCA to see if literary findings were supported (Mysore et al., 2009).

Resident understanding of the types of clinical encounters that can fall under high or low stakes was varied. Tables 4 and 5 present a summary of resident descriptions of low and high stakes shared decisions, respectively. Additionally, two residents stated they could not distinguish between decisional stakes; they considered all shared decisions high stakes, because, with respect to the lives of their patients, all choices were perceived as high stakes.

“Everything is pretty important to me...I feel everything is high stakes, because it’s really the health of people that are at stake.” –Participant 02

“If my patient is concerned about something, it’s relevant for them, it becomes high stakes.” –Participant 04

Further scrutiny of participant examples showed much variation whereby some shared decisions were characterized as high stakes by some and low stakes by others when patient and provider opinions diverged. This was the case for scenarios that involved patient preferences for screening for prostate cancer using the PSA test (Participant 4 and Participant 11) and decisions related to contraception (Participant 14). Concurrently, some decisions were characterized exclusively as high or low stakes by different residents. For example, mammography screening for breast cancer was consistently categorized as low stakes (Participant 01, Participant 09,

Participant 10). In contrast, examples where patients refused further investigations for symptoms suggestive of potential or recurrent cancer were considered high stakes by residents (Participant 01, Participant 07, Participant 15).

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Participant #	Low Stakes in Family Medicine Residency	Decision
01	<i>"We do mammograms every two years. I don't know the statistics right now, but usually I use the thousand patient example that we have online visually that I share with [patients] and I tell them it is every two years and the procedure per say is minimally invasive. Your only real risk is that as soon as they find a lump we must go for extra procedures. We can do unnecessary biopsies, but we can also detect early cancers. The mammogram specifically is low stakes, because studies haven't been that clear about how much more we save lives with them"</i>	Mammography screening for breast cancer
	<i>"A low stake, I would say more like a ten-year risk thing like cholesterol when we start a statin, we look at the ten-year risk of cardiovascular disease. So, say that, at the beginning, they don't want to take their medication. I'm not happy about it but it's not the end of the world, so it's low stakes, they're not going to die from it."</i>	Declining statin treatment
03	<i>"I think in [low stakes], I probably thought of something where the treatment I recommended, maybe it was for a rash, maybe I had given the patient another option that was not as good and, in that case, I would be comfortable providing either option."</i>	Treating a rash and there is equipoise between treatment options
05	<i>"I had a few patients in their fifties... they had Framingham risk profiles that were borderline. They could have benefited from a statin, technically. There is a recommendation from some people to start a statin. I explained to them their risk and they looked at it and they were like no, I don't want the statin. I think in those situations I'm perfectly comfortable saying no problem let's keep an eye on your lipid levels."</i>	Delaying statin treatment for middle-aged patients who are not at elevated risk for CVD
06	<i>"I have an elderly patient that is eighty and on long standing anticoagulants. She would like to be on it at this point for her own reasons but there is no scientific or evidence-based reason for it. We got [a recommendation] back from the cardiologist to stop it...I told her if you feel more comfortable being on it and there are no contraindications then we could do it. That was our shared decision, she doesn't necessarily need to be on it but felt more comfortable with it. Usually, an elderly person being on anticoagulants would be riskier,</i>	Very elderly patient staying on anticoagulants

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	<i>but she is very healthy. I think in that sense it is low risk for her."</i>	
	<i>"For me, low stakes are delaying statin treatment because you want to try a lifestyle change like diet and exercise. That's low stakes because realistically if the patient chooses that way there is room for improvement and there is a possibility they improve, that's fine."</i>	Delaying statin treatment in favor of lifestyle changes
07	<i>"I had a [patient] in his thirties and he was explaining that he really wants a colonoscopy for cancer screening, because [there is family history] of colon cancer. We went through his risk and how based on guidelines he wouldn't satisfy any criteria for colonoscopy. But he still preferred to have the colonoscopy done. He requested it and, in the meantime, it was making sure he understood what the risks were of a colonoscopy and what his current risks of colon cancer are. Sure, he has family members, but not direct family members. Putting all that together and coming to that shared decision that given all that, for him, it was still the decision to do the colonoscopy. We did go ahead and request it although he's basically going to be last priority."</i>	Young patient wants a screening colonoscopy
	<i>"When it's something that is low stakes, when someone just wants an X-ray or even sometimes a blood test, and I don't think it [is] necessary."</i>	Administering X-Ray or bloodwork but physician doesn't think it is necessary
08	<i>"There was one patient in his fifties and a smoker. With his Framingham risk score, he ended up needing a statin and was on the fence about it because [he was not] somebody who [took] medications and [didn't] want to because [he is] young. Even with statins there isn't good evidence...there is the number needed to treat which is quite high. Even after I shared some information with him, he [did not] want to take it. I also feel like a resident you don't feel one-hundred percent confident with the data as well. I didn't really push it even though I had shared as much of the evidence-based knowledge that I had. Obviously, I feel like I am going against the convention because I feel like the statin was indicated but at the same time, I must respect the patient's decision. I think going into R2, if it's well documented that the patient is not interested in a statin and if they understand the risks... whether I start it now or a year from now, it doesn't really change [anything] which is</i>	Delaying statin treatment for a male in his fifties who is a smoker

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	<i>why I didn't really push it with him. I have a follow up with him and I'm not too worried about him not having [a statin] in the meantime."</i>	
	<i>"If a patient is prediabetic and wants to do diet and lifestyle counselling and we've agreed on a plan to follow up in three to six months, even if I know they are going to end up in the diabetic range most likely, I'm still more comfortable withholding [medical treatment] because it's going to end up building a therapeutic relationship with the patient."</i>	Lifestyle changes for a pre-diabetic patient before initiating medical treatment
09	<i>"The most recent [shared decision] was an elderly lady who was above the age of recommended screening for breast cancer. Our guidelines only go to a certain point, so we had that discussion and we looked at her personal risk of breast cancer. We discussed what her feelings about it were, the pros and cons of getting the mammogram itself, and in the end, she decided she wanted it, so we went forward with it. From my point of view, I think low stakes because she had been having screening regularly throughout her life as recommended... there wasn't any pressure on either of us because from my point-of-view she was past the recommended guidelines [for screening] anyway."</i>	Mammography screening for breast cancer in an elderly patient
10	<i>"But for cancer screening, she was getting very anxious about the risks and had friends who had gone through complications of the screening itself. So, she didn't really want to opt for that and given that studies didn't show great research for that [screening mammogram], she would rather just not do it. That was an excellent conversation that we had, and she decided not to do it."</i>	Declining a screening mammogram
11	<i>"Recently I had a patient that came in asking about the prostate specific antigen (PSA) test. We discussed the screening guidelines, what his motivations were, why he wanted the PSA done, and what his understanding of the PSA was. After discussion, he decided not to undergo the PSA, but I would have been open to do the PSA if he understood the risks and benefits of the procedure."</i>	Prostate-specific antigen screening
14	<i>"I had a patient [who] was not using contraception. So, I proceeded for shared decision-making. I asked her what she understood about contraception just to have a baseline of her knowledge. She uses the pills but inconsistently and once her pills ran out, she never</i>	Shared decision related to using contraception

	<i>renewed the pills. When I discussed other options with her, she mentioned a few of them but she had a misunderstanding about some of them. So, I tried to include the patient on how contraception works and taught her about different categories...at the end we reached an agreement. For me, the issues that she brought [up] like having difficulty conceiving in the long run [were not] evidence based. Contraception itself has its own risk factors and complications but not with the method she used."</i>	
15	<i>"Not doing a pap test, for example... in that case I would consider it as low stakes. I can always work on prevention, there is the Gardasil vaccination. We can always come back to the decision later."</i>	Postponing a pap test
16	<i>"I have one case in mind. It was a lady who had gestational diabetes in her three previous pregnancies, and we did screen a few years later and she was a bit borderline for treatment and was still trying to get pregnant. At this point she had lots of symptoms of polycystic ovarian syndrome (PCOS): very irregular menses and having [conceiving]. We had a long discussion about the pros and cons of medication, about why metformin would be indicated to help with conception and possibly PCOS and to help treat her pre-diabetes versus using lifestyle changes and seeing how that goes and referring her to a fertility clinic. in the end, she decided to start the metformin because she wanted to get pregnant, more than to treat the diabetes, I would say. I would say [this is] low stakes because metformin is very well tolerated, and she didn't have catastrophic numbers of anything that was putting her life at risk. I think it could have a positive impact in the long run, but if she had decided to start it later, I don't think it would have had much of an impact right away on her health."</i>	Starting metformin in a patient with suspected PCOS who is having difficulty to conceive

Table 4: Examples of low stakes shared decisions

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Participant #	High Stakes in Family Medicine Residency	Decision
01	<i>"If we see that the baby's heart is not doing that well, and the patient is pushing we either tell them we can use a vacuum or forceps. But then either it might not work, it might hurt the baby, or we could just go for a C-section. Because for us in the end it doesn't change much in terms of statistics, but a patient might rather get the forceps and maybe tear more but at least won't be in convalescence for two weeks after a C-section. Whereas other people do not want to be that traumatized [and] go for a C-section."</i>	Type of Intervention to Assist a Delivery
	<i>"One of the common things we do is screen for diabetes. We do it every three years, and we have blood tests...let's say [the patient] is a bit obese. I'll [as if] we should check for diabetes, and they say no... I feel that that would be a high-risk patient, and if they get diabetes, the first symptoms that they might get is a coma and sometimes they don't recover, and they might die. So that's high stakes and it's very easy to find out if you have diabetes or not."</i>	Obese Patient Refusing Diabetes Screening
	<i>"High stakes for me are, if we don't do it, the consequences might be dangerous for the patient, or we do more medical procedures in the future. For example, if we have a stage one cancer, we can just remove it versus a stage three or four, we must do chemotherapy, which is more invasive. And where the evidence is high...because if the evidence is low, then we can't really say [the situation] is as high stakes."</i>	Refusing Cancer Screening
02	<i>"I can think of this example. [The patient is] very motivated to make changes in her life. She has osteoporosis confirmed on a bone density test and it's getting worse every time she comes. But we always make our recommendation, give her all her options, and in the end she she's still very reluctant to take the medication. She does her own research and knows the risks and the benefits. ... [It is] a high-stake situation; osteoporosis can be very dangerous."</i>	Elderly Patient Refuses Preventive Medication

	<i>“Even antibiotics. I think for me it’s high stakes, it develops resistance, and it can be a lifelong problem if this patient is always too keen to receive antibiotics each time.</i>	Antibiotic Prescription for Sinusitis
03	<i>“We had this patient who had a rash that we weren’t sure if it was shingles. It was in an area, that if it was shingles it may affect vision if we do not treat it. I spoke to the patient about the benefits and the risks of treating it versus not treating it even though we were not certain [it was shingles]. We explained that this was the medication to treat it and going to get an optometry consultation was benign and probably wouldn’t cause any side effects, and we could also give a different form of treatment in case it was impetigo, a different kind of rash. In the end, the patient agreed with us and opted to take both treatments and agreed to go see the optometrist when we discussed it, answered their questions, and explained our recommendations. I think it would be potentially high stakes if it was shingles...then we could have potentially saved their vision. So, in that way it is high stakes.”</i>	Antiviral Treatment for Suspected Herpes Zoster Ophthalmicus
04	<i>“Another one has been prostate cancer screening...there is a graph that I use... a pictorial representation and numbers needed to treat, what we’re aiming for, why do we do the screening for prostate cancer, what we’re hoping to achieve and what the studies show. I find it helpful for people to put it in context and then we basically decide together what is best for their management.”</i>	Prostate Cancer Screening
	<i>“Getting an appropriate form of birth control, for somebody it must be high stakes. Considering pain, and if they want to regulate their periods, or if they don’t want to have kids, that’s high stakes for them in the context of their lives.”</i>	Contraceptive Options
	<i>“In clinic I had a ninety-something year old [that] came to see me after being hospitalized for a hip fracture. During hospitalization they had put him</i>	

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05	<i>back on a bunch of medications including diabetes medication [and] a statin. They wanted me to do a bone density test this year and next year. Basically, I brought him in to clarify everything. Turns out, explaining the risks and benefits for him, considering his prognosis and values, we decided it didn't make any sense to continue his diabetes medicine, have him on or start a statin at this age, and bone scans don't make sense at his age either. So, we didn't do any of those things. That was shared decision making on three different things. I think it's high stakes. The guy was ninety-something, anything at that age is high stakes- taking a pill, the side effects, him having a hip fracture and moving to go get tests is something that has its risks. I think overall it is high stakes."</i>	In the very elderly, 1. Statins for primary prevention of CVD and 2. Bone mineral density testing to prevent fragility fracture
07	<i>"The first one that comes to mind is a patient of mine who has refused a lot of investigations, and this is in the context of a guy who's had cancer in the past. A lot of the symptoms he was describing, abdominal pain, blood in the urine... symptoms that he knows were related to the cancer last time. He knows that likely means the cancer is back, but he doesn't want investigations. The two things that make it high stakes for this guy is the actual clinical scenario, the fact that his cancer might be back and together with his age [65 y/o] and the possibility of good outcomes for longer [if he investigates]."</i>	A cancer patient decides to avoid testing for cancer recurrence
08	<i>"I can think of one patient I've had this year; she's refusing treatment for hypertension and she's refusing treatment for diabetes, and she has a lot of malaise. This is a high stakes situation because I'm trying to mitigate her risk for stroke and myocardial infarction (MI) and end stage renal failure. I'm not sure what her level of education is, and I often question her education and understanding about these issues."</i>	A female (age unknown) refuses treatment for hypertension or diabetes.
	<i>"A patient who I'm following for fertility issues. She is thirty-five and she really wants to get pregnant, but</i>	

	<i>she doesn't want to seek any fertility counselling and she wants a more spontaneous approach. For her I recommended seeing a fertility specialist or even starting some basic blood work. Anyways, I saw her yesterday and I don't know if this is a good approach, but I told her more from my perspective that I don't want her to come to me in five years and say: "Why didn't you push for me to go at that time?" And I told her that. And if she's okay with this decision now then I'm happy to do it, which is do nothing right now."</i>	A 35 y/o female refuses medical intervention for infertility.
	<i>"The ones I always think about are always the people who have known coronary artery disease who come into my clinic with chest pain, who have a cardiologist but I know I'm not going to have them see the cardiologist soon, and they seem to be presenting more of an atypical chest pain, these are the ones I always stress about when they come to me because its more high stakes getting them to go to the ER for a workup versus prescribing them nitro spray to take at home. I think unstable angina has a spectrum of presentations and it's so varied. This is an example of high stakes where I will push a lot versus something else like a suspected lung cancer where I might just do a closer follow up in two weeks via telemedicine whereas somebody with atypical chest pain, I'll spend more time with them at that visit and encourage them to go to the ER."</i>	When and where to investigate outpatients with chest pain
10	<i>"I'm thinking of another patient who had osteoporosis, I asked her [if she would] be willing to start a bisphosphonate. We discussed the pros and cons of that therapy and ultimately came to the decision that she would try the medication. We had originally started her on calcium and vitamin D... and we would see how she would react and then finally I [told her] it's getting a little bit worse based on her bone mass density (BMD), maybe it would be the time to start, and she agreed. She took one dose, and within a couple of days developed severe bony pain</i>	Refusal of second line drug treatment to prevent fragility fracture

	<i>that was most likely related to her one dose of bisphosphonate, and this was a few weeks ago. I had a follow up with her recently, she started it about six weeks ago, and she's now still having those intense bony pains. Obviously, we've stopped the bisphosphate, and now at this point, there could be an indication to try either another medication by mouth or start her on Prolia, which would both be indicated as she might not necessarily have the bony pains with those. But now after speaking with her she is obviously very hesitant to want to treat her osteoporosis. Obviously, there are a lot of other factors involved, like the side effects... we don't know to what extent she is going to have [them] with other medication. Regardless, after speaking with her, she now categorically refused and that is understandable. I took maybe a little bit more time to tell her that the fracture risk was a little bit higher, she is a smoker...there are other risk factors. She still decided no, which is ultimately her decision."</i>	
13	<i>"He'd had a pulmonary embolism and was on the ward. He asked if he could go out for a few hours to have a walk. He was very bipolar and mentally ill, I talked to him for a while about it and we came to a compromised position: [he] should one-hundred percent come back because things could go very wrong, and we need to treat you but also, I don't want to end up having to call guys to strap you down to the bed. I don't think that's a fair compromise either because then you're going to hate us, and you're never going to come back. So how about you go for a walk, come back in about an hour, don't delay and if you feel badly come back immediately. I thought that was a fair compromise where he understood very well what my concern was, so we built some rapport and some trust."</i>	Deciding whether to let an unstable mentally ill patient walk off the hospital ward
	<i>"It was my first time seeing him and, on his chart, I could see that there was a mass in the bladder</i>	

15	<i>suspicious for malignancy. There were other residents that talked with him about further investigations. All the time he just said he did not want to hear anything about it. It was to the point where he stopped coming to the appointments because he was tired of hearing about it. When I saw him, one of my goals was to talk to him about that because I wanted to make sure he had all the information before being able to make some sort of decision. I talked with him about what was his goals for care were, what he understood about the mass, and the reason why he kept declining further investigations. It was a long discussion, and, in his case, he understood what the mass was, and it was mostly a decision of he was an old man, and he did not want to end up in bed. So, the decision that we made together was instead of pushing him to risk more investigations, it would be comfort care. I also told him that it's not a permanent decision so if he ever changes ideas he can always come back. I would say high stakes...there is a mass. I don't know if it has spread anywhere else. It could be malignant, compromise the life quality of the patient and [result in] death. So, I think it is a high-stake one, which is why for me it [was] harder...it would have been easier to send [him to] a urology consultation."</i>	Decision to not do further investigation for suspected bladder cancer in an elderly male
16	<i>"I had a patient; she was twenty something weeks pregnant and had a non-viable baby that had a lot of malformations and wasn't going to survive. She was uncomfortable terminating her pregnancy at the time, so she was transferred back to her community and wanted to make the decision with her family, so we had to see her twice a week just to see if the baby was still alive. The more we waited, the more stakes there were because if you have an intrauterine fetal death and you leave it there it's not very good for your health. I'm not sure what happened in the end, she was still pregnant when I left."</i>	Decision about when to terminate a non-viable pregnancy

Table 5: Examples of High Stakes Shared Decisions

Most residents engaged in rationalization when defending their scores for item 6 and 7 of IncorporATE. Residents that were able to integrate scientific explanation in their answers were predominantly coded as being unable to elaborate on the quality of evidence surrounding a particular decision. This involved making general references to what medical evidence stated about certain decisions when explaining their increased or decreased comfort level when a patient chooses not to follow a resident’s recommendation. Broad classifications of quality of evidence pertaining to a decision was the most common way residents spoke when using scientific explanation.

“If the patient wants a PSA screening and the evidence is weak, but they are adamant about it... that is fine, there is more chance that I will go with it.”—Participant 11

“But in some other situations, when you say everything, it makes sense, it’s minimally invasive, and it’s very important and then we have clear studies that show the benefits, and they still refuse... I’m uncomfortable because I know that there’s a high chance that something bad might happen in the future and I kind of anticipate that.” —Participant 01

Only one participant was able to elaborate on the quality of evidence surrounding a clinical decision (mammography screening for breast cancer) in their response.

“From what I remember, the evidence behind the two-year mammography to detect breast cancer early is not that good. From what I remember you need to do a mammogram on thousands of women before you can save a life. I also think part of the gray zone to me was also the fact that in the older population, it’s not studied at all. The guidelines stop, from what I understood, the recommendation for older patients is not there from what I

understood, and this might be completely wrong, there is less evidence for older age groups so they can't really suggest a guideline regarding [mammography].”—Participant 09

Two residents also referred to the quantity of evidence as influencing their perception of the stakes of a decision when a patient wishes to go against clinical recommendation. Generally, perceptions that there was a lot of evidence in favor for a decision were associated with a perception of higher stakes and less comfort with a patient's incongruence. For decisions with ambiguous and limited evidence, participants appeared more comfortable with letting a patient choose something unaligned with clinical preference.

“Also [situations] where the evidence is high...because if the evidence is low, then we can't really say it is as a high-stake situation”—Participant 01

“I would say more of a low-stakes decision, again sort of what we said before: there isn't a lot of great evidence going for that decision so given that, letting the patient choose seems fair to me.”—Participant 10

As resident physicians work under supervision, it was also important to account for the influence of preceptors on resident comfort when managing incongruent patient wishes. Prior literature defined tensions that resident physicians can experience due to the hierarchical nature of medical residency (Mysore et al., 2009). Two examples described by residents emerged which demonstrated tension or incongruence between resident physicians and their supervisors. These examples are shown in Table 6.

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Participant #	Incongruence with Supervisor	Congruence with Supervisor
02		<i>"I mean I'm a resident, and I guess it's also a bit supervisor dependent sometimes: whether we respect the choices of the patient more versus strongly recommending and pushing a medication when it's clearly indicated. In [my patient's] case, it was very clearly indicated [medication to treat osteoporosis] ... my supervisor that day was very understanding of [the patient refusing medication], we increased her calcium. Basically, we're trying to help her in respect to her own beliefs, and knowing that she's an intelligent woman, and she's able to also undergo the risks and she is understanding of them."</i>
05	<i>"A trend that's been happening for a while [is] we are moving away from the paternalistic approach to medicine. I think it is important to ask those questions [about comfort with incongruence] because I still see every day some of my staff who still have that paternalistic approach. Even when I bring up shared decision-making my staff are like no. They disagree with that even when I'm very comfortable with letting patients go after having a good conversation with them."</i>	
13	<i>"When I told my attending [I let the patient leave the ward temporarily] he was like that is a terrible decision you need to get him back here right now. I personally disagree but I understand that it is [the supervisor's] rules and as the supervisor [they] have the final responsibility here. So, I think that's what I'm talking about in terms of discomfort, it's not necessarily a discomfort born of my personal convictions but of the situation."</i>	

Table 6: Tension between resident physicians and supervisors when engaging in SDM

4.2.3 Changes in resident IncorpoRATE scores

Several residents expressed that they would change their IncorpoRATE rating from what they had originally put when I followed up with them. This parallels the findings of Grad et al., 2022, where items 6 and 7 had score variation across T1 and T2. There were three instances during member-check interviews where participants explicitly stated that their response to 6 or 7 would not be the same as it was in May 2022.

“I changed my opinion on that recently a little bit...Yeah, maybe a six [for high stakes].”–

Participant 01

Yeah, maybe my answer is changing... I would be less okay with it [lower than a 7 out of 10]

if the stakes were high enough.”–Participant 02

“Listening back to what you said about what I had said before, I would push [my comfort]

more to a ten from before [for low stakes].”–Participant 09

Two participants demonstrated an increased comfort with providing care even if a patient makes an incongruent decision during second round of interviews. This was mentioned in the context of low stakes (item 6) and high stakes (item 7). Only one resident expressed a decreased comfort providing incongruent care to a patient if the situation was high stakes.

4.2.4: Resident reflections on item 6 and 7 of IncorpoRATE

Each interview concluded by asking residents their overall thoughts about the two items of IncorpoRATE they were interviewed about. These items have not yet been validated with physician populations (Berkowitz et al., 2021). Overall, using conventional QCA, I was able to code the feedback provided by residents into three themes.

Theme (1): Variability in stakes is unclear

The most common feedback provided by residents was uncertainty over what was meant by high stakes or low stakes in the questions. Many residents noted that what is considered high or low stakes may vary across physicians. As such, they felt the questions were subjective and that a variety of factors could influence their perception of a situation as high or low stakes. A few residents suggested providing concrete definitions of high versus low stakes to reduce the question's subjectivity.

"I don't know what the cut-off for high or low [stakes] is."—Participant 07

I don't know if you had a specific definition of high and low stakes but maybe incorporating that...so it remains more [or less] the same for everyone."—Participant 09

"I think the only thing that can be a bit difficult is the definition of high stake and low stake, it can vary depending on your stress level, your comfort level, and where you are at in your training."—Participant 11

Theme (2): Examples may help clarify high versus low stakes

Most residents also felt that adding an example of what is meant by a high or low stakes situation may help them to better understand what the question is asking. Building off the idea that stakes can vary physician to physician, residents felt that including specific examples of high and low stakes situations involving incongruence between doctors and patients may help them understand what the question is asking more clearly.

"I guess it comes back to what you mean by stakes. I was going to say you could provide an example [of high and low stakes]."—Participant 04

“Yeah, I would put [an example] under high stakes an example and then it would be more self-explanatory.”—Participant 14

“I don’t remember if there were any examples of what high-stake or low stakes in the questionnaire are, but I think it could be great to add that too.”—Participant 15

Theme (3): Define what is meant by comfort

Two residents brought up the ambiguity around the use of the word comfort. Residents felt that comfort was a very subjective measure that could mean different things for different residents and found issue with the comfort scale used to measure responses to 6 and 7.

“And then asking about comfort level, again, very subjective about what part makes someone comfortable?”—Participant 05

“The scale itself, uncomfortable versus comfortable I guess maybe that could be clarified. Comfortable in the sense of ‘I agree with providing this care or I am OK with providing this care’ or comfortable in the sense of ‘I can do this interview and I can do this shared decision making easily’... like I’m comfortable doing that. I guess that is the only thing in terms of the questions [themselves].”—Participant 07

4.2.5: Conventional content analysis results

Through conventional QCA, a series of reasons mentioned by residents that could potentially sway their enthusiasm for SDM emerged when patients held opposing preferences to what is suggested by their physician. Although not directly referring to the stakes of a situation, this analysis sought to deepen understanding of what influences residents’ comfort to shift when faced with an incongruent patient decision. Figure 9 displays a summary of the themes generated

from examples provided by residents about what decreased or increased their comfort when patient and provider do not see eye-to-eye during SDM.

Decreased comfort when faced with decisional incongruence from patients

Four themes were linked with decreased comfort for SDM: (1) cases where residents questioned patient health literacy, (2) encounters that involved proxy-decision makers, (3) concerns about administrative and legal costs, and (4) decisions associated with imminent harm if the physician's recommendation is overlooked were associated with a decrease in resident comfort to provide care when faced with patient incongruence.

Theme (1): Poor patient health literacy

The most common reason for physicians hesitating to include patients when preferences misalign was attributed to the patient being misinformed or uneducated regarding the consequences of their decision. Residents reported decisional regret and decisional conflict in their responses when asked to elaborate on this idea. Residents experience heightened discomfort describing situations where patients had knowledge deficits in clinical encounters where stakes were perceived as high. Concerns centered around adverse outcomes that patients may face if they deviate from their clinician's recommendation. As a result, residents experienced self-doubt related to their duty as primary care providers to educate and guide those under their care to make sound decisions about their health.

“And if they don't go in the same sense as me [for a decision] ...sometimes I doubt myself and think, did I explain it properly? Did I really do a good job? Is the patient understanding? Maybe there's a language barrier? Did I do the best that I can? So, I'm a bit uncomfortable because I'm thinking did the patient really understand or not? in the end, usually I take my

time, and I do the best that I can but I'm wondering could I have done something better or if the patient really understood and they disagreed for some reason." –Participant 01

"I would do what is possible [within] my own resources to inform them. But there are certain limitations to where we can go, language barriers that we encounter daily, and education levels of medical literacy. It's not always easy to communicate everything that needs to be communicated." –Participant 02

"I think in society we value autonomy a whole lot and I agree with that, it's just the fact that when there is a high stakes situation that arises, it is high stakes so you need to be much more careful about how well educated the person is and how much they understand because if they don't understand something properly they are not making an informed decision, and because of the high stakes they could be in a situation that they don't want to be in or they didn't initially account for." –Participant 05

"When it's low stakes, you always feel more comfortable because the consequences are less obvious. So, if the patient understands the risks and the benefits and the stakes are low, one hundred percent I wouldn't mind if the patient is not aligned with the clinical recommendations." –Participant 16

Theme (2): Proxy decision makers

Encounters including surrogate decision makers (for pediatric or cognitively impaired patients) also suggested uncertainty to involve patients in the decision-making process. Problems communicating appeared in clinical scenarios that necessitated proxy decision making because of concerns related to the cognitive state of the patient. Other clinicians spoke about comfort

when patients chose alternative routes, but this comfort did not extend to scenarios involving vulnerable populations.

“I have another patient, another case; she has some cognitive difficulties, and she has so many comorbidities. She’s a smoker, forty pack-years, still smoking...and I feel very bad for her because in her case I don’t feel we have good communication and it’s like she’s just not interested in her health.”—Participant 02

“If [the patient goes] against what is recommended, most of the time I do not lose sleep over [their decision] if they truly understand. Again, with a caveat that they are not a vulnerable population, kids, demented patients...you know, like these are special populations.”—Participant 05

“I’m trying to mitigate her risk for stroke and myocardial infarction (MI) and end stage renal failure. I’m not sure what her level of education is, and I often question her education and understanding about these issues to the point where I even asked the nurse to do a MoCa (Montreal Cognitive Assessment) for her. I’m like is there a cognitive impairment? This has been going on for about a year now since I’ve known her.” —Participant 08

“Just given the rapport I built with him and if he didn’t [return to the ward], that’s still a function of his priorities and his decision for himself, which is still a bit complicated by the fact that he’s mentally ill and with his mental illness is he still competent enough to make those decisions?”—Participant 13

Theme (3): Legal concerns and administrative costs

The bureaucratic, administrative, and legal ramifications for physicians to entertain conflicting preferences was also linked to decreased comfort with SDM. Clinicians spoke with

concern about their supervisor’s response to how the situation was handled and whether legal consequences would result. Documenting incongruence in electronic medical records (EMRs) was a strategy used to mitigate any legal risk when a patient chose to disregard what the clinician recommended. The cost to system for investigations was also present when physicians spoke of their comfort for SDM. FM residents also spoke to general attitudes of their work environment and colleagues toward SDM, which may further discourage them to engage in SDM when faced with patient incongruence.

“Every day I see staff who still have that paternalistic approach and even when I bring up shared decision-making my staff are like no, they disagree with that even when I’m very comfortable with letting patients go after having a good conversation with them.”– Participant 05

“The more that I progress through residency, the more I realize that if I document it properly, I’m not medically liable for this person and I think I’d rather spend my time helping with something else.” –Participant 08

“I guess it also works if the patient wants a PSA screening and the evidence is weak, but they are adamant about it... that is fine, there is more chance that I will go with it unless there is also the cost. Unless it is not indicated, PSA is a gray area, but if I have somebody that is well, they are healthy and twenty years old and they want a CRP or whatever I am probably not going to order it just because it is not relevant and it is not cost responsible.” –Participant 11

“That leads to a little bit of discomfort and there is also a legal component to it too. If somebody doesn’t follow my advice and decides to leave against my advice and something

goes wrong there are possibly legal consequences to that or even bureaucratic, administrative consequences...what will my supervisors say? Am I going to get sued over this? I think there is a conflict between ethics in terms of human decision making and consequences that are more legal or administrative.”–Participant 13

Theme (4): Life-threatening or imminent harm in outcomes

Finally, the probability of harm that patients could face if they deviate from their physician’s recommendation also decreased comfort with engaging patients in SDM for clinicians. Situations that could harm the patient or have a negative effect on their quality of life were among the most common. Resident physicians experienced increased discomfort. According to some residents, this discomfort was present irrespective of stakes.

“If it’s something that’ll affect them long term, I’d still say we go with shared decision making in those situations but would generally be stronger in our recommendations, I guess.”–Participant 03

“When it’s an option that is not aligned with my clinical recommendation it obviously has a lot more impact because it’s a high stakes situation, so, if I think one way, whether that’s to investigate or to treat something or the opposite, and they think otherwise then that can really swing the balance... that’s a really big difference in outcomes.”–Participant 07

“Even if it’s not necessarily in line with my treatment plan if there could be some serious consequences to the patient regardless of whether they are making an educated decision, if it would save a life, I would be less comfortable.” –Participant 10

“If I believe I’m giving you the best recommendations with very serious consequences and the person doesn’t want to do it, I think it’s okay... It’s on [the patient] but I don’t feel as comfortable about it.”—Participant 12

Increased comfort when faced with decisional incongruence from patients

Three themes emerged that linked to an increased comfort in the context of incongruent patient-provider perspectives during SDM: (1) patients with strong health literacy skills, (2) decisions where no imminent harm was present if the patient decided against the treatment option recommended by their physician, and (3) encounters where a therapeutic alliance existed between patient and care provider demonstrated an increase in resident comfort with the process of SDM.

Theme (1): High patient health literacy

When knowledgeable patients expressed discord, FM residents did not mind delivering incongruent care. If residents perceived a patient as fully informed about both harms and benefits of declining suggested care, they were more open to SDM with the patient. This finding was consistent when residents discussed low and high-stake clinical encounters.

“If they’re very well educated about their treatment options then I’m even more comfortable that they are really following what they want and are in line with their own values and beliefs.”—Participant 02

“If there is a high stakes situation and [the patient] fully understands and they are not aligned with my clinical recommendation, then I feel like they have a good understanding. I am still comfortable with letting them do this decision and following their course of action, that is okay.”—Participant 05

“But if the patient decides to choose the option and is comfortable about his decision and had an informed decision, he understands the consequences well about either option of taking the medication or not taking the medication. If the patient chooses against my clinical recommendation, I will feel comfortable in one condition: if the patient is well informed. Even if it is a high stake [situation].”–Participant 14

“I am very patient-oriented. If they understand what they are doing and the risks of doing something [versus] not, I can support my patients either way.”–Participant 16

Theme (2): Non-life threatening and distant outcomes

Outcomes not seen as time-sensitive or harmful had increased likeliness for FM residents to oblige patient wishes even if residents may not make that decision themselves. Consequences perceived as less imminent made some residents more comfortable accommodating the patient when decisional conflicts arose. Chances to re-visit the decision with the patient also permitted residents to feel more comfortable about the patient rejecting their suggestions. Examples where residents felt okay withholding their preferred treatment if the patient was in favor of alternatives because the issue could always be re-discussed and there no threat to patients’ health existed in the meantime.

“I wasn’t too bothered because I felt she really understood the risk of not accepting the [osteoporosis] medication.”–Participant 02

“If what is at stake is not horrible, basically there are no big side effects or no death involved and the patient understands clearly what they are doing, it is their decision to be made. The idea is not to force my beliefs, it is about doing it together.” –Participant 12

“I mean, it is low stakes. The stakes being the minimal concern that these patients often have for that level of their health, something that is a long-term chronic issue, that they don’t see any immediate results for and its low stakes for me too because I know it’s not immediately dangerous in any way.”—Participant 13

“The way I see it is that I always have time to come back to it [if it is not high stakes]. Let’s say during one appointment the patient declines, it is something I can discuss in future appoints so we can revisit it. Which is why I feel more comfortable if they do decline it. For me, it’s not something they are going to say no to forever and at the same time it does not necessarily compromise their wellbeing.”—Participant 15

Theme (3): Therapeutic alliance

Residents mentioned a goal to establish and maintain a therapeutic alliance with patients when asked comfort making incongruent shared decisions. Residents viewed complying with patient requests in low stake encounters as beneficial for maintain alliance and increasing patient trust. To them, compromising for lower stakes decisions improves the relationship so when stakes are higher, patients are inclined to trust and follow direction. The length of the physician-patient relationship also contributed to this alliance, with comfort increasing with incongruence as residents progress through their training and see the same patients more frequently.

“When it’s something that is low stakes... [and] I don’t think it might be necessary, it will not be aligned with my clinical recommendation...the answer I am getting to here is about providing an alliance with the patient, providing trust. We might not agree on this little thing here but in the future that trust will allow me to say no, this is a higher stakes situation. I

would be a lot more direct and be able to guide and maybe they'd trust me more at the time because we'd have that alliance from the low-stake situation.”–Participant 07

“I feel like this year I've learned a lot. I give the patients and then they trust me so that I can get something that I want later with them. I found that has really worked and I feel like as long as I have that longitudinal aspect with the patient, I do make it a point to tell them we are going to follow up in three months for this issue and I'm keeping it on the agenda for the next visit but that I'm not going to give a treatment option in the meantime.”–Participant 08

“What is good is that I'm in my second year of residency now, so I've been seeing my patients quite a few times already and I'm starting to know them. I also know what they like and what their goals are. When I talk to them about the risks and cons at the same time, I incorporate their lifestyle and what they wish for the future...and they do understand it more.”–Participant 15

1

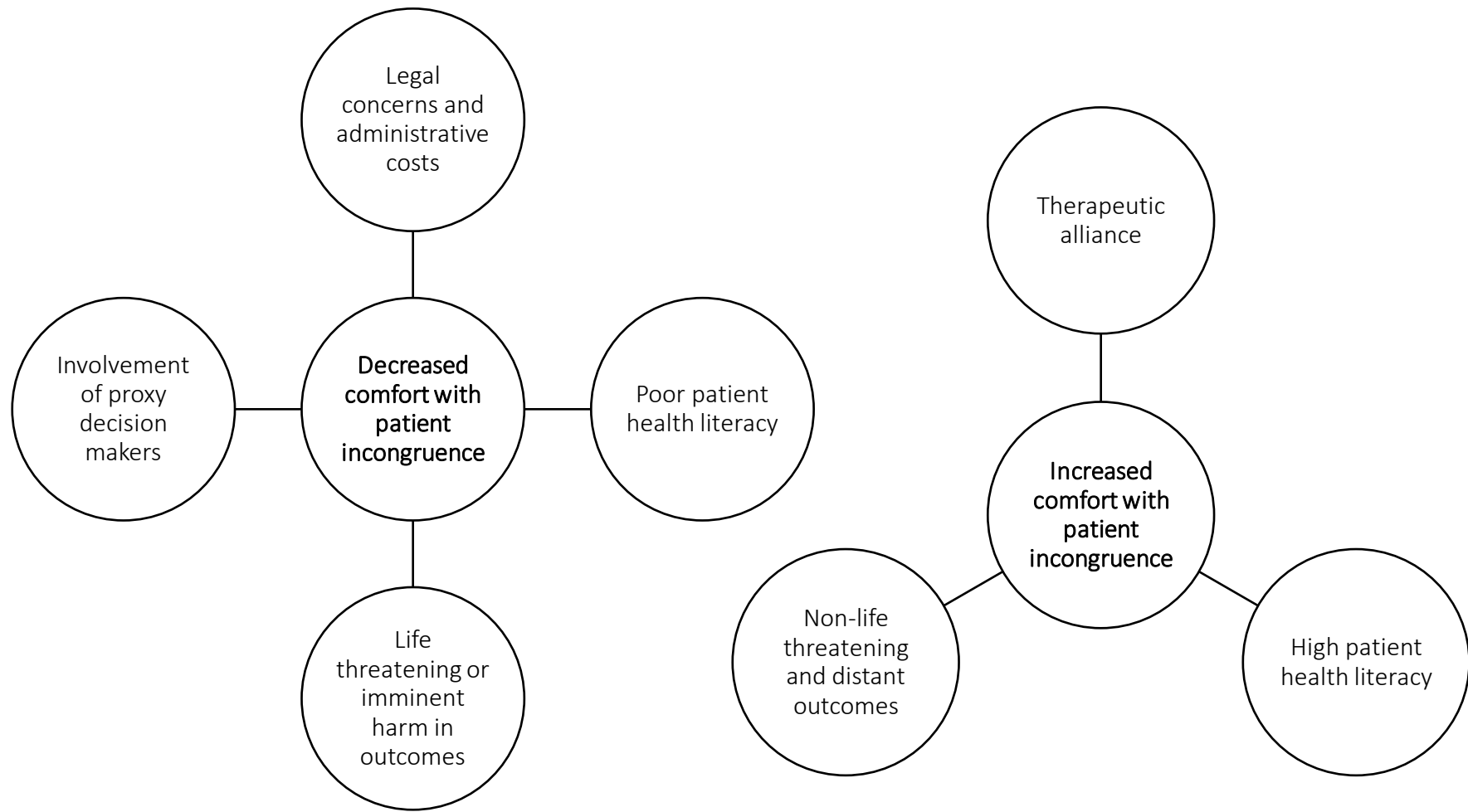


Figure 6: Themes arising from conventional content analysis

4.2.6 Query analysis of descriptive content framework

I used coding queries to further analyze directive QCA findings. These queries work by counting the number of instances a piece of text has been coded using a specific code or codes. This provided a quantitative value of how many times different text pieces across all resident transcripts got coded with the selected codes of my choice. Query analysis was also used to validate findings from the conventional content analysis, which explored the factors that can increase or decrease comfort with incongruence. The number of specific examples coded are organized using 2x2 contingency tables. Examples of text coded with each combination of codes are also provided. Query results can be seen in Tables 7-12.

Analysis 1: Consequences of Incongruence and decisional stakes

To elaborate on the way FM residents differentiated high and low stakes, I created a query using codes about short- and long-term consequences and situational stakes. This permitted a count of times residents spoke about the consequences of high and low stake shared decisions when the patient preferences misalign with physician recommendation. Generally, long (8) and short-term (7) consequences were spoken about more often when residents described high stake encounters. Less counts of long-term consequences (3) were present for low stakes situations as well. Overall, total counts of consequences that were mentioned in the context of discussing high stakes were higher in number (15) compared to low stakes (8).

PATIENT-PROVIDER INCONGRUENCE DURING SHARED DECISION MAKING

	A: High Stakes	B: Low Stakes
1: Long Term Consequences	8	3
2: Short Term Consequences	7	5

Table 7: Consequences and decisional stakes query results

	A: High stakes	B: Low stakes
1: Long Term Consequences	<i>“High stakes for me are, if we don't do it, the consequences might be dangerous for the patient, or we do more medical procedures in the future.” - Participant 01</i>	<i>“For me, low stakes are I don't know...delaying statin treatment because you want to try lifestyle change diet and exercise. That's low stakes because realistically if the patient chooses that way there is room for improvement and there is a possibility they improve, that's fine” -Participant 06</i>
2: Short Term Consequences	<i>“Because that is what can define a higher stake, if bad things can happen more rapidly rather than just building morbidity over time.” -Participant 02</i>	<i>“I would say low stakes, because metformin is very well tolerated, and she didn't have catastrophic numbers of anything that was putting her life at risk. So, more low stakes... I don't think it would have had much of an impact right away on her health.”- Participant 16</i>

Table 8: Consequences and decisional stakes query examples

Analysis 2: Comfort with incongruent decisions and stakes

To explore the association between the stakes of a shared decision and resident comfort with incongruent patient choice, I ran a query to see how many times residents spoke of increased or decreased comfort when a situation was high or low stakes. Decreased comfort was coded more heavily in context of high stakes (8 counts) than low stakes (5 counts). Increased comfort with incongruence was associated more with low stakes than high stakes (14 counts versus 1 count). Residents spoke about lower stake situations with increased comfort when faced with decisional conflict from patients. Only one example of increased comfort with patient incongruence was observed for high stakes situations where the patient's preferences were unaligned with those of their clinician.

PATIENT–PROVIDER INCONGRUENCE DURING SHARED DECISION MAKING

	A: High Stakes	B: Low Stakes
1: Decreased Comfort with Incongruence	8	5
2: Increased Comfort with Incongruence	1	14

Table 9: Comfort with incongruence and decisional stakes query results

	A: High stakes	B: Low stakes
1: Decreased Comfort with incongruence	<i>“If I gave an elderly patient an anticoagulant and they want it but they are high risk for falls or they are very unsteady and they are known to forget things so they could double their medication, things like that... that would be high risk, and high stakes in that sense. That would make me feel very uncomfortable...that almost would not necessarily be shared decision making...it would be hard to make you feel like you can make a shared decision at that point because you are putting them so far at risk.”</i> –Participant 06	<i>“The discomfort came because we as doctors are biased by the evidence. We want our patients to follow what our recommendations are and when they go against it, even if it is low stakes, we will be less comfortable and we shouldn’t be, but that’s our nature, we’re here to advocate for patient health and provide the patient with the maximum benefits from our care.”</i> –Participant 14
2: Increased Comfort with incongruence	<i>Regardless, after speaking with her, she now categorically refused and that is understandable. I took maybe a little bit more time to tell her that the fracture risk was a little bit higher, she is a smoker...there are other risk factors that make not treating her osteoporosis, regardless, it might have some negative impacts. She still decided no, which is ultimately her decision, but I just needed to make those other side effects clearer seeing as she had the indication to have that treated. – Participant 10</i>	<i>I think the low stakes one is where their life/limb/overall state of health isn’t at risk so in that case if they chose something that is a bit different from the recommendation, it doesn’t really matter in the grand scheme of things. If they want to go with something more aligned with convenience or their values and how they live their life in general, then they might as well just go with that.</i> –Participant 03

Table 10: Comfort with incongruence and decisional stakes query examples

Analysis 3: How FM residents communicate comfort

How residents conveyed their understanding about low and high stakes were split into two code categories: explanation and rationalization. To see which justification style the resident chose to describe their comfort with incongruence when making shared decisions, I created a coding query. Generally, residents relied on rationalizations more than explanations when discussing their comfort in the context of stakes and incongruence. This was the case when residents expressed increased or decreased comfort with patient incongruence.

Twice as many counts of decreased comfort and rationalization (20) existed compared to explanation (10). For those with an increased comfort with incongruence, there were more counts of rationalization (14) versus explanation (6). It should also be noted that more explanations were given for decreased comfort (10) than increased comfort (6) with patient incongruence. Although comfort was rationalized more than explained, it should be noted that more explanations were observed in the context of explaining decreased comfort with incongruence (10) versus an increased comfort (6).

PATIENT–PROVIDER INCONGRUENCE DURING SHARED DECISION MAKING

	A: Decreased Comfort with Incongruence	B: Increased Comfort with Incongruence
1: Explanation	10	6
2: Rationalization	20	14

Table 11: Resident Understanding and Comfort with Incongruence

	A: Decreased Comfort with Incongruence	B: Increased Comfort with Incongruence
1: Explanation	<i>“And this would be higher stakes because they are going against a recommendation that I would believe firmly in based on evidence that we currently have...If we do have evidence that shows that a particular therapy would be beneficial then I would be worried that they would not be benefitting from that.” –Participant 10</i>	<i>“Whereas if it is something that doesn’t really matter...the evidence is weak, I feel more comfortable being like, “Okay, well, if you ever want to bring it up again...but it is not as pressing if they are refusing treatment.” –Participant 11</i>
2: Rationalization	<i>“I mean I feel comfortable [keeping my elderly patient] on anticoagulants. She made that decision and she felt empowered to do it but on the other hand if she strays from evidence, it gets a little concerning... you get worried that you’re doing something not perfect. I’m not uncomfortable in the sense that I wouldn’t do it but talking about providing this care at hundred percent would be negating the evidence.” – Participant 06</i>	<i>When it’s low stakes, you always feel more comfortable because the consequences are less obvious, I guess. So, if the patient understands the risks and the benefits and the stakes are low, one hundred percent I wouldn’t mind if the patient is not aligned with the clinical recommendations.” –Participant 16</i>

Table 12: Resident understanding and comfort with incongruence query examples

4.3 Data integration and research question answers

4.3.1 To what extent do decisional stakes influence FM resident comfort with shared decision-making?

Phase one IncorporATE scores show that residents are more comfortable engaging in the context of incongruent patient choice when they perceive situational stakes as low. On average, residents' comfort in low stakes (7.59 [2.01]) was higher than contexts where stakes are high (4.38 [2.47]). This finding is corroborated by qualitative query analysis of FM resident interview data; residents spoke about decreased comfort in the context of high stakes (8) more often than they did low stakes (5). More references to increased comfort were found when residents discussed low stake shared decisions (14) compared to decisions perceived to be high stakes (1).

4.3.2 What do FM residents consider as low and high stakes shared decisions in primary care?

Interviews revealed residents consider a wide variety of primary care decisions as low or high stakes. Generally, high stakes decisions were described as when a patient's neglect of physician advice could have prolonged or life-threatening complications to their health. Long-term consequences were discussed in the context of high stakes shared decisions. Low stakes decisions were considered to have more transient consequences when patients decide to deviate from clinical recommendations.

Some decisions in primary care were inconsistently perceived as high and low stakes by different residents; PSA screening was high stakes according to some FM residents but low stakes when described by others. Residents described other investigations exclusively as low stakes; mammography screening for breast cancer is as an example. Encounters where patients refused investigations or treatment, in contrast, were consistently labeled high stakes. When asked about

stakes in relation to SDM, two residents stated they were unable to distinguish between high and low stakes. Furthermore, FM residents rely heavily on rationalization than modes of explanation when discussing their comfort with decision incongruence. More resident responses were coded as rationalizations compared to explanations. Only one participant was able to elaborate on the quality of evidence in their answer. Three participants provided examples of how supervisors can influence comfort making incongruent decisions with patients. Two of these examples demonstrated incongruence between resident and staff perspectives when it comes to letting patients make incongruent decisions. One example demonstrated congruency between resident and supervisor when approaching a treatment decision with a patient.

In summary, these findings reveal a varied understanding of and comfort with high and low stakes amongst FM residents, assessed when explored in the context of unaligned patient and physician preferences. These findings have further implications for teaching SDM in PGME. This is one of the issues I will address in the following chapter.

CHAPTER 5: DISCUSSION

5.1 Principal findings

The objectives of my study were to understand what residents in Family Medicine consider high versus low stakes shared decisions and how perceived stakes influences their comfort providing care when patient preference misalign with clinical recommendation. First, I assessed comfort with SDM when patients and providers held misaligned preferences for how to proceed with clinical care using the 7-item IncorporATE measure. Next, I interviewed residents to better understand what they perceived to be high stakes versus low stakes situations when their patients' preferences differed from their own to assess how this influenced their comfort for SDM.

5.1.1 Comfort with incongruence and decisional stakes

Overall, FM residents expressed lower comfort with incongruent patient choice when decisional stakes were perceived as high. Residents were more comfortable with a patient choosing an option not aligned with their clinical recommendation when they perceived situational stakes to be low. These findings are like those of Grad and colleagues, where comfort amongst residents for low stakes situations was greater than for high stakes situations when patients demonstrated incongruent preferences and values regarding care (Grad et al., 2022).

5.1.2 What are high and low stakes in shared decision-making according to FM residents

Certain shared decisions were consistently regarded as either high or low stakes across different participants. Mammography for breast cancer screening was one example of a shared decision classified as lower stakes should a patient display diverging opinions regarding the procedure. When asked to elaborate on why a mammogram was a low stakes situation, only one resident was able to clearly draw from clinical evidence in their response to mention the limited benefit

of breast cancer screening through mammography (Salameh et al., 2023). No resident was able to discuss the concepts of overdiagnosis or false positives in their answers when asked to elaborate on why they perceived mammography as low stakes. False positives and overdiagnosis are important concepts that resident physicians must understand, as they can have unintended or even catastrophic consequences for patients (Baker & Prorok, 2021; Pickles et al., 2022). Information about overdiagnosis in different contexts (high versus low stakes) is also needed to inform SDM and minimize the harms of screening interventions (Thériault et al., 2023). As such, it is important that these concepts be integrated into SDM education for FM residents.

In contrast, examples where patients refused further investigations for symptoms suggestive of potential or recurrent cancer were considered high stakes by participating residents. Residents generally felt conflicted about supporting a patient’s decision to refuse investigation for a potential or recurrent cancer, with many noting that refusing an investigation is a decision that they would not make themselves. FM residents must be able to comfortably accept when their patient makes a choice they may not make for themselves, as this is an important aspect of SDM (Mackwood et al., 2023), even if the situation involves a potential or recurrent cancer (Williams et al., 2020).

Other shared decisions had varying classifications according to the residents. Prostate cancer screening using PSA and contraception related decisions were examples of shared decisions that were considered either high or low stakes depending on the resident. From an educator’s perspective, my findings have implications for instruction on the need to prioritize when SDM is most important in a clinical encounter. There is a need to address the lingering definitional and measurement limitations that remain unaddressed for SDM (Blumenthal-Barby

et al., 2019), particularly, what is the definition of a higher stakes situation to engage a patient in a shared decision compared to a lower stakes situation? Residents were more comfortable providing incongruent care when they perceive a situation as lower stakes and appear comfortable in accepting a patient’s preference, even when it may not necessarily align with their own. SDM may not be priority for lower stakes shared decisions, as residents perceive their patients to be less at risk for adverse consequences if they deviate from their clinical recommendation.

On average, residents are less comfortable when patients express incongruence when making decisions related to investigation of symptoms since they perceive this situation as ‘higher stakes’ for the patient. If patients hold incongruent preferences for mammography screening for breast cancer however, residents may feel more comfortable with incongruence because they perceive the stakes of the situation to be low if a patient ultimately decides on a course of action they would not ultimately recommend themselves. The following difference may account for the variability in comfort: There is a difference between screening for a disease versus investigating symptomatic patients. The former is done in patients with no symptoms, while the probability of missing a disease is much higher in the latter situation, with associated consequences for the patient. Accordingly, residents may feel less comfortable when a symptomatic patient’s preferences misalign with their own about undergoing a diagnostic test or procedure.

One scenario where residents expressed increased comfort with incongruence was in caring for patients who were perceived to have high health literacy skills. Health literacy is a prerequisite for SDM and is a key aspect for physicians to determine the information they need to proceed with care (Abbasgholizadeh Rahimi et al., 2021). This finding aligns with others: that

more literate patients are often able to play a more active role in their healthcare, leading to better outcomes (McCaffery et al., 2010). Situations where physicians did not perceive any imminent consequences were also described as situations where residents would be more comfortable if a patient expresses a difference in preference, as residents felt that it would strengthen the therapeutic alliance. In contrast, caring for patients with proxy decision makers and situations where financial costs were high saw residents express decreased comfort with patient incongruence.

Furthermore, patients perceived to have low literacy skills also reduced comfort in residents if the patient had a misaligned preference. Patients with lower levels of health literacy may be less likely to understand the consequences of their decision, evoking discomfort in their care provider in times of incongruence (Durand et al., 2014). Poor health literacy also influence physicians' capacity to communicate effectively and engage in SDM with patients; physicians must be aware of and able to accommodate varying levels of health literacy (Abbasgholizadeh Rahimi et al., 2021). Concern about life threatening or imminent harm to a patient was also a reason for decreased comfort with patient incongruence. This concern may be amplified in contexts where patients are perceived to have weaker literacy skills, as discussed previously (Durand et al., 2014), increasing a physician's discomfort if a patient expresses an incongruent opinion or preference.

5.1.3 Discussion of principal findings

Substantial variability exists in resident perceptions of high versus low stakes. It is important to note that individual perception of stakes, or risk, can vary based on personal factors. This can be exemplified by Prospect Theory (Kahneman & Tversky, 1979). Prospect theory is a psychological account that describes how people make decisions under conditions of uncertainty. These may

involve decisions about nearly anything where the outcome of the decision is somewhat risky or uncertain, for example, providing screening procedures for patients when not indicated (Khan et al., 2022; Schwartz et al., 2008). Prospect theory predicts that people simplify uncertain decisions into gains and losses, after which they weigh the inherent overall value and weight. Typically, the option with the highest combined value is selected (Kahneman & Tversky, 1979).

SDM requires physicians to be more than just medical experts, as they must also guide patient choice based on individual preferences and values (Mackwood et al., 2023). Applying prospect theory to decisional stakes in family medicine may be able to assist researchers in differentiating between high and low stakes situations for SDM. According to Prospect Theory, when the situation is high stakes, the physician perceives the patient will experience potential losses (or harms) to a greater extent than any gains (or benefits).

Applying Prospect Theory to SDM in medical education may help to better understand why residents are more or less willing to engage in SDM with incongruent patients depending on if they perceive situational stakes to be high or low (Khan et al., 2022; Schwartz et al., 2008). Incorporating Prospect Theory into SDM education may also help to teach resident clinicians to consider the possibilities of overdiagnosis and false positives when deliberating with patients about certain screening procedures by balancing possible harms and benefit for individual patients (Baker & Prorok, 2021; Thériault et al., 2023)

Furthermore, incorporating tenants of Prospect Theory when teaching residents may assist them better explain why they feel discomfort when a patient deviates from their recommendation during SDM. Considering the many instances of rationalization observed during query analysis, framing SDM using Prospect Theory may be able to assist residents to mitigate

situations where decisional incongruence arises. Residents may feel compelled to grant patient requests for varying reasons that include avoiding confrontation to preserve an atmosphere of trust and goodwill in the doctor-patient relationship or time constraints when trying to explain the balance of harms and benefits in preventive healthcare (Brett & McCullough, 2012).

More work is needed to discover how individual physicians perceive risk and how that subsequently influences their comfort with patient incongruence when making a shared decision. In fact, (Verma et al., 2014) argue that physicians could benefit from learning behavioral economics such as Prospect Theory to assist in the joint decision-making process with their patients.

5.2 Study strengths

There are a few strengths of this work. IncorpoRATE creators were consulted throughout the study process, particularly when developing the coding framework. Creating the framework with input from the developers of IncorpoRATE allowed us to create codes that would encompass the true meaning of what the authors of IncorpoRATE were trying to assess through items 6 and 7. Data triangulation and member-checking strategies were implemented to ensure validity of collected data.

5.3 Study limitations

Several limitations exist in the context of my thesis study. Having a relatively small number of completed IncorpoRATE questionnaires was a limitation (N=34), as statistical inferences could not be made. Most residents I contacted based on their IncorpoRATE scores did not reply to invitations to participate, making it difficult to recruit for phase two interviews. Such difficulties are inherent to educational research in Medicine, which requires the voluntary participation of

physicians. Additionally, due to time constraints, the primary interview guide was not piloted and refined with feedback from the target population. However, the interview guide was piloted through two mock interviews with my supervisor prior to study initiation.

5.4 Implications for researchers and educators

5.4.1 Implications for educators

Item 5 of IncoRpoRATE had a mean rating of 7.34 [2.46]. This finding reveals that residents believe that SDM is important even when there is a strong clinical recommendation in place. However, shared decisions are not necessary in the presence of a strong clinical recommendation (Mackwood et al., 2023). Based on these findings, there may be room to improve how residents understand SDM and how this understanding translates into clinical practice. It is important for clinical educators to clarify when SDM is suitable, as it appears most residents misunderstand how the strength of clinical recommendations influence when SDM is an appropriate process to pursue with a patient.

5.4.2 Implications for researchers

Based on the findings of this study, what residents consider low versus high stakes for SDM is highly variable. Accordingly, more research should be done to address the definitional limitations of ‘stakes’ in SDM literature. Additionally, many participants suggested examples or definitions to improve items 6 and 7 of IncoRpoRATE, suggesting these items are complex and difficult to understand. For now, it would seem preferable to refine the IncoRpoRATE measure into a five-item measure until items 6 and 7 are reworked.

5.5 Unanswered questions and future research

The definition of what constitutes a high or low stakes situation for SDM varies based on individual resident perceptions. Further work is needed to address this limitation in the use of the IncorporATE measure. How aspiring family doctors perceive risk in the context of high versus low stakes decisions and how this perception influences their comfort with patient incongruence when making medical decisions is important to develop further in research.

5.6 Conclusion

What FM residents perceive to be low versus high stakes situations for engaging an incongruent patient is highly varied. Residents are generally more comfortable with decisional incongruence when they perceive the stakes to be low and consequences as minimal when a patient deviates from their provider’s recommendation. Patients are increasingly willing to challenge physicians’ intellectual authority (Timmermans, 2020). Furthermore, online sources of clinical information may empower patients to make decisions that misalign with those of their care provider (Benetoli et al., 2018).

In one respect, growing patient autonomy, and engagement in decision-making should be welcomed by residents, as it provides opportunity for both parties to collaborate to advance patients’ best interests. However, residents are also taught to uphold professional integrity, ensuring patients do not pursue unnecessary or even harmful interventions (Brett & McCullough, 2012). It is important to understand resident physician comfort when the interests of non-maleficence and patient autonomy are competing. Understanding resident comfort when patients hold conflicting decisional preferences is important to advance the integration of SDM into medical education. Inevitably, much work is to be done regarding resident physicians’

willingness to engage in SDM when patients hold incongruent preferences for choosing tests or treatments in primary care.

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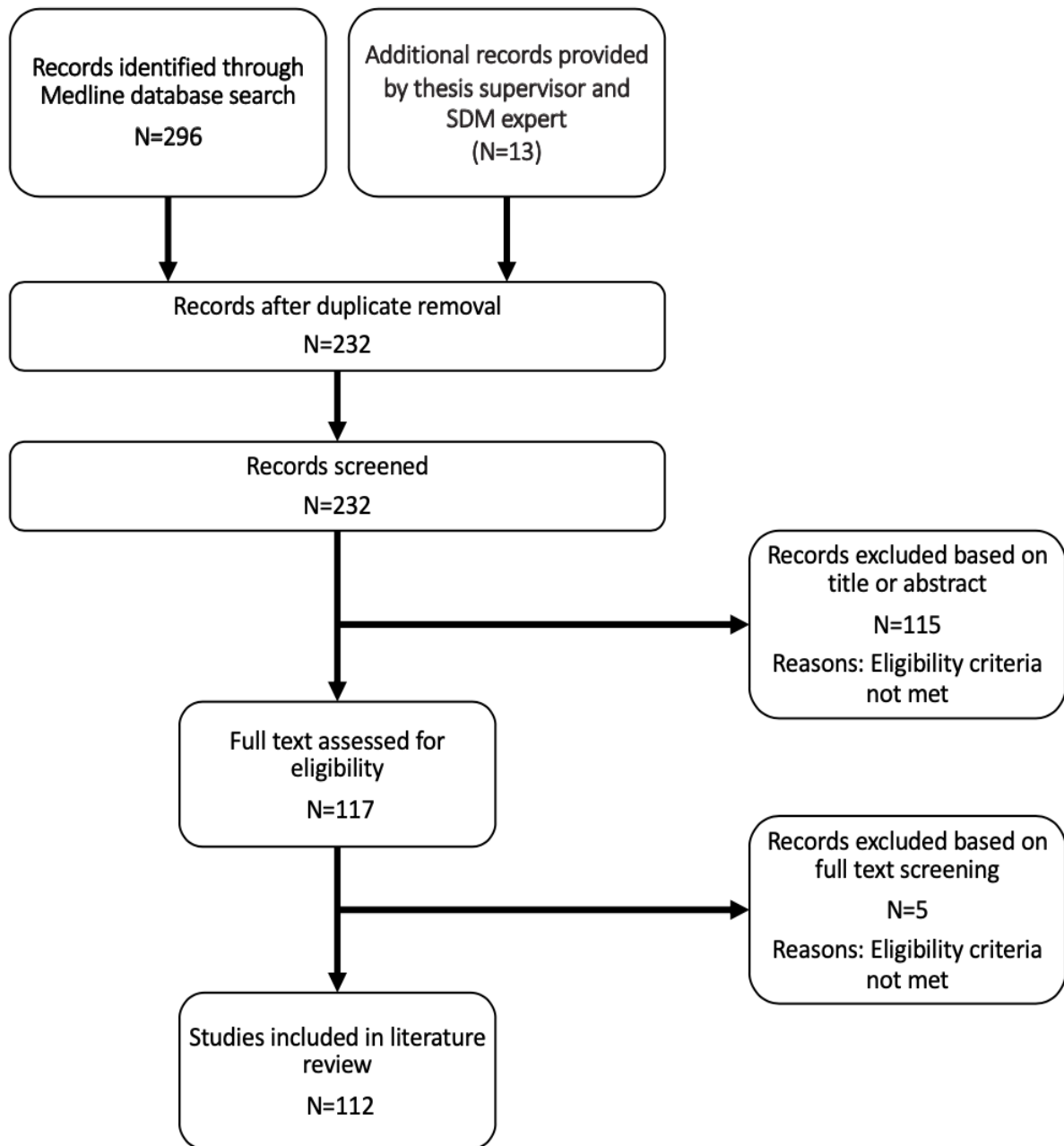
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APPENDIX A: LITERATURE REVIEW

Search Strategy

	Concept #1: Medical Education	Concept #2: OR Medical Residents	Concept #3: AND Shared Decision- Making	Concept #4 AND Attitudes	Concept #5 AND Assessment
MeSh Term #1:	Educational, medical, continuing	Internship and residency	Decision making, shared	Health Knowledge, Attitudes, Practice	
OR MeSh Term #2:	Education, medical, graduate	Physicians			
OR [Text word #1]:	Medical Education	Residents*		Attitude*	Tool*
OR [Text word] #1:		Clerkship	Shared decision making*	Willingness*	Measure*
OR [Text word] #2:		Family medicine*		Perception*	assessment*

((("education, medical, continuing"[MeSH Terms] OR "education, medical, graduate"[MeSH Terms] OR "internship and residency"[MeSH Terms] OR "medical education"[ti] OR "physicians"[MeSH Terms] OR physician*[ti] OR residents*[ti] OR "clerkship" [tw] OR "family medicine*" [tw] OR "primary care physician" [tw])) AND ("decision making, shared"[MeSH Terms] OR "shared decision making*" [Text Word]) AND ("Health Knowledge, Attitudes, Practice"[Mesh] OR willingness[tw] OR attitude*[tw] OR perception*[tw])) AND (assessment* OR tool* OR measure*))



APPENDIX B: ETHICS



McGill

Faculty of
Medicine and
Health Sciences

Faculté de
médecine et des
sciences de la santé

3655 Sir William Osler #633
Montreal, Quebec H3G 1Y6

3655, Promenade Sir William Osler #633
Montréal (Québec) H3G 1Y6

Tel/Tel: (514) 398-3124

March 15, 2022

Dr. Roland Grad
Department of Family Medicine
5858 chemin de la Côte-des-Neiges, 3rd Floor
Montreal, QC H3S 1Z1

RE: IRB Study Number A03-E06-21A (21-03-014)
Better shared decision making in cancer screening: Impact of a multi-component educational intervention in the Family Medicine residency

Dear Dr. Grad,

Thank you for submitting an application for Continuing Ethics Review for the above-referenced study.

The study progress report was reviewed and Full Board re-approval was provided on March 14, 2022. The ethics certification renewal is valid to March 13, 2023.

The Investigator is reminded of the requirement to report all IRB approved protocol and consent form modifications to the Research Ethics Offices (REOs) for the participating hospital sites. Please contact the individual hospital REOs for instructions on how to proceed. Research funds may be withheld and / or the study's data may be revoked for failing to comply with this requirement.

Should any modification or unanticipated development occur prior to the next review, please notify the IRB promptly. Regulation does not permit the implementation of study modifications prior to IRB review and approval.

Regards,

Roberta M. Palmour, PhD
Chair
Institutional Review Board

cc: Vinita D'Souza
A03-E06-21A (21-03-014)



McGill

Faculty of
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Health Sciences

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Tél/Tel: (514) 398-3124

11 March 2022

Dr. Roland Grad
Department of Family Medicine
5858 Ch. de la Côte-des-Neiges, 3rd Floor
Montreal QC H3S 1Z1

RE: IRB Study Number A03-E06-21A / 21-03-014

Better shared decision-making in cancer screening: impact of a multi-component educational intervention in the Family Medicine residency

Dear Dr. Grad,

On 11 March 2022, the following updates received an expedited / delegated review and approval:

- Amendment notification (dated 09 March 2022) and Amendment Summary
- Revised Consent Form, version March 2022.

Investigators are reminded of the requirement to report all McGill IRB approved study documents to the Research Ethics Offices (REOs) of participating study sites, if applicable. Please contact the individual REOs for instructions on how to proceed. Research funds may be withheld and/or the study's data may be revoked if there is a failure to comply with this requirement.

Sincerely,

Roberta Palmour, PhD
Chair
Institutional Review Board

Cc: A03-E06-21A / 21-03-014

APPENDIX C: PERMISSION FOR INCORPORATE USE



○ Glyn Elwyn <glynelwyn@gmail.com>

Thursday, January 20, 2022 at 9:59 AM

To: ☒ Roland Grad, Dr

Cc: Gabrielle Stevens; ☒ Amrita Sandhu ^

On Thu, Jan 20, 2022 at 7:27 AM Roland Grad, Dr <roland.grad@mcgill.ca> wrote:

Great - thank you for this idea and for your ongoing support.

Our 2021 "pilot" study provides evidence for the need for this work - to further improve how we train the doctors of the future. Roland

From: Glyn Elwyn <glynelwyn@gmail.com>

Sent: 19 January 2022 21:04

To: Roland Grad, Dr <roland.grad@mcgill.ca>

Cc: Gabrielle Stevens <gabrielle.stevens@dartmouth.edu>; Amrita Sandhu <amrita.sandhu@mail.mcgill.ca>

Subject: Re: Willingness to engage_v2.docx

How about a more ambitious study.

Measure willingness of a early stage residents - maybe another cohort. Get a baseline.

Invite a few to do hothouse training in SDM (you know their baseline already).

The training is by me and you and requires reading and seminars and simulation-exercises and so on.

It not just an hour or two to an unmotivated gang.

Then let them go and see patients for a while.

Then re-measure the cohorts and the hothouse people.

I predict significant shift in those trained while the before and after of the others will hardly move.

Professor Glyn Elwyn BA MD MSc PhD | [Institution](#) | [Web](#) | [Publications](#) | [Twitter](#) | [Option Grid](#)

Support Nancy.L.O'Brien@dartmouth.edu

Calendly <https://calendly.com/glynelwyn>

On Wed, Jan 19, 2022 at 7:59 PM Roland Grad, Dr <roland.grad@mcgill.ca> wrote:

Glyn, my student Amrita (cc) would like to do a follow up study on this topic, using incorpoRATE.

Using a mixed methods design, possible research questions include:

1. How do family medicine residents view the importance of decision-making in preventive health care?
2. How is their perspective influenced by the perceived stakes of these decisions?

Are there other questions that spring to mind?

APPENDIX D: CONSENT FORM

Introduction

You are being asked to participate in this research because you are a resident in Family Medicine. Please read this 'Information Sheet and Consent Form' carefully and ask as many questions as you like before deciding whether to participate.

Background and Purpose of the Study

This study seeks to better understand how residents interpret the items on an attitude questionnaire called IncorpoRATE. The results of this study will help inform to what extent this questionnaire is used in medical education.

Study Procedures

If you participate, we will ask you to complete a brief demographic questionnaire now, and a 7-item questionnaire (called IncorpoRATE) - now and in three months. We will also ask you to install a smartphone app at no charge to you. We will track how frequently you access pages on the app. We will not track any web pages you access. App usage data, along with your name, will be stored in Canada on a password protected commercial server managed by Amazon.

After completion of the IncorpoRATE survey at each time, you will be contacted by email to arrange an online interview of approximately 30 minutes to discuss your answers. In addition, you agree to allow your residency program to inform us if you take a leave of absence during the study. You will be assigned a unique identification number. In so doing, neither your name nor any other demographic information you provide will be entered into the databases we will use for statistical analysis. In our analysis, we will examine your use of the app and produce a database without names for final analyses.

Study Duration

The study runs from the day you consent e.g., May 4, 2022, until December 31, 2022.

Potential Harms

There are risks inherent in the transfer of data over the Internet if there is a security breach or attack from Internet-borne viruses or data-sniffing technologies.

Potential Benefits

You may not directly benefit from using the App. The results of this study may benefit the education of future residents.

Will I be paid to participate in the study?

You will receive \$100 in compensation for the completion of both IncorpoRATE surveys and two interviews. Using the App may result in added data charges from your service provider.

Will there be any costs to me in this study?

No costs are anticipated due to participating in this study.

Withdrawal

Your participation in the present study is voluntary. You can withdraw from the study at any point in time without any negative consequence.

Confidentiality

Your name will be stored with your app usage data on a password protected server. Only research team members will have access to this data. Any databases downloaded from the server will be stored on a password protected data key or PC, in a locked office belonging to the principal investigator, and kept for 10 years. On the server, your name is required for the analysis and to troubleshoot any issues you may experience. All study information will be used for this research or academic purposes such as curriculum planning. Unless authorized in writing, publication of the results of this study will be done anonymously for all individuals and organizations involved. Study results will be published in a journal with a focus on medical education.

Interviews will be conducted virtually using Zoom and will follow McGill University guidelines. Electronic documents and audio - video recorded qualitative interviews will be stored on password-protected folders in the principal investigator's computer at McGill's password-protected server (OneDrive). All interview data will be anonymized prior to analysis.

Contact

If you have questions or concerns regarding your rights, please contact Vinita D'Souza, research professional, at vdsouza@jgh.mcgill.ca. For questions about the rights of research participants, please contact Ilde Lepore, Ethics Officer for the McGill Institutional Review Board, ilde.lepore@mcgill.ca, and 514-398-8302.

APPENDIX E: PRIMARY INTERVIEW RECRUITMENT

Subject Line: From Dr. Roland Grad: Interview and \$100 Compensation

Dear Resident,

Thank you for consenting to participate in our study of Shared Decision Making in Family Medicine.

We are writing to request an interview. The goal of this interview is to better understand your perspective on implementing shared decision making in practice. This is linked to your participation in the workshop you attended on Wednesday May 4.

For this brief Zoom interview and a quick follow up interview in 3 months' time, you will be compensated with a \$100 in Amazon gift card.

Please contact me at amrita.sandhu@mail.mcgill.ca so that we may schedule the interview. Of course, we will also gladly answer any questions you may have.

Sincerely,

Amrita Sandhu (MSc. Candidate, Department of Family Medicine, McGill University)
Roland Grad MDCM MSc FCFP
Associate professor, Family Medicine

Subject Line: REMINDER From Dr. Roland Grad: Interview and \$100 Compensation

Dear Resident,

Thank you for consenting to participate in our study of Shared Decision Making in Family Medicine.

We are writing to request an interview. The goal of this interview is to better understand your perspective on implementing shared decision making in practice. This is linked to your participation in the workshop you attended on Wednesday May 4.

For this brief Zoom interview and a quick follow up interview in 3 months' time, you will be compensated with a \$100 in Amazon gift card.

Please contact me at amrita.sandhu@mail.mcgill.ca so that we may schedule the interview. Of course, we will also gladly answer any questions you may have.

Sincerely,

Amrita Sandhu (MSc. Candidate, Department of Family Medicine, McGill University)
Roland Grad MDCM MSc FCFP
Associate professor, Family Medicine

APPENDIX F: MEMBERCHECK RECRUITMENT

Subject Line: From Dr. Roland Grad: Second Interview and \$100

Dear Resident,

Thank you for participating in our study of Shared Decision Making in Family Medicine. We are writing to schedule a brief follow-up interview. The goal of this final interview is to discuss the outcome of the first interview completed over the summer. This is linked to your participation in the workshop you attended on Wednesday May 4.

For this brief Zoom interview, you will receive a \$100Amazon gift card. Please contact me at amrita.sandhu@mail.mcgill.ca so that we may schedule this. Of course, we will also gladly answer any questions you may have.

Sincerely,
Amrita Sandhu (MSc. Candidate, Department of Family Medicine, McGill University)
Roland Grad MDCM MSc FCFP
Associate professor, Family Medicine

Subject Line: REMINDER From Dr. Roland Grad: Second Interview and \$100

Dear Resident,

Thank you for participating in our study of Shared Decision Making in Family Medicine. We are writing to schedule a brief follow-up interview. The goal of this final interview is to discuss the outcome of the first interview completed over the summer. This is linked to your participation in the workshop you attended on Wednesday May 4.

For this brief Zoom interview, you will receive a \$100Amazon gift card. Please contact me at amrita.sandhu@mail.mcgill.ca so that we may schedule this. Of course, we will also gladly answer any questions you may have.

Sincerely,
Amrita Sandhu (MSc. Candidate, Department of Family Medicine, McGill University)
Roland Grad MDCM MSc FCFP
Associate professor, Family Medicine

APPENDIX G: PRIMARY INTERVIEW GUIDE

A) Welcome and Introduction

Hello, thank you for taking the time to participate in my thesis project today.

(Allow for introductions)

The interview today will be recorded for research purposes. All audio and video data will remain confidential and will be stored securely according to McGill University guidelines. At any time during the interview, you are free to withdraw your consent. Just let me know. Do you have any questions, comments, or concerns before we begin?

(Answer questions or provide clarifications before starting the interview)

B) Shared Decision-Making During Residency

My thesis study is about doctor patient communication. More specifically, making shared decisions with patients as part of family medicine residency. Shared decision-making involves both the patient and physician contributing to the medical decision-making process and agreeing on treatment decisions together.

For my first question, would you be able to describe a shared decision you've made with a patient during your residency training? Note: If participant is unable to provide an example, probe using an example of shared decision making:

A shared decision between a primary care physician and a patient could look like a woman in her 50s who got the little paper from the Ministry of Health and Social Services of Quebec that encourages her to get a mammogram done. The patient isn't sure whether to pursue this, so she asks her family doctor and together they make a shared decision, considering the patient's perspective as well as clinical guidelines.

(If participant still cannot provide their own example, move to part C)

Would you be able to describe the stakes of the shared decision example you provided?

C) IncorpoRATE Item 6 and 7 (Comfort with Incongruence (High versus Low Stakes))

Now we are moving to the second part of the interview. Back in May you attended a workshop hosted by Dr. Grad. You had the opportunity to complete an online measure called IncorpoRATE. For my next two questions, I wanted to speak with you about your ratings for item 6 and item 7 of IncorpoRATE. These items ask about your comfort providing care in the context of an incongruent patient-provider decision.

(Make sure item 6 and participant's rating for item 6 are on the screen)

Item 6 reads: In a low stakes situation, if a patient who is educated about their treatment options chooses an option that is not aligned with your clinical recommendation, you rated your comfort providing care a (repeat participant score)

Would you be able to give me an idea about what was going through your mind as you answered this question? What was your thought process behind giving a rating of (repeat participant score) in a low stakes situation?

(Allow participant to answer)

Item 7 reads: In a high stakes situation, if a patient who is educated about their treatment options chooses an option that is not aligned with your clinical recommendation, you rated your comfort providing care a (repeat participant score).

Would you be able to give me an idea about what was going through your mind as you answered this question? What was your thought process behind giving a rating of (repeat participant score) in a high stakes situation?

Now that you have had a chance to re-visit your answers to Item 6 and 7 of IncoRpoRATE, I wanted to ask you about your overall thoughts regarding these survey items. These questions are multifaceted regarding the types of information you are asked to consider before answering.

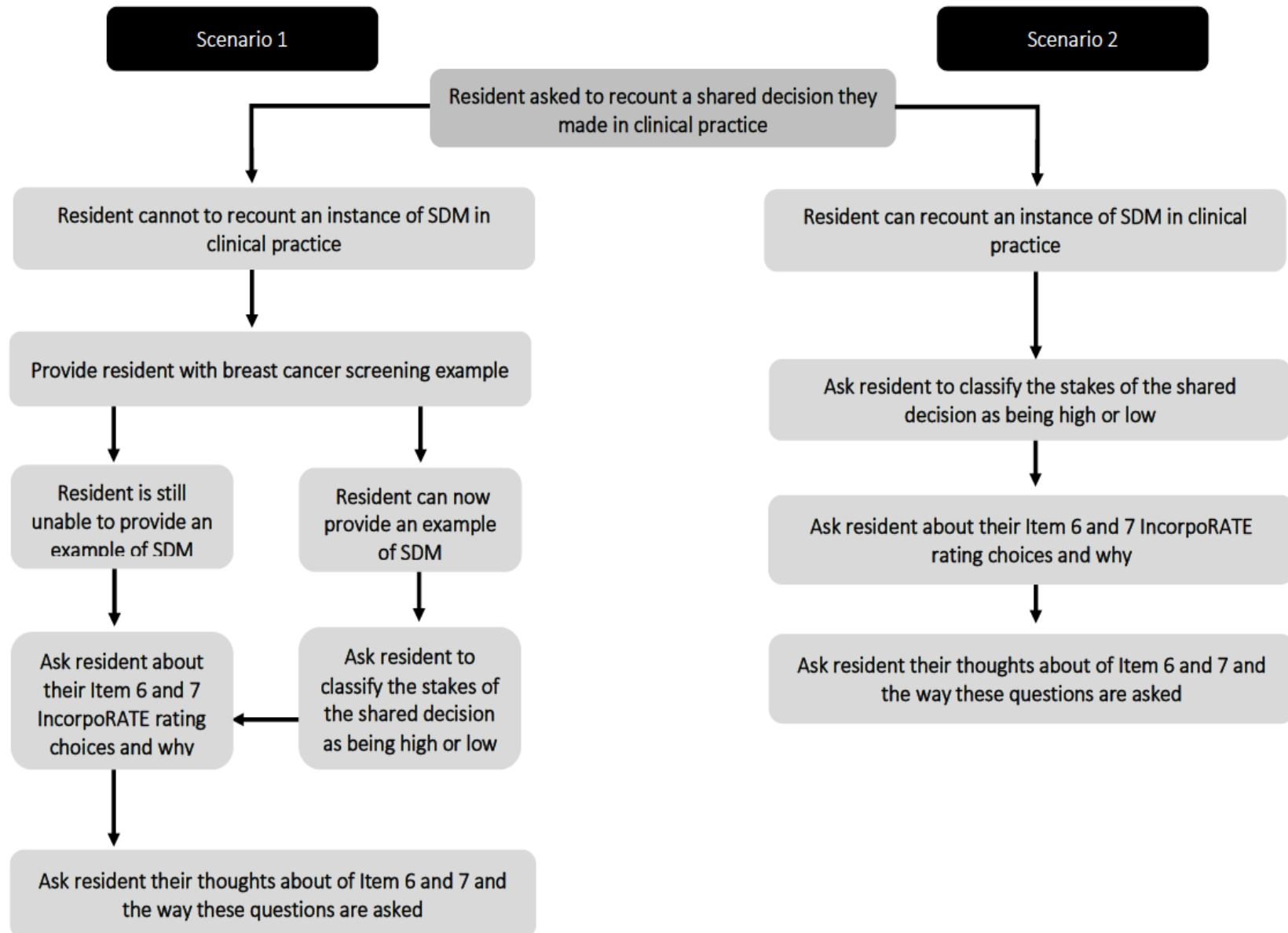
What are your thoughts regarding how understandable these questions are for the average resident completing this survey? Is there anything that could be improved in the way that these questions are asked or what these questions are asking about?

(Thank participant for feedback)

Thank you for completing your first interview. As a friendly reminder, I will be contacting you in three months' time to schedule a brief follow up interview. Here, I will briefly recap what we spoke about here today to ensure the data I have collected is accurate. After completing the second interview you will receive \$100 in the form of an Amazon gift card sent to the email address you provided.

If you have any further questions, comments, or concerns regarding my study please don't hesitate to contact myself or my supervisor (share contact information on slide). Thank you again for your participation.

PATIENT-PROVIDER INCONGRUENCE DURING SHARED DECISION MAKING



APPENDIX H: SECONDARY INTERVIEW GUIDE

Member Check Interview Review Points (Participant ID Number)

A) Introduction and Welcome

Thank you so much for agreeing to this follow up interview. It should be very brief; I'm basically going to summarize what we talked about back in (Month of Primary Interview) to make sure I've interpreted the information you provided me with last time correctly. Like last time the interview will be recorded for research purposes. All audio and video data will be confidential and only made available to the project researchers. After the interview you'll be given a \$100 for your participation and contribution to my study. Before we begin, do you have any questions, comments, or concerns?

B) Recount Information from Primary Interview [Copy and Pasted from Primary Transcript]

- Shared Decision Examples:
- Decisional Stakes of Example:
- Item 6: Comfort with Low Stakes Incongruent Decision (/10)
- Item 7: Comfort with High Stakes Incongruent Decision (/10)
- IncorporATE Items 6 and 7:

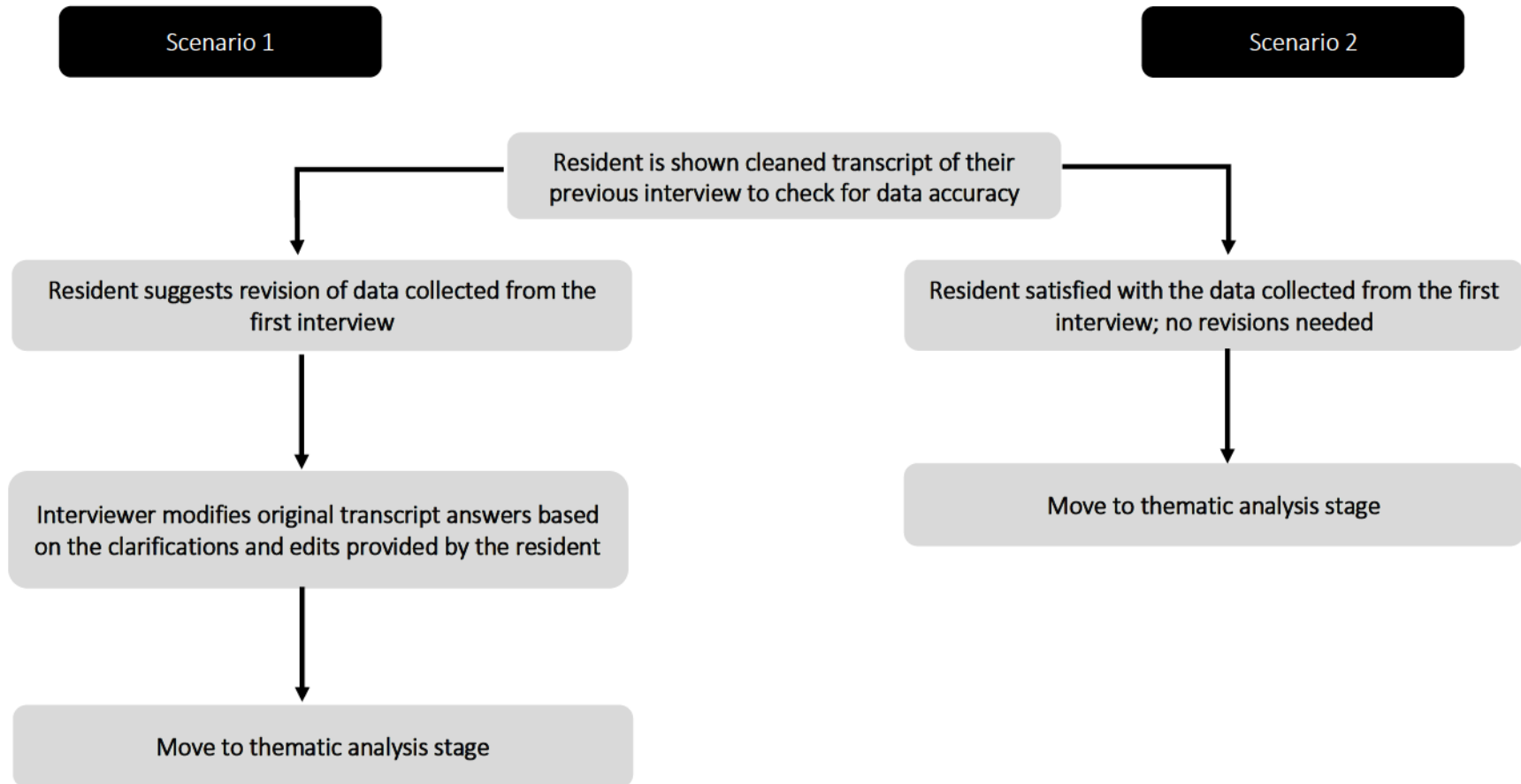
C) Concluding Remarks

Before I move to the end of the interview, is there anything else you'd like to add regarding shared decision making, stakes of a shared decision being high or low, or anything else about the IncorporATE survey in general?

As we are wrapping up, would it be possible to get your McGill ID number so that I can issue your \$100 compensation. You should receive your compensation in 10-14 days. If you don't get it or hear anything by the two-week mark, then please email me and I'll take care of it.

Participant McGill ID Number: _____

PATIENT-PROVIDER INCONGRUENCE DURING SHARED DECISION MAKING



APPENDIX I: QUERY ANALYSIS DESIGN

Query Design 1: Consequences and decisional stakes

Matrix Coding Search Criteria

Run Query

Save Results...

Save Criteria...

Search in:

Files and Externals

Selected Items

Items in Selected Folders

Rows:

☐ Codes\\Consequences\\Long term

☐ Codes\\Consequences\\short term

Columns:

☐ Codes\\High stakes

☐ Codes\\Low stakes

+

-

+

-

Coding Matrix

A : High stakes

B : Low stakes

1 : Long te...

-

-

2 : short t...

-

-

Query Design 2: Comfort with incongruence and decisional stakes

Matrix Coding Search Criteria

Run Query

Save Results...

Save Criteria...

Search in:

Files and Externals

Selected Items

Items in Selected Folders

Rows:

☐ Codes\\Decreased Comfort with Incongruence

☐ Codes\\Increased Comfort with Incongruence

Columns:

☐ Codes\\High stakes

☐ Codes\\Low stakes

+

-

+

-

Coding Matrix

A : High stakes

B : Low stakes

1 : Decrea...

-

-

2 : Increas...

-

-

Query Design 3: Resident understanding and comfort with incongruence

Matrix Coding Search Criteria

Run Query

Save Results...

Save Criteria...

Search in:

Files and Externals

Selected Items

Items in Selected Folders

Rows:

☐ Codes\\Explanation

☐ Codes\\Rationalization

Columns:

☐ Codes\\Decreased Comfort with Incongruence

☐ Codes\\Increased Comfort with Incongruence

+

-

+

-

Coding Matrix

A : B : Increased
Decreased Comfort with
Comfort with Incongruence
Incongruence

1 : Explan...

-

-

2 : Ration...

-

-