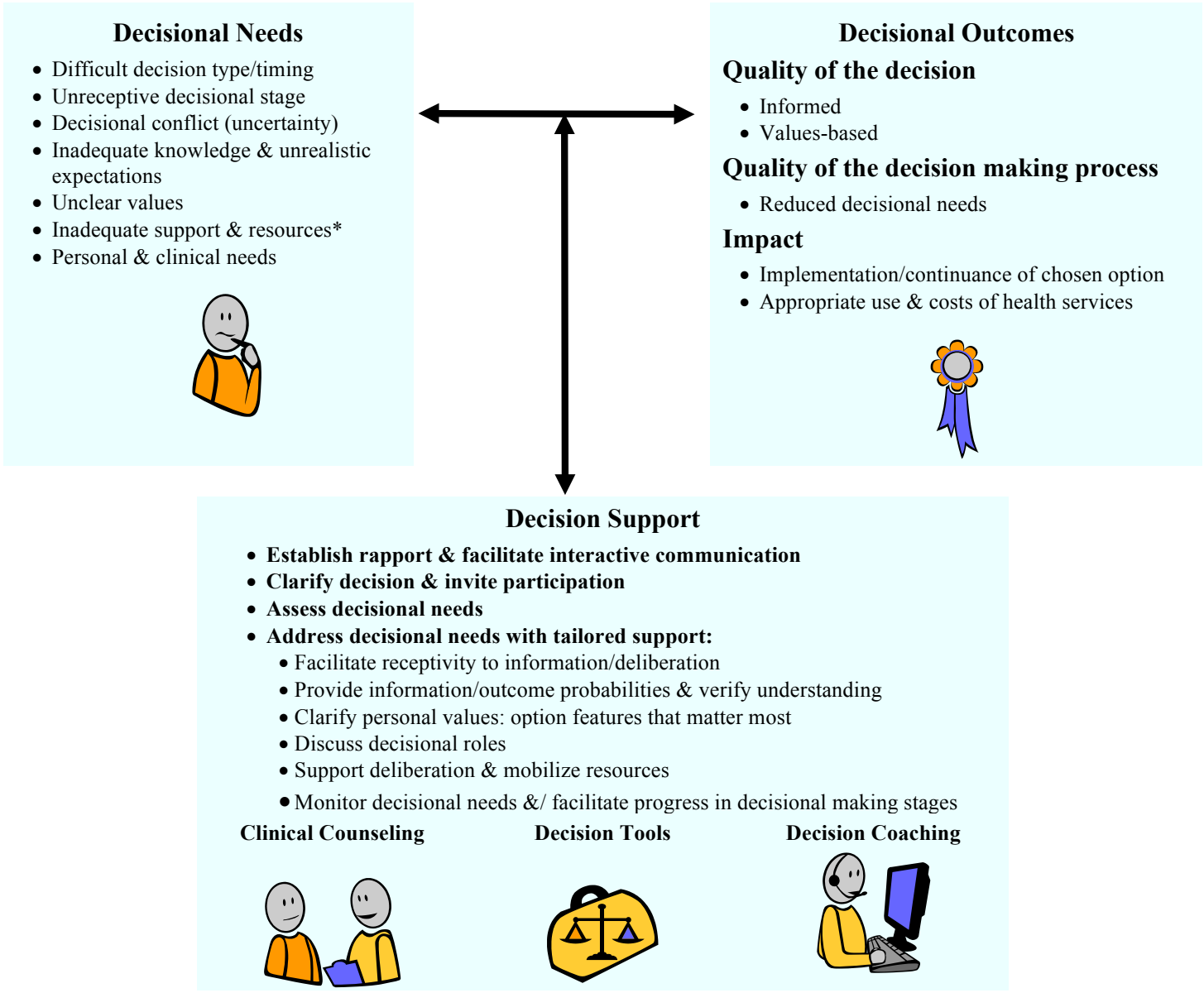
The Ottawa Decision Support Framework (ODSF)

The ODSF conceptualizes the support needed by patients, families, and their practitioners for 'difficult' decisions with multiple options whose features are valued differently. It guides practitioners and researchers in assessing participants' *decisional needs*, providing *decision support interventions* (clinical counseling, decision tools, decision coaching), and evaluating their effects on *decisional outcomes*. It has been used to develop and evaluate over 50 patient decision aids, measures such as the Decisional Conflict Scale, and training in providing decision support.

As shown below, the ODSF asserts that *decision support interventions* that address patients' *decisional needs* improve the *decisional outcomes*: quality of the decision and decision process, which may favourably impact upon implementation of chosen option and appropriate use of health services. Its definitions and underlying theories are described in the appendix.



*Inadequate support and resources to make/implement the decision include: information inadequacy/overload; inadequate perceptions of others' views/practices; social pressure; difficult decisional roles; inadequate experience, self-efficacy, motivation, skills; inadequate emotional support, advice, instrumental help; and inadequate financial assistance, health/social services.

This 20th Anniversary version of the ODSF (2020)[1], was updated using an overview of four systematic reviews of studies that used the ODSF for over 100 different decisions faced by over 50,000 patients in 18 countries on 5 continents. Reviews included: a) 45 decisional needs studies[2]; b) 24 randomized controlled trials of patient decision aids[3]; c) 2 randomized controlled trials of decision coaching[1]; and d) 253 studies that assessed decisional needs using the Decisional Conflict Scale[4]. The overview of systematic reviews validated the *decisional needs* listed in the model. As hypothesized, the ODSF-based patient decision aids were superior to usual care in improving decision quality and reducing decisional needs. More research is needed on the impact of patient decision aids on implementation/continuance of chosen option and appropriate use/costs of health services, as well as evaluation of decision coaching.

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A. 20th Anniversary ODSF Update

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B. ODSF Based Training Resources

- **Practitioner Training:** O'Connor AM, Stacey, D, & Jacobsen MJ. Ottawa Decision Support Tutorial (ODST): Improving Practitioners' Decision Support Skills Ottawa Hospital Research Institute: Patient Decision Aids. Log in to the ODST.

  Boland L, Légaré F, Carley M, Graham ID, O'Connor AM, Lawson ML, Stacey D. Evaluation of a shared decision making educational program: The Ottawa Decision Support Tutorial. Patient Education and Counseling. 2019 102(2):324-331.

- **Patient Decision Aid Development Training:** O'Connor A, Stacey D, Saarimaki A, et al. Ottawa Patient Decision Aid Development eTraining. https://decisionaid.ohri.ca/eTraining/.

C. ODSF Historical Sources

Presentation by Annette O'Connor entitled "Ottawa Decision Support Framework: Historical Perspective" (PowerPoint file with audio). Part of the "20th Anniversary Update of the Ottawa Decision Support Framework: A Workshop to Discuss Evidence, Lessons Learned, and Future Research." held during the "10th International Shared Decision Making Conference (ISDM 2019), that took place from July 7-10 2019 in Quebec City, Canada.

Historical Papers

1. O'Connor AM, Tugwell P, Wells G, Elmslie T, Jolly E, Hollingworth G. A decision aid for women considering hormone therapy after menopause: Decision support framework and evaluation. *Patient Education & Counseling.* 1998;33(3):267-279.
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3. Note: elements of the framework were published as early as 1989. See:, O'Connor A, O'Brien-Pallas LL. Decisional conflict. In: McFarland GK, McFarland EA, eds. *Nursing diagnosis and intervention* Toronto, Canada: C.V. Mosby Company; 1989:573-588.
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Appendix:

Ottawa Decision Support Framework (2020[1]): Underlying Theory, Definitions, and Measures

The ODSF[2-6] has been based on theories and constructs from prospect theory,[7] decision analysis,[8] reasoned action,[9] decisional conflict[4,10,11] social support[12] and self-efficacy[2,5,13]. Decision coaching uses supplementary theories of communication and implementation skills building, and most recently, theoretical approaches of Duhamel and Leventhal et al. to address unreceptive decisional stage due to powerful emotions and difficult decisional roles related to the family.[14-17]

Table 1 defines elements of the ODSF. The conceptual definitions of decisional needs are derived from a coding manual for our 2020 decisional needs systematic review and incorporate new manifestations of needs[18].

The decision support interventions are based on the ODSF-based training tutorials on decision support[19] patient decision aid development according to the ODSF[20,21] and IPDAS,[22,23] and publications regarding decision coaching.[24-26] Interventions also address new manifestations of decisional needs.

Primary decisional outcomes related to the quality of the decision and decision making process incorporate measures that are most sensitive to decision support interventions. Secondary downstream impacts are limited to those that hold the most promise for improvement across a range of decisions.

Table Ottawa Decision Support Framework Definitions (Revised 2020).[1]

1.0 DECISIONAL NEED Deficit that can adversely affect the quality of a decision (informed, match most valued features) and require tailored decision support. Each need below describes their manifestations (and quantitative measures[27]).

1.1 DIFFICULT DECISIONAL TYPE & TIMING: Special characteristics that affect the quality of the decision and require tailored decision support interventions. For example, interventions **may** need to be tailored according to:

a. Difficult Decisional Type: class or features of a decision that make decision making more difficult, e.g. multiple options; scientifically uncertain outcomes; known outcomes and other features that patients value differently.

b. Difficult Decisional Timing: features of the time frame for deliberation that makes decision making more difficult, e.g. urgent, delayed, or unpredictable.

1.2 UNRECEPTIVE DECISIONAL STAGE: lacks openness to receive information and/or to deliberate in their current stage of decision making about options **(**not thinking about, actively considering, close to choosing, taking steps toward/already implemented). Contributing factors may include: denial, hasty decision making, premature closure, powerful emotions affecting information processing, lack of acceptance of condition or need for treatment, being unmotivated, e.g. because decision too far off in the future or unpredictable.

1.3 DECISIONAL CONFLICT A state of personal uncertainty about which course of action to take when choice among options involve risk, loss, regret, or challenge to one's personal values[28] (measured by DCS Uncertainty subscale; SURE test item).

The hallmark behavioural manifestation is verbalized uncertainty. Other manifestations while making a decision include: worrying what could go wrong/concerned about undesired outcomes, wanting to delay the decision, questioning what is important to them, feeling distressed or upset while attempting decision, wavering between options, feeling like they cannot get the decision off their minds, feeling physically stressed (e.g. tense muscles, a racing heartbeat, difficulty sleeping). Although personal uncertainty arises from the inherent nature of the difficult decision, modifiable decisional needs can exacerbate it: inadequate knowledge, unrealistic expectations, unclear values, and inadequate support.

1.4 INADEQUATE KNOWLEDGE Unaware or lacks cognizance of essential relevant facts to make a decision: health problem/condition; options; features of options (known benefits, harms, and other outcomes and features; scientifically uncertain outcomes). (Measured by knowledge test: % inaccurate; DCS uninformed subscale; SURE test item).

1.5 UNREALISTIC EXPECTATIONS

a. Unaware of one's chances or probabilities of outcomes (e.g. benefits, harms, other) for each option.
b. Perceptions of one's likelihood of outcomes are not aligned with the current evidence for similar patients
c. difficulty believing that the outcome probabilities apply to them.

(Measured by % unrealistic expectations: perceived outcome probabilities that are not aligned with evidence for similar patients).

1.6 UNCLEAR VALUES Lacks clarity regarding desirability or personal importance of the features of options: known benefits, harms, other outcomes and features; scientifically uncertain outcomes. (Measured by DCS unclear values subscale; SURE Test item).

1.7 INADEQUATE SUPPORT & RESOURCES TO MAKE AND IMPLEMENT THE DECISION Lacks the quality, appropriate quantity, and/or timely access to support and resources **needed to make and implement the decision.** (Measured by DCS unsupported subscale; SURE Test item)

a. **Information inadequacy/overload:** lacks the quality, appropriate quantity, and/or timely access to essential relevant information for decision making: health problem/condition, available options and their features. Examples include: known benefits, harms, other outcomes and features, outcome probabilities; scientifically uncertain outcomes, others' experiences with options e.g. procedures, side effects, outcomes, information overload.
b. **Inadequate perceptions: others' views/practices**: Unaware of, misperceives, or lacks clarity about what others decide or what important others think is the appropriate choice (e.g. spouse, family, peers, health professional(s)). Receives conflicting recommendations from others.
c. **Social pressure**: Perception of persuasion, influence, coercion from important others (e.g. spouse, family, health professionals, or society) to choose a specific option.
d. **Difficult decisional roles:** problematic involvement in decision making about options. Manifestations may include:
   i. unclear decisional role (shared with important other(s); patient-led after considering important other(s) views; delegated after important other(s) considers patient's views)
   ii. mismatch between an informed person's preferred decisional role and actual role
   iii. difficulty deliberating with practitioner. Examples of contributing factors are: the patient/family has not yet established a relationship with health professional or does not perceive they have positive relationship with the health professional (e.g. trust, mutual respect, empathy, compassion, honesty, clear communication).
   iv. difficult shared family deliberation. Examples of contributing factors may include different information needs, different values, communication barriers, pre-existing social/family dysfunction (see personal needs).
   v. difficulty involving family in deliberations, e.g. because patient does not want to worry family, family lacks knowledge.
e. Inadequate experience, self-efficacy (measured by Decision Self-efficacy Scale), **motivation, skills to decide/implement a decision.**
f. **Inadequate emotional support, advice, instrumental help** (e.g. transportation)**, financial assistance, health and social services to make/implement a decision**.

1.8 PERSONAL & CLINICAL NEEDS Special personal and clinical characteristics that affect the quality of the decision and require tailored decision support interventions. For example, interventions may need to be tailored according to patient characteristics listed below.

a. Patient: age, gender, education, marital status, ethnicity, socioeconomic status, occupation, locale, diagnosis & duration of condition, health status (physical, emotional, cognitive, social limitations), religion/spirituality

b. Practitioner: age, gender, ethnicity, clinical education, specialty, clinical practice locale, experience, counseling style

2.0 **DECISION SUPPORT INTERVENTIONS** Structured assistance in deliberating about the decision and communicating with others. It is tailored to the patients' decisional needs and aims to achieve decisions that are informed and based on features that patients' value most. It involves: 1) establishing rapport and facilitating interactive communication; 2) clarifying decision and inviting participation; 3) assessing the patient's decisional needs; and 4) addressing decisional needs with tailored support: a) facilitating receptivity to information/deliberation; b) providing information and outcome probabilities and verifying understanding; c) clarifying personal values (option features that matter most); d) discussing decisional roles; e) supporting deliberation and mobilizing resources; and f) monitoring decisional needs and facilitating progress in decision making stages.

Decision support is delivered as clinical counseling, which may be supplemented with patient decision aids, and/or decision coaching:

Clinical counseling: provided by health professionals who have the disciplinary competence, legal authority, and accountability to: a) identify/diagnose a problem/health condition; b) identify options; c) provide decision support, which may include referring patients to a PtDA and/or coaching to prepare for a final deliberation consult or using a PtDA during the deliberation consult; and d) facilitate implementation of the final decision by making a referral, writing a prescription, ordering screening/diagnostic tests, performing surgery, providing care or therapy etc. Examples of professionals include audiologists, nurses, nurse practitioners, occupational therapists, pharmacists, physicians, physiotherapists, psychologists, medical social workers, speech language therapists. **See strategies below, which includes referral to other health professionals or decision coaches when basic approaches are not likely to or do not resolve decisional needs.**	**Patient Decision Aids (PtDAs):** Supplementary, condition-specific, evidence-based tools **to prepare** a patient to participate in making a specific and deliberated choice with one's health professionals. They are used **after** one's health professional's diagnosis/option identification and **before or during** final deliberations with this health professional. When used before final deliberations, they can be used by the patient alone or with a health coach. Ideally, they are linked into care processes. **See ODSF PtDA template elements below, adapted based on an assessment of patients' and practitioners' needs and usability testing in clinical care.**[20,29]	**Decision Coaching.**[26] Supplementary non-directive guidance by trained health professionals to develop patients' deliberation and implementation skills **in preparation** for their final deliberations with the health professional who identified options. Coaching can be provided face to face (individual, group) or using communication technologies (telephone, Internet) Decision tools such as a condition-specific Patient Decision Aid or generic personal decision guides (individual[30] or for 2)[31] may be used. Ideally the health professional who identifies options refers patients to decision coaches as part of the care pathway when basic approaches are not likely to or do not resolved decisional needs. However, some decision coaches are accessed directly by patients (e.g. call centers funded by health plans). **See coaching strategies below.**

Decision Support	**Clinical counseling**	**Decision Tools: Patient Decision Aids (Templates)**	**Decision Coaching**
Time Frame	Diagnosis to implementing final decision	After diagnosis & option identification & before or during final deliberation with health professional	After diagnosis & option identification & before final deliberation with health professional
Establish rapport.	√		√
Facilitate interactive communication.	√	if used in the consultation	√
Invite participation in decision making	√	√ facilitates engagement	√ facilitates engagement
Clarify decision.	√	√	√
Assess and address decisional needs	√ interactive	developed from practitioner/patient/family needs assessments	√ interactive
Personal/Clinical Needs & Difficult Decision Type/Timing Tailor decision support to relevant needs (e.g. age, ethnicity, education, cognitive/social functioning, urgent timing)	√	some tailoring based on needs assessments; plain language	√
Unreceptive decisional stage: Facilitate receptivity to information & deliberation with stage-based support addressing causes:			
Premature closure: • Prevent with timely access to relevant essential information.	√	if linked to care process	if linked to care process
• If already decided, assess openness to discuss what led this decision. Check understanding of essential facts and address needs.	√		√
Powerful emotions: • Allow time to process diagnosis/need for treatment as appropriate.	√		√
• Facilitate access to essential information at the right time.	√	if linked to care process	if linked to care process
• Facilitate emotional expression, show empathy, reframe previous illness/option experiences, highlight strengths, give comfort, offer hope.[15,16]	√	some elicit emotions; further research needed on benefit of adding other interventions (e.g. vicarious experiences)	√
• Asymptomatic: explain diagnostic tests, reference values, disease progression as needed	√		√

Decisional conflict: Address modifiable factors contributing to personal uncertainty (deficits: knowledge, expectations, values clarity, support)	√	√	√
Inadequate knowledge & information: *Insufficient knowledge essential facts:* • Provide information: essential relevant facts: health problem/condition, options, benefits, harms, other option features, scientific uncertainties	√	√	√
• Verify understanding	√	√ knowledge test	√
Information Overload: • Prevent with timely access to essential relevant information.	√		√
• If overload present, check understanding essential facts, acknowledge what they know and address knowledge deficits/misconceptions	√	√ knowledge test	√
Inadequate information about others' experiences (e.g. procedures, side effects, outcomes): • Consider providing vicarious experiences (effectiveness not established [32]): Provide balanced positive/negative experiences of easily imagined physical, emotional, social effects, using verbal descriptions, images, videos, trained peer patients. The likelihood of events are also needed to prevent unrealistic expectations (see below).	√	√ optional	√
Unrealistic expectations: • Provide outcome probabilities (event rates with common denominators/time periods).	√	√	√
• Verify understanding.	√	√ built into knowledge test	√
Difficulty believing that outcome probabilities apply to them.			
• If applicable question or probe reasoning.	√		√
• Acknowledge data limitations. Consider vicarious experiences (effectiveness not established): easily imaged experiences with which the patient can identify. [7,32]	√ optional	√ optional	√ optional
Unclear values: • Clarify values for features of options			
• Ask patients about the personal importance of the option features	√	√ importance ratings elicited when used outside the consultation	√
• When asked your opinion, use balanced values-based responses (if X most important, I would/patients usually choose A; if Y most important, I would/ patients usually choose B).	√		√
• If option features are difficult to value because they are difficult to imagine[32,33] , consider vicarious experiences (effectiveness not established[32]): Provide balanced positive/negative anecdotes (easily imagined physical, emotional, social effects) using verbal descriptions, images, videos, trained peer patients.	√ optional	√ optional	√ optional
Difficult decisional roles: Unclear or mismatch preferred/actual roles Difficulty deliberating with practitioner because patient/family: have not established a relationship with practitioner; do not perceive they have positive relationship with the practitioner (e.g. trust, mutual respect, empathy, compassion, honesty, clear communication). • See above: Establish rapport and facilitate communication	√		√
• Discuss decisional roles after information/values clarification so that patient's preferred role is informed	√	√ optional: elicit preferred role	√
Difficulty involving family; Difficult shared family deliberation • Family intervention: Assess family structure (promoting a relationship of trust). Provide family systemic interventions (facilitate the expression of the emotions of all family members, use circular questioning and reframing to de-escalate conflict), facilitate access to support/group education. See conflict resolution strategies under Social Pressure. Discuss decisional roles after information/values clarification so that patient's/family's preferred role is informed	√	If common problem for a specific condition, elements can be added from the generic Ottawa Personal Decision Guide for Two[31]	√ possibly supplemented using the Generic Ottawa Personal Decision Guide for Two[31]

Inadequate experience, skills, motivation, self-efficacy to make/implement decisions: Provide structured guidance in deliberation/implementation. Develop deliberation/implementation skills	√ guide deliberation & implementation	√ deliberation steps	√ develop deliberation & implementation skills
Inadequate health/social services, financial assistance: Mobilize resources	√		√
Social pressure: Conflict resolution approaches may be useful but have not been tested: 1. Explore pressure (nature, source, areas of agreement/disagreement, reasons for differing views). 2. Guide in: (a) eliciting perceptions of others' opinions to detect misconceptions, (b) focusing on those whose opinions matter most, and (c) handling relevant sources of pressure, (i. planning communication of information, values; ii. inviting others to discuss their perceptions of options, benefits, harms, values to find areas of agreement and disagreement; iii. mobilizing social support; iv. identifying mediator, if needed). 3. Role play/rehearse strategies.	√	If common problem for a specific condition, elements can be added from the generic Ottawa Personal Decision Guide for Two[31]	√ possibly supplemented using the Generic Ottawa Personal Decision Guide for Two[31]
Inadequate perceptions of other' views/practices: Provide information: available options to increase awareness; statistics on variation in others' views, decisions, practice guidelines and rationales.	√ options, guidelines	√ options, sourced guidelines	√ sourced guidelines
Inadequate advice, emotional support, instrumental help: Provide support or mobilize access to resources (patient advocates, family, friends, support groups, services from voluntary/government sectors).	√		√
Monitor decisional needs & facilitate progress in decisional stages	√ diagnosis to final implementation	√ elicits needs/stage at time of use	√ prior to final deliberation with health professional
• Decisional stage	√	√ elicits decisional stage	√
• Decisional needs	√ SURE test	√ SURE test	√ SURE test
• Decisional quality	√ verify understanding ; choice matches important features	√ knowledge test & feedback, importance ratings for option features, preferred option	√ verify understanding; choice matches important features
• Assess/address implementation barriers (e.g. skills building, motivational interviewing)	√	√ optional feature: elicit motivation & barriers to implementation	√
3.0 DECISIONAL OUTCOMES (PATIENTS).[27]			
3.1 QUALITY OF THE DECISION (primary outcome) • **Informed: (essential knowledge, realistic outcome expectations)** Measurement requires decision-specific elicitation of: a) essential knowledge for decision making (% correct); and b) perceived outcome probabilities that align with evidence for similar patients (% accurate). • **Values-based: (choice matches features that matter most)** Measurement requires decision-specific elicitation of a) personal values (importance of option features) and b) the chosen option to determine their congruence. Measurement of value-choice congruence requires further research.[34,35]			

3.2 QUALITY OF THE DECISION MAKING PROCESS*:

- Reduction in decisional needs.
- Reductions in proportion who are undecided.
- Reduced perceptions of feeling: uninformed, unclear values, and unsupported (DCS uniformed, unclear values, unsupported subscales) [36,11,27,37] Note, it is important that the timing of measurement take into account the timing of exposure to different types of decision support and the patients' decisional stage. DCS subscores increase temporarily if they are exposed to decision support when they are unaware they have options or if they have already decided [37, 36].

3.3 IMPACT (secondary outcomes)

- Implementation/Continuance of chosen option: Does the patient implement and adhere to chosen option for as long as it is clinically appropriate (e.g. fill and refill prescriptions, continue therapy)? Implementation/Continuance of chosen option requires more standardized measurement regarding timing of choice (e.g. after using PtDA, receiving a prescription) and behaviour (filling first prescription, first refill, etc.).[38]
- Appropriate use/costs of health services: a) alignment of use with informed preferences (e.g. reduced over-use of options that informed patients don't value; improved under-use of options that informed patients value); and b) alignment of costs with changes in over-use and under-use.

OPTIONAL EVALUATION WHEN WARRANTED:

- Use of the total 16-item Decisional Conflict Scale[36,11,27,37] to be able to compare to other published trial results. It is important that the timing of measurement take into account the timing of exposure to different types of decision support and the patients' decisional stages. DCS subscores increase temporarily if patients are exposed to decision support when they are unaware they have options or if they have already decided [37]. Uncertainty subscale scores are less sensitive to change because they capture the inherent unmodifiable difficulty inherent in the decision. Moreover, subscores may not decline until after patients complete their final deliberations with their clinician[37].

- Decisional regret (measured using the Decisional Regret Scale).[39-41] For decisions that have a high likelihood of regret. Note that the timing of measurement is controversial[35]

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