

# Improving surgical care: Engaging older adults in shared surgical decision-making

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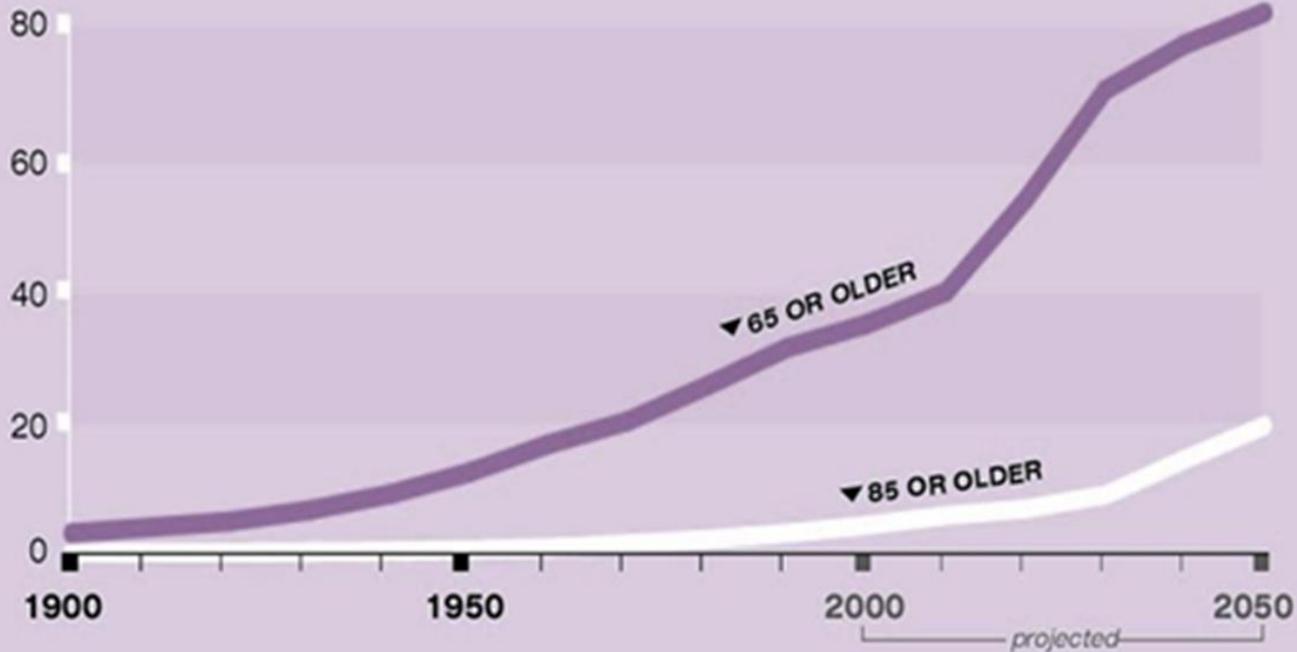


# Outline

- Why is this relevant, especially now?
- Unique considerations in this population
- Background on SDM and surgical SDM
- What's missing from surgical SDM right now?
- Geriatric Faculty Scholarship
- Next steps

# The Population is Aging in the US

Total number of persons age 65 or older, by age group, 1900 to 2050, in millions



Note: Data for the years 2000 to 2050 are middle-series projections of the population.

Reference population: These data refer to the resident population.

Source: U.S. Census Bureau, Decennial Census Data and Population Projections.

Ortman JM, Velkoff V a., Hogan H. An aging nation: The older population in the United States. *Economics and Statistics Administration, US Department of Commerce*. Published online 2014.

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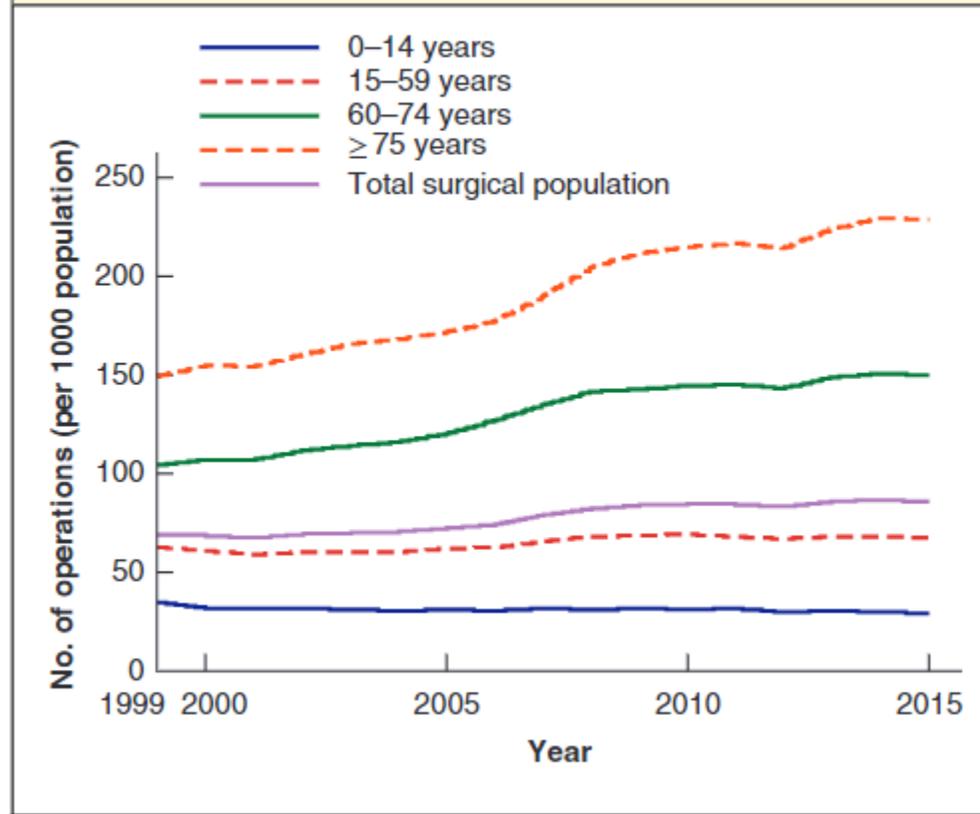
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# Older Patients Disproportionately Undergo Surgery

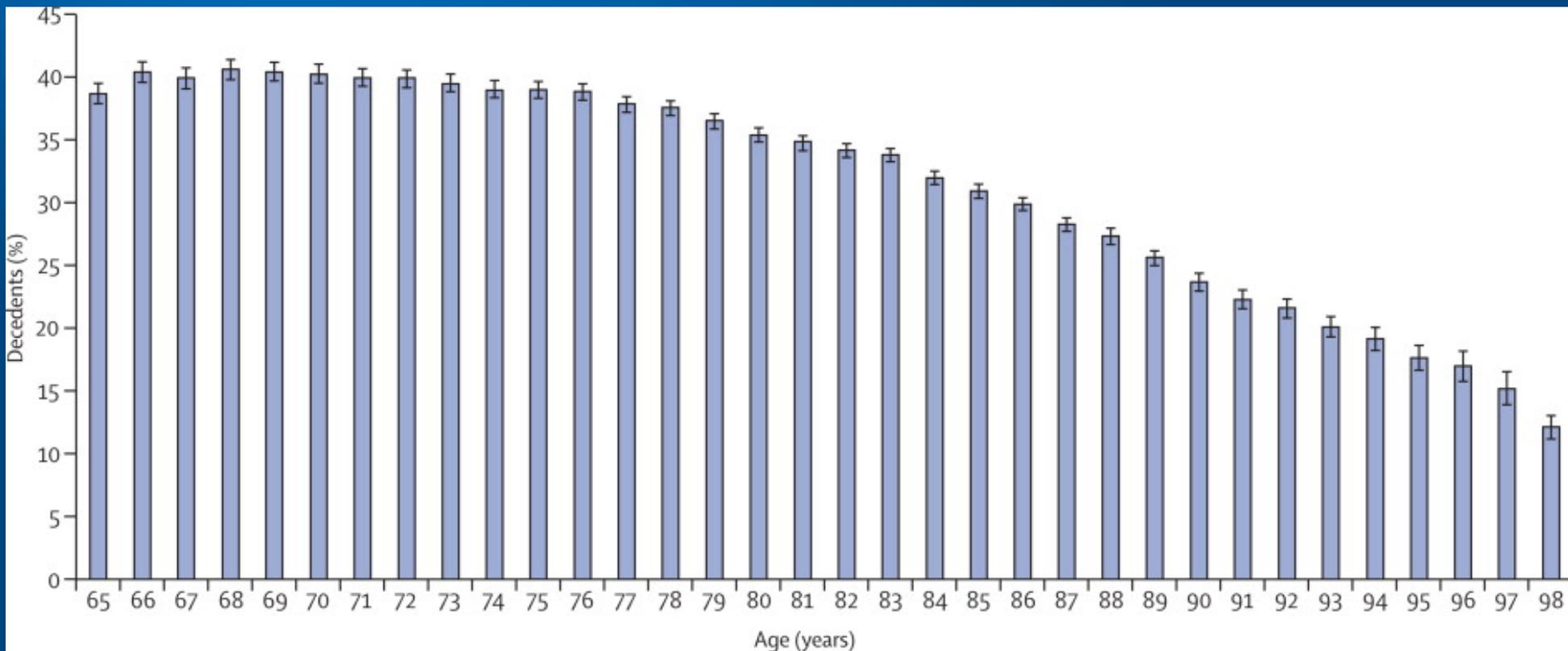
Patients  $\geq 65$  compromise  $< 20\%$  of the US population but account for  $\sim 50\%$  of the surgical population

This proportion is predicted to increase rapidly with the ongoing aging of the US population.

Fig. 1 Number of surgical procedures within age categories



# Percentage of elderly Medicare decedents who underwent at least one surgical procedure in their last year of life by age



Kwok et al. The intensity and variation of surgical care at the end of life: a retrospective cohort study. *Lancet*. 2011 Oct 15;378(9800):1408-13.

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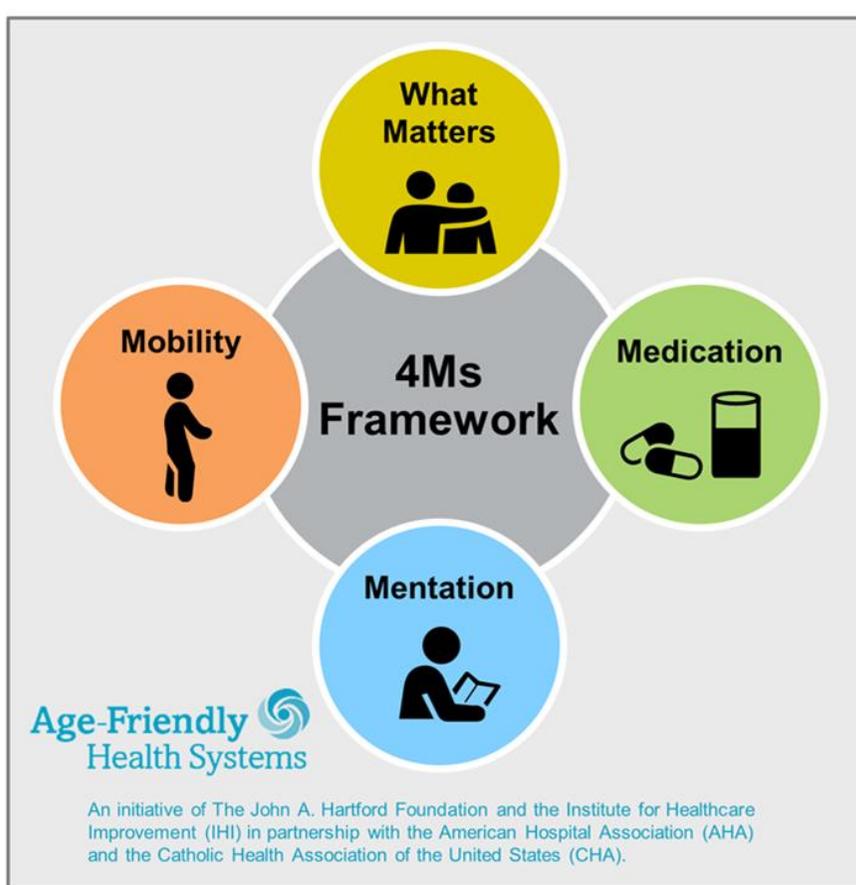
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# UR Medicine is also Aging 2021 Encounters

Visit Type	Total Encounters	Encounters Age ≥ 65 years Number	Encounters Age ≥ 65 years Percent
<b>Highland Hospital</b>			
Inpatient	19,702	7096	36%
Outpatient	185,016	47,061	25%
<b>Strong Memorial Hospital</b>			
Inpatient	42,232	13,250	31%
Outpatient	1,353,229	418,122	30%



# Call to Action: Age Friendly Health Systems



For related work, this graphic may be used in its entirety without requesting permission.  
Graphic files and guidance at [ihi.org/AgeFriendly](http://ihi.org/AgeFriendly)

## What Matters

Know and align care with each older adult's specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

## Medication

If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

## Mentation

Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

## Mobility

Ensure that older adults move safely every day in order to maintain function and do What Matters.

# American College of Surgeons: Geriatric Surgery Verification Process



Optimal Resources for  
**Geriatric Surgery**

2019 Standards

[facs.org/geriatrics](https://facs.org/geriatrics)

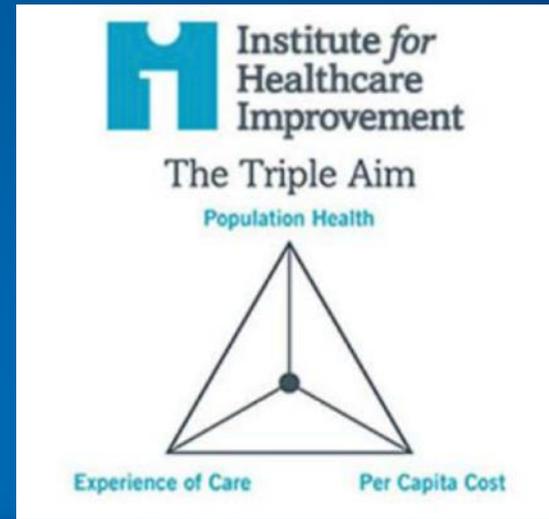


Established by American College of Surgeons in consultation with multiple stakeholders & in accordance with AFHS practices

Sets 32 standards for best practices for perioperative care of older adults

- Preoperative Care
- Perioperative Care
- Postoperative Care
- Quality improvement

# Perioperative Space



# Unique risks of surgery in Older Adult Patients

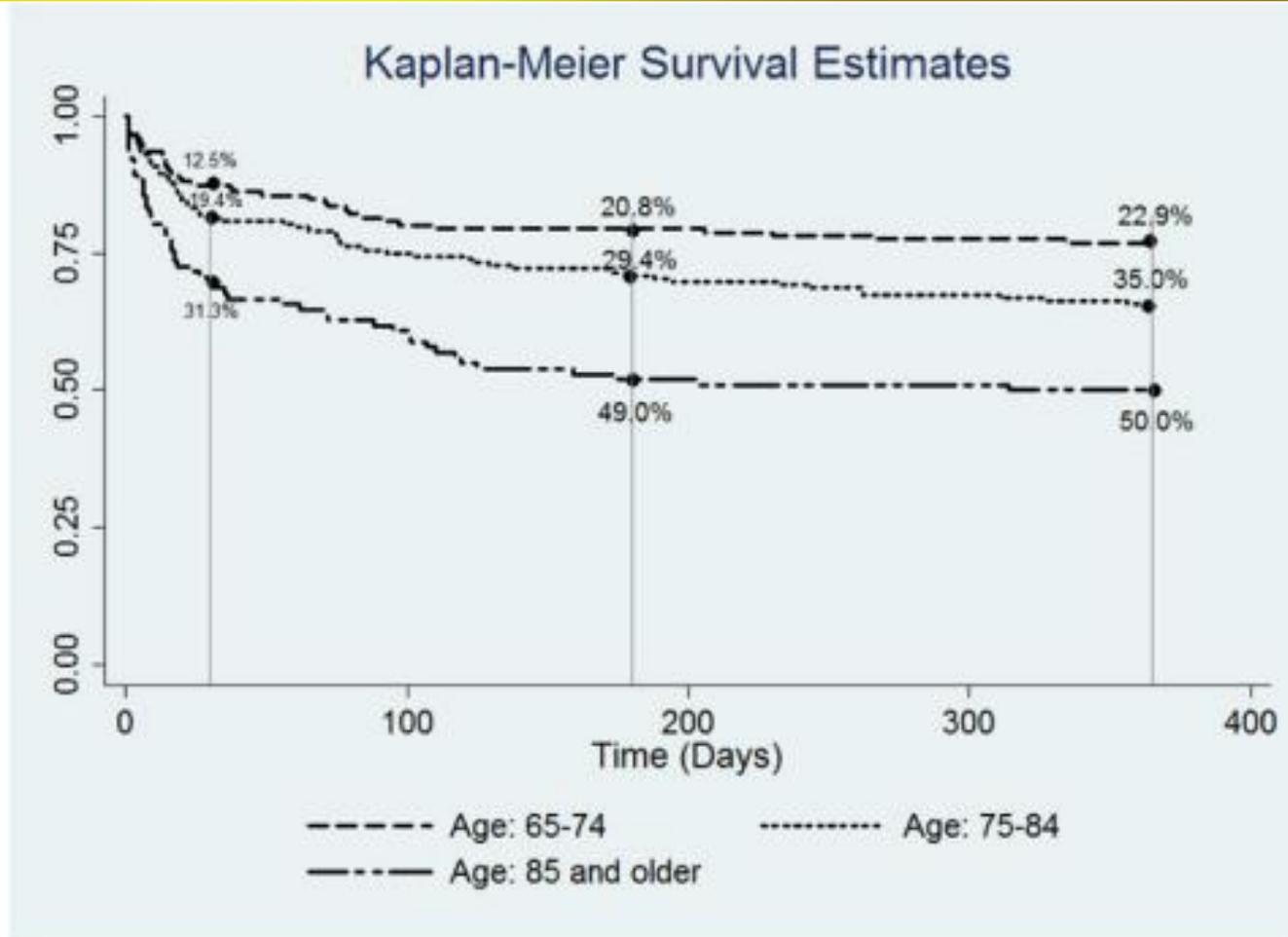


Figure 1. One Year Survival for Older Adults After Major Emergency Abdominal Surgery Stratified by Age

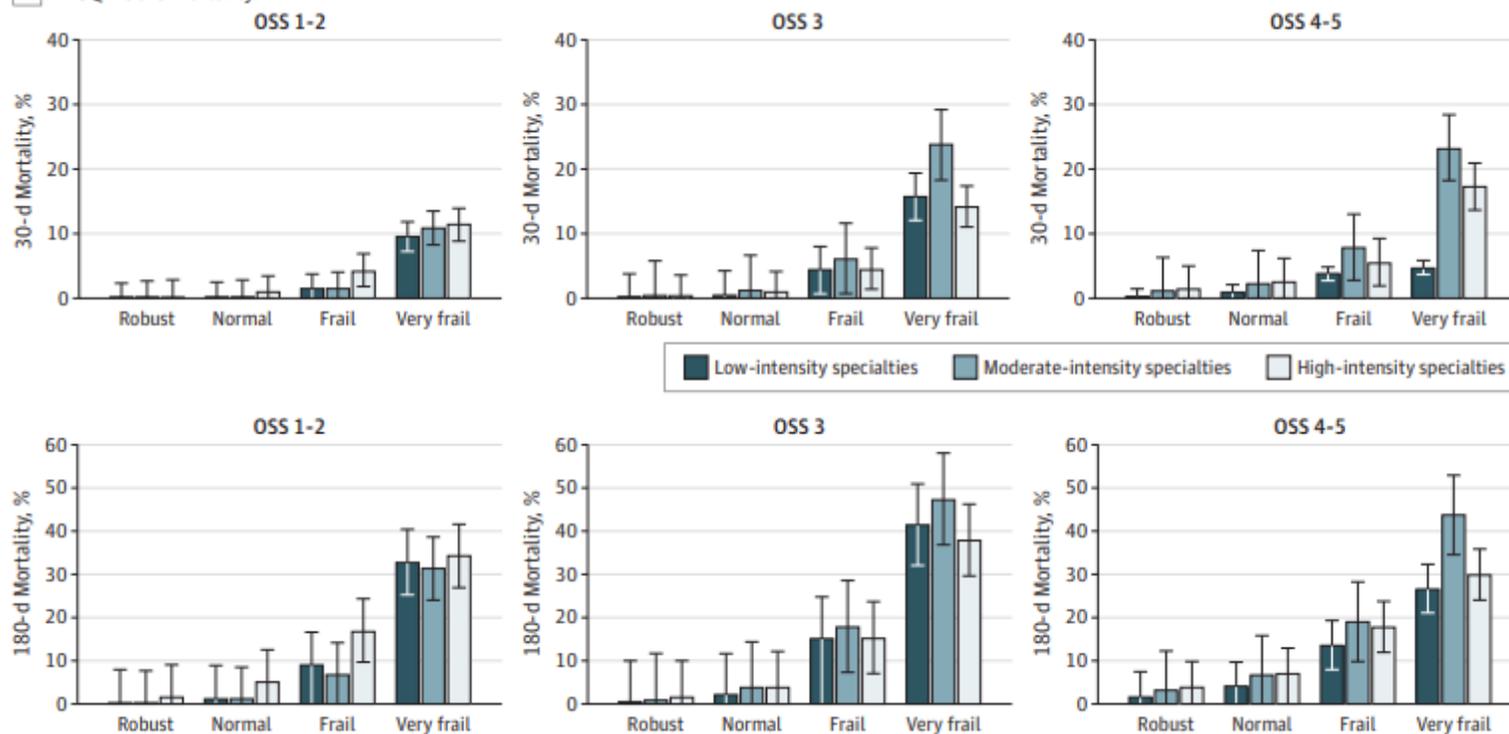
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# Association Between Patient Frailty and Postoperative Mortality Across Multiple Noncardiac Surgical Specialties

Elizabeth L. George, MD, MSc; Daniel E. Hall, MD, MDiv, MHSc; Ada Youk, PhD; Rui Chen, MS; Aditi Kashikar, MBBS; Amber W. Trickey, PhD; Patrick R. Varley, MD; Paula K. Shireman, MD, MS, MBA; Myrick C. Shinall Jr, MD, PhD; Nader N. Massarweh, MD, MPH; Jason Johanning, MD, MS; Shipra Arya, MD, SM

**B** VASQIP 30-d mortality



**CONCLUSIONS AND RELEVANCE** In this study, frailty was associated with postoperative mortality across all noncardiac surgical specialties regardless of case-mix. Preoperative frailty assessment could be implemented across all specialties to facilitate risk stratification and shared decision-making.



# Health Care Costs Increase with Level of Delirium Severity

JAMA Surgery | Original Investigation

## One-Year Medicare Costs Associated With Delirium in Older Patients Undergoing Major Elective Surgery

Ray Yun Gou, MA; Tammy T. Hsieh, MD, MPH; Edward R. Marcantonio, MD, SM; Zara Cooper, MD, MSc; Richard N. Jones, ScD; Thomas G. Trivison, PhD; Tamara G. Fong, MD, PhD; Ayesha Abdeen, MD; Jeffrey Lange, MD; Brandon Earp, MD; Eva M. Schmitt, PhD; Douglas L. Leslie, PhD; Sharon K. Inouye, MD, MPH; for the SAGES Study Group

**IMPORTANCE** Delirium is a common, serious, and potentially preventable problem for older adults, associated with adverse outcomes. Coupled with its preventable nature, these adverse sequelae make delirium a significant public health concern; understanding its economic costs is important for policy makers and health care leaders to prioritize care.

**OBJECTIVE** To evaluate current 1-year health care costs attributable to postoperative delirium in older patients undergoing elective surgery.

**DESIGN, SETTING, AND PARTICIPANTS** This prospective cohort study included 497 patients from the Successful Aging after Elective Surgery (SAGES) study, an ongoing cohort study of older adults undergoing major elective surgery. Patients were enrolled from June 18, 2010, to August 8, 2013. Eligible patients were 70 years or older, English-speaking, able to communicate verbally, and scheduled to undergo major surgery at 1 of 2 Harvard-affiliated hospitals with an anticipated length of stay of at least 3 days. Eligible surgical procedures included total hip or knee replacement; lumbar, cervical, or sacral laminectomy; lower extremity arterial bypass surgery; open abdominal aortic aneurysm repair; and open or laparoscopic colectomy. Data were analyzed from October 15, 2019, to September 15, 2020.

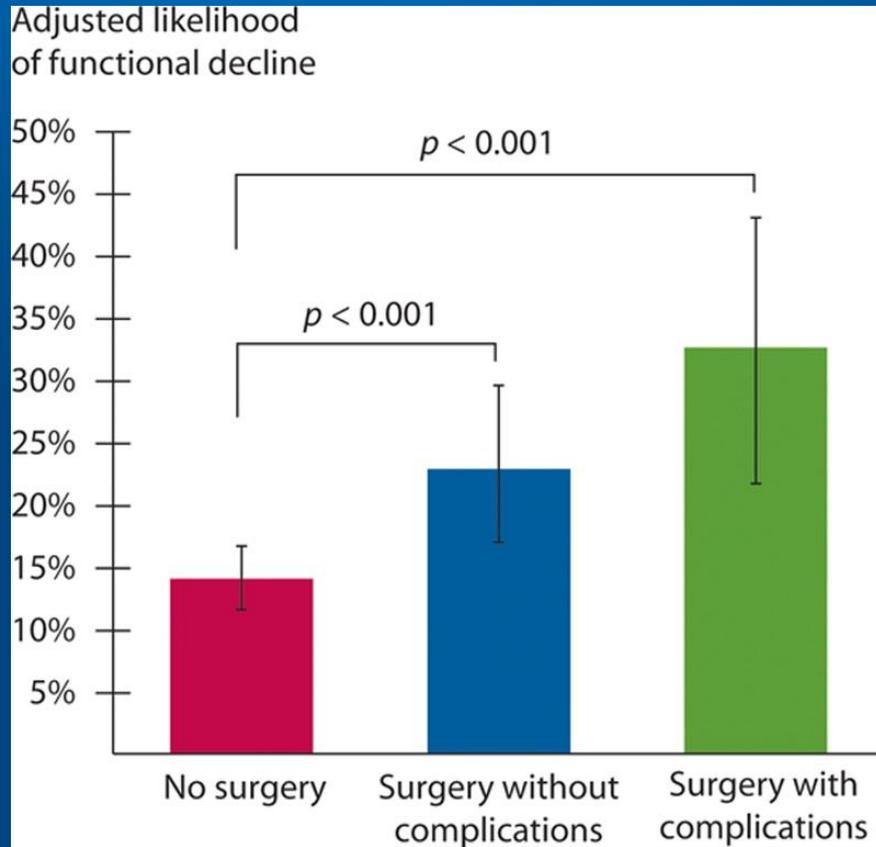
**CONCLUSIONS AND RELEVANCE** These findings suggest that the economic outcomes of delirium and severe delirium after elective surgery are substantial, rivaling costs associated with cardiovascular disease and diabetes. These results highlight the need for policy imperatives to address delirium as a large-scale public health issue.

JAMA Surg. doi:10.1001/jamasurg.2020.7260  
Published online February 24, 2021.

+ Invited Comment

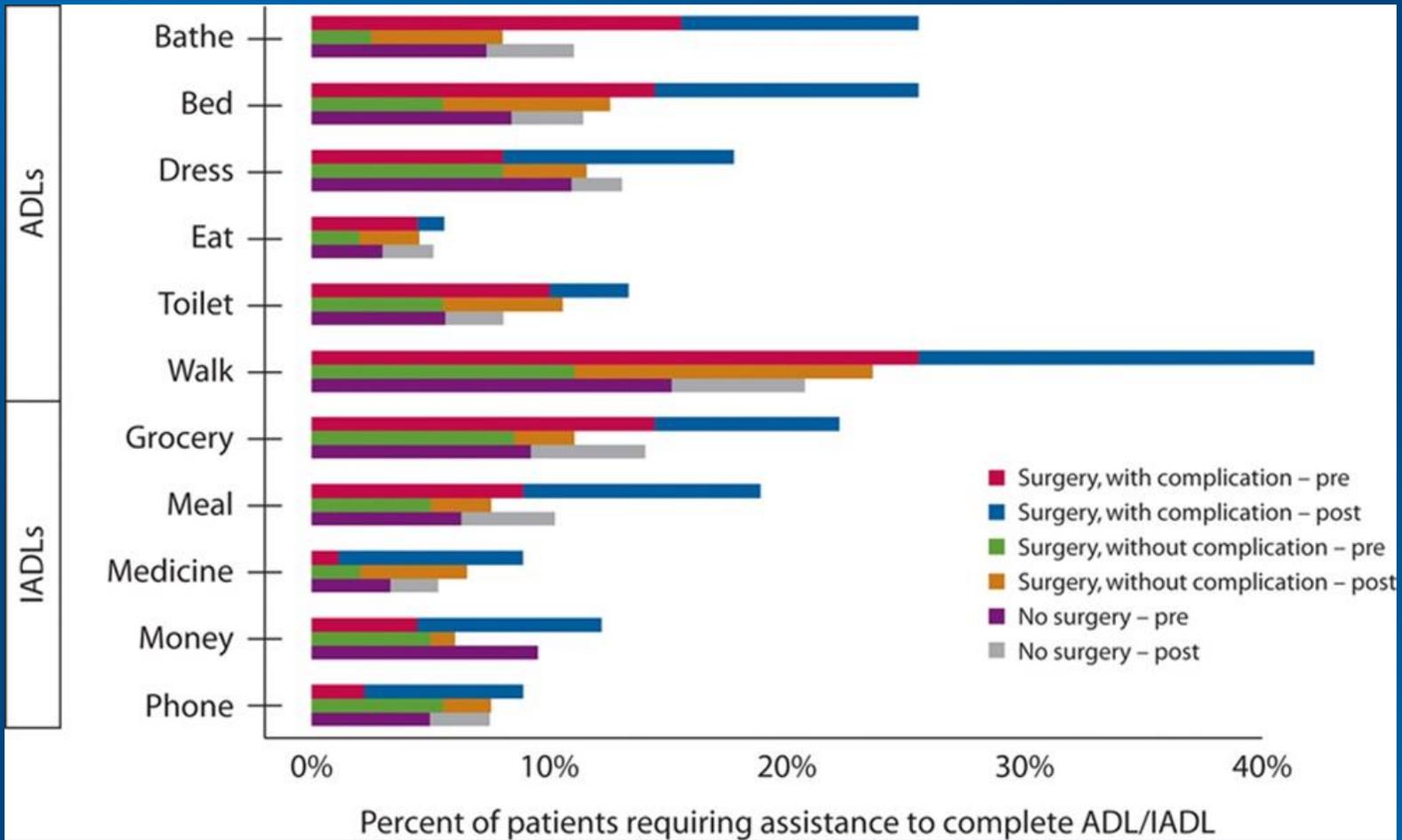
+ Supplemental con

# High Risks of Functional and Cognitive Decline After Surgery



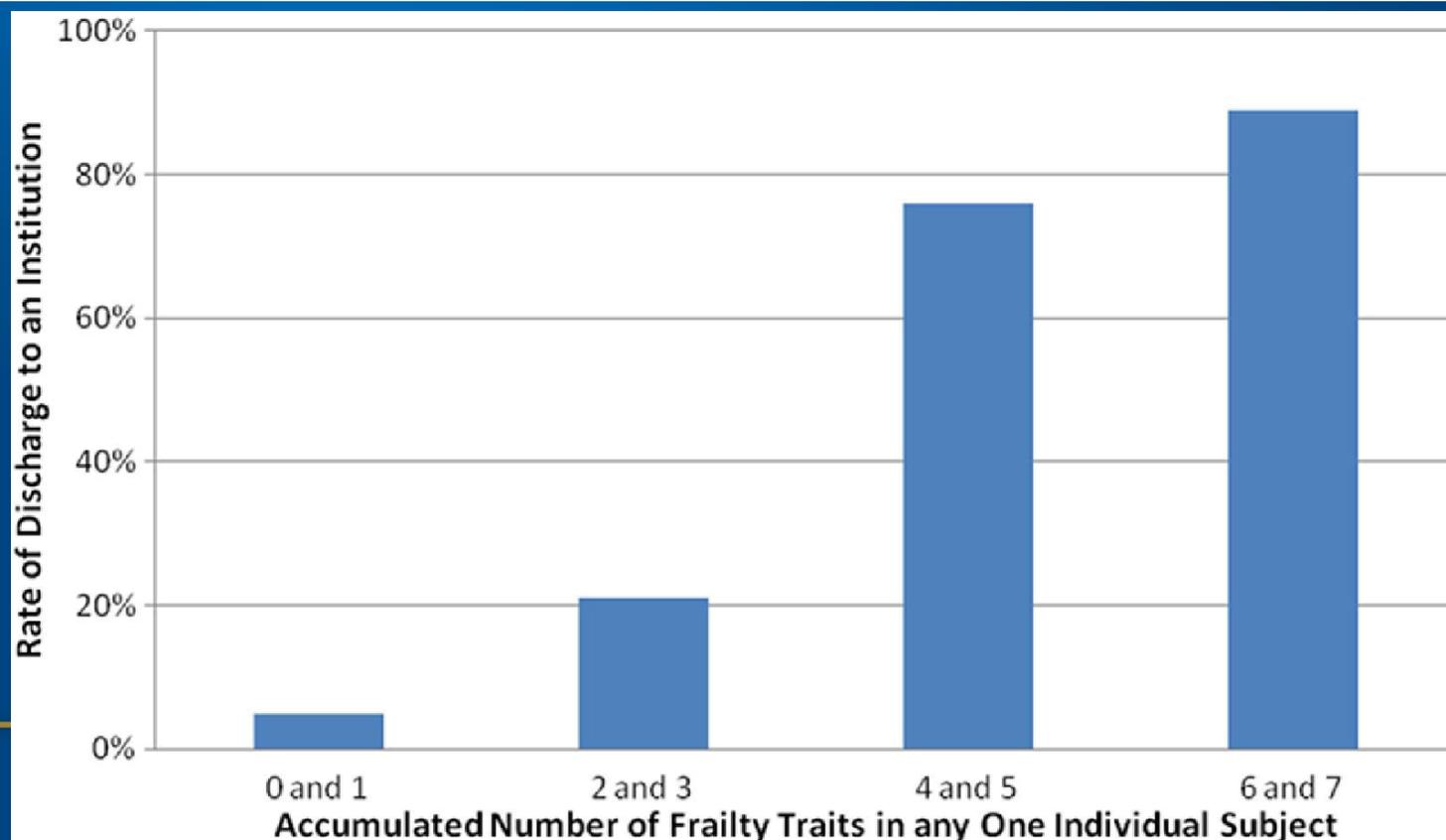
- Patients  $\geq 65$ yo who underwent high risk colorectal surgery
- Pre and postoperative surveys of
  - ADLS + IADLs – functional limitations (none, mild, moderate, severe)
  - Cognitive impairment (normal, mild, moderate to severe)
- On average surveyed  $\sim 10$  months postop (SD 6.3 months)

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# Accumulated Frailty Characteristics Predict Postoperative Discharge Institutionalization in the Geriatric Patient

Thomas N Robinson, MD, FACS, Jeffrey I Wallace, MD, Daniel S Wu, MD, Arek Wiktor, MD, Lauren F Pointer, MS, Shirley M Pfister, RN, MS, NP, Terra J Sharp, NP-C, Mary J Buckley, NP, Marc Moss, MD



# Case Presentation

73 y/o M

- CHF due to ischemic cardiomyopathy, s/p LVAD 2017
- CKD, stage 3
- History of colon cancer s/p abdominoperineal resection with end colostomy (2012) and recurrence in his lungs, s/p radiation and chemo (2018)
- Chronic pelvic abscess due to surgery
- Functionally – lives at home with wife, always fatigued, minimal activity without assistance
- Multiple hospitalizations in past year



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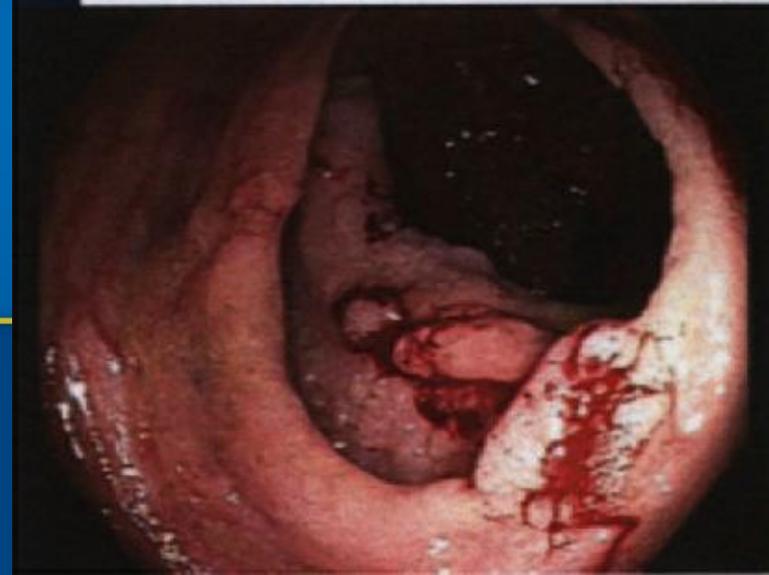
# Case Presentation

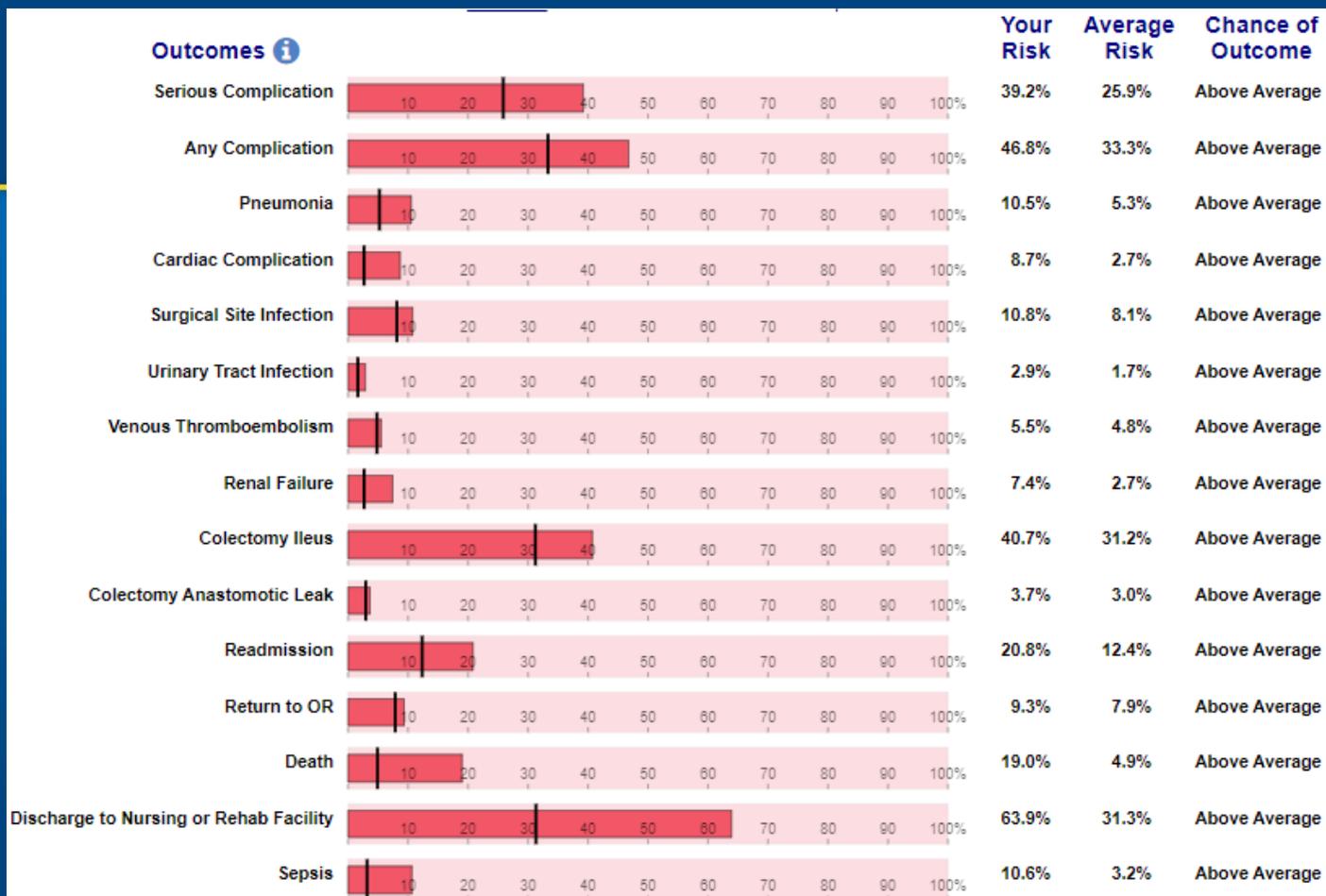
Mass discovered in cecum ~3cm

Pathology shows tubular adenoma with  
HGD

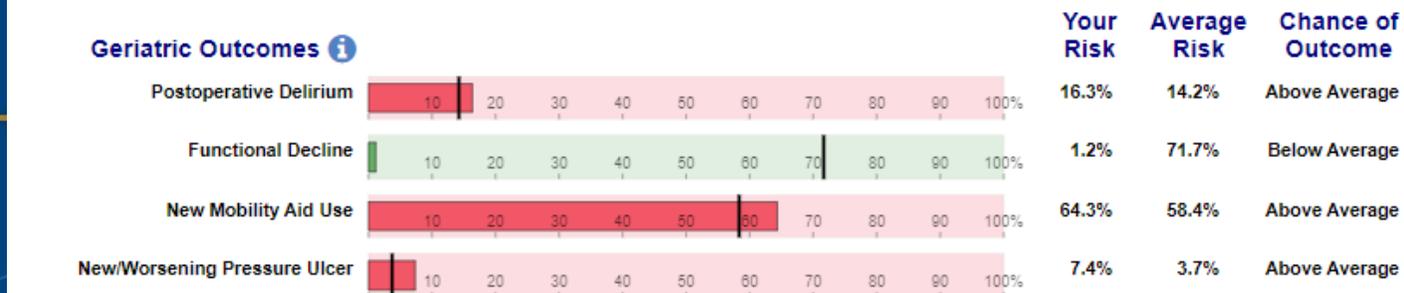


mass





Predicted Length of Hospital Stay: 11.5 days



 Other Appropriate Potential Surgical Options Are Available and Should Be Discussed

# Evolution of Shared Decision Making



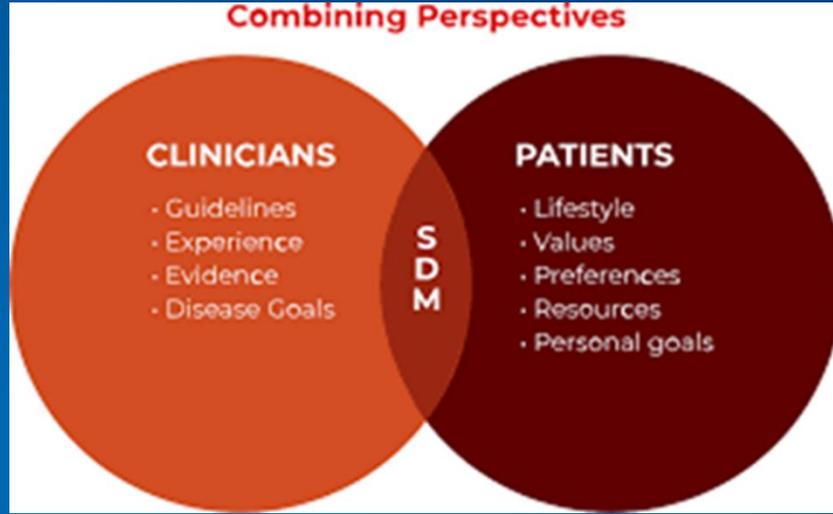
President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research

President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Making Health Care Decisions: A Report on the Ethical and Legal Implications of Informed Consent in the Patient-Practitioner Relationship: Volume One: Report. *MEDICINE of the HIGHEST ORDER*  
Published October 1982. Accessed September 28, 2022.

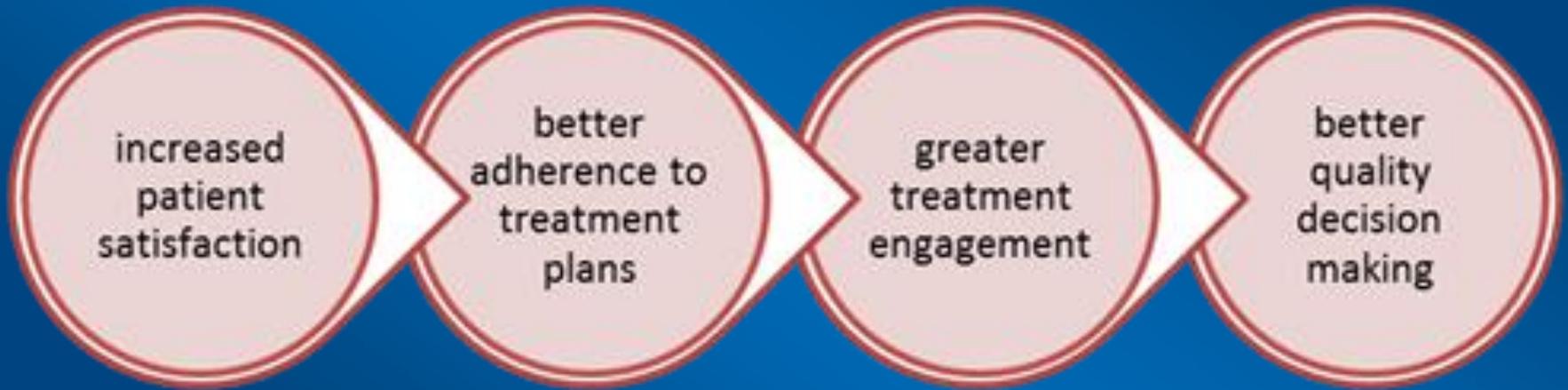


# Shared Decision Making

- Seek your patient's participation
- Help your patient explore and compare treatment options
- Assess your patient's values and preferences
- Reach a decision with your patient
- Evaluate your patient's decision



# Why Does SDM Matter?



# Surgeons Views on SDM

*"I think the downside of [SDM] is that the idea that you can actually really make an informed decision about, you know, a surgical technique never having done it, never having seen it, never knowing anything about [it] until I tell you that you have this diagnosis ... sometimes people make decisions based on kind of something they perceive to make sense about the condition, and they're just sort of hooked up on some little facet of it that is just making sense to them because of some preconceived notion that's perhaps totally irrelevant. They can probably make some poor decisions."*

*"I think all patients are different, and I think some of them come to a surgeon wanting them to tell them what to do, so I am not sure [SDM] is the right thing for all patients, but there are certainly some patients that would feel better ... having the choice. But I am not sure that is all patients."*

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Kannan S, Seo J, Riggs KR, Geller G, Boss EF, Berger ZD. Surgeons' Views on Shared Decision-Making. J Patient Cent Res Rev. 2020 Jan 27;7(1):8-18.  
PMID: 32002443; PMCID: PMC6988707

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## Surgeon Use of Shared Decision-making for Older Adults Considering Major Surgery A Secondary Analysis of a Randomized Clinical Trial

Nathan D. Baggett, MD; Kathryn Schulz, DPhil; Anne Buffington, MPH; Nicholas Marka, MS; Bret M. Hanlon, PhD; Christopher Zimmermann, MD; Jennifer Tucholka, PA; Dan Fox, BS; Justin T. Clapp, PhD, MPH; Robert M. Arnold, MD; Margaret L. Schwarze, MD, MPP

- 378 surgical consultations of major surgery in older adults were analyzed
- Intervention: patients had a question prompt list that they could ask a surgeon
- The 5-domain Observing Patient Involvement in Decision-making (OPTION5) score (range, 0-100, with higher scores indicating greater shared decision-making) was used to measure shared decision-making
- Individual surgeon use of shared decision-making varied greatly, with a lowest median score of 10 (IQR, 10-20) to a high of 65 (IQR, 55-80).
- Lower-performing surgeons had little variation in OPTION5 scores, whereas high-performing surgeons had wide variation.
- Use of shared decision-making increased when surgeons appeared reluctant to operate (effect estimate, 7.40; 95% CI, 2.60-12.20; P = .003).

# Systematic review of shared decision-making in surgery

Table 2

Overview of questionnaires or instruments to measure shared decision-making and their results

Use of SDM	
Shared decision-making scored by patients and/or surgeons (subjectively)	
Control Perception Scale questionnaire	Meta-analysis: 36 (95% c.i. 32 to 40, range 0–100)% <sup>20–24,26–34,36,41,42,44,47,49–51</sup>
Description of 4 decision-making strategies	33.0% of patients (357 of 1081) matched with SDM (range 0–100%) <sup>35</sup> 9.8% of patients (18 of 184) matched with SDM (range 0–100%) <sup>43</sup> 23% of surgeons (16 of 70) matched with SDM (range 0–100%) <sup>43</sup>
Asking surgeons if they always use SDM	36.9% of surgeons (38 of 103) always use SDM (range 0–100%) <sup>48</sup>
SDM-Q-9 questionnaire	93 (i.q.r. 79–100, range 0–100)% <sup>46</sup> 74 (s.d. 23, range 0–100)% <sup>51</sup>
Perceived Involvement in Care Scale	Patients aged 67–74 years: 62 (s.d. 25.0, range 0–100)% <sup>39</sup> Patients aged >75 years: 54% (s.d. 27.4, range 0–100)% <sup>39</sup>
SDM-Q-Doc questionnaire	84 (i.q.r. 73–92, range 0–100)% <sup>46</sup>
Physicians' participatory decision-making style	65 (s.d. 29.89, range 0–100)% <sup>45</sup>
Shared decision-making scored by independent observers (objectively)	
12-item OPTION instrument	31 (s.d. 11, range 0–100)% <sup>46</sup> 7 (range 0–100)% <sup>48</sup>
Decision Analysis System for Oncology	39 (s.d. 6.4, range 0–100)% <sup>37</sup>



# Tools available to help with SDM

## Patient facing tools

- Decision Aids
- Patient navigation tools

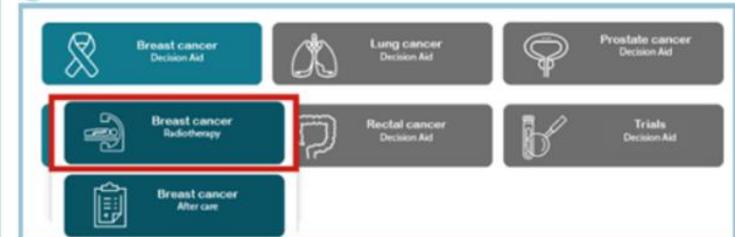
## Provider facing tools

- Risk calculators (e.g. NSQIP risk calculator)
- Risk indices (e.g. modified frailty index)
- Prognostic nomograms (e.g. geriatric Trauma Outcomes score)
- Communication tools (e.g. Best Case/Worst Case)

### Patient decision aid



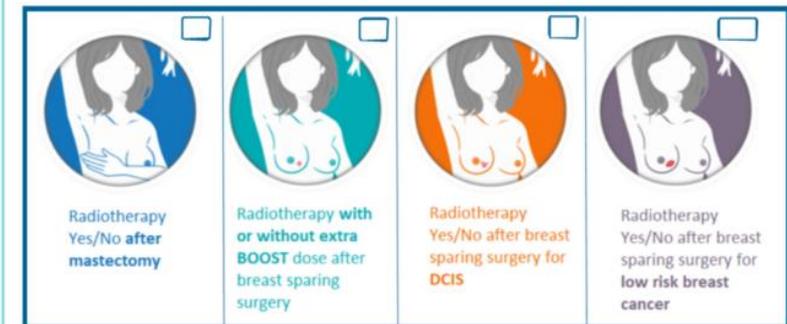
- 1 Go to [www.beslissamen.nl](http://www.beslissamen.nl)
- 2 Select breast cancer decision aid
- 3 Select breast cancer radiotherapy (see below)



- 4 Read the user conditions and give consent
- 5 Login code:.....

Important!! On the back of this card you will find which path you should follow in the decision aid!

In the decision aid you will be asked to choose 1 out of these 4 paths. **Choose the figure that is marked by your clinician.**



For questions on the decision aid or the BRASA-study:

✉ [brasa@nki.nl](mailto:brasa@nki.nl) ☎ 020 xxxxxxxx

# Tools available to help with SDM

## Physician-Facing Decision Support

Risk calculators

Risk indexes

Prognostic nomograms

## Shared Decision Making

Establish the need to make a decision

Elicit patient goals and values

Match treatment to patient goals

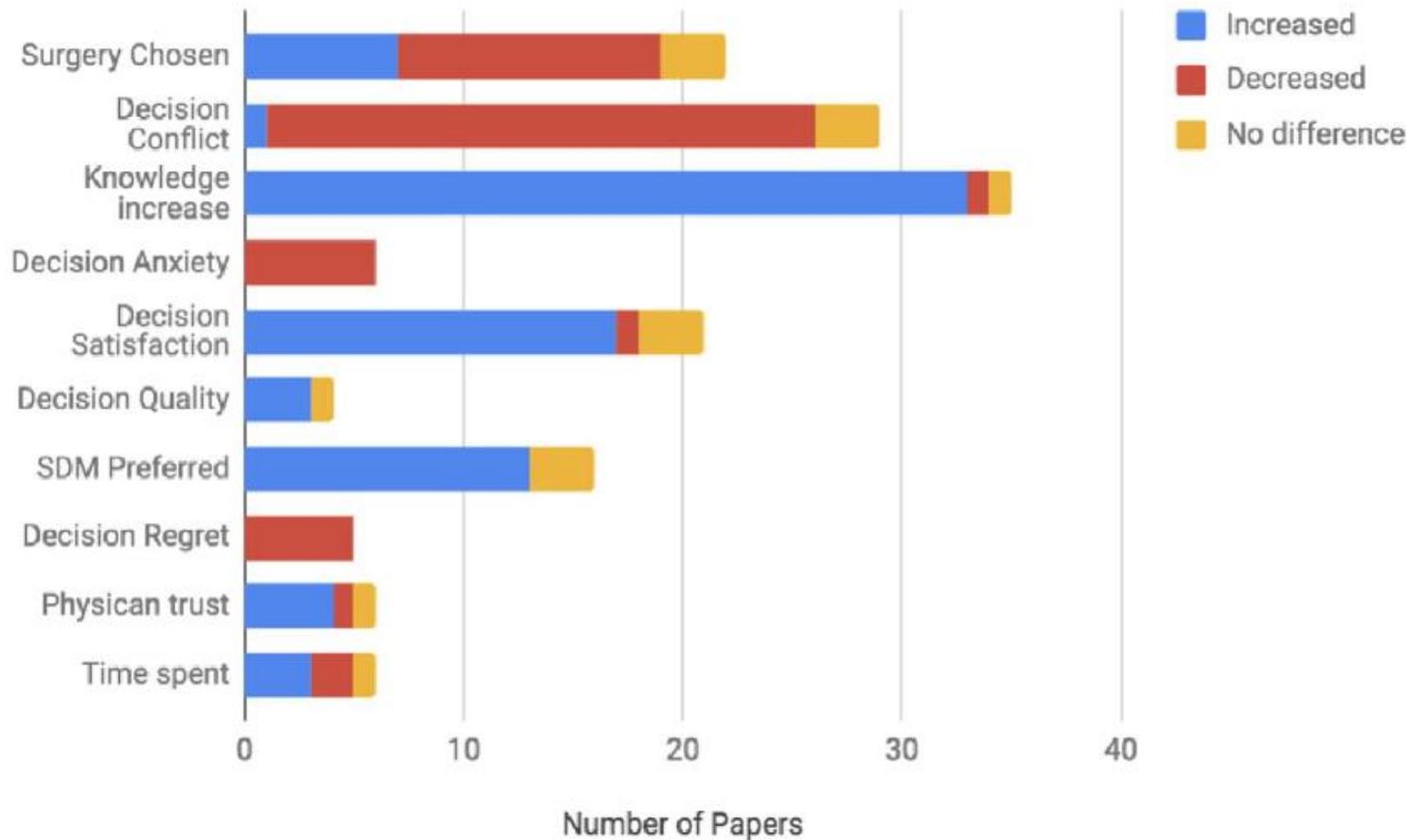
## Patient-Facing Decision Support

Patient navigation

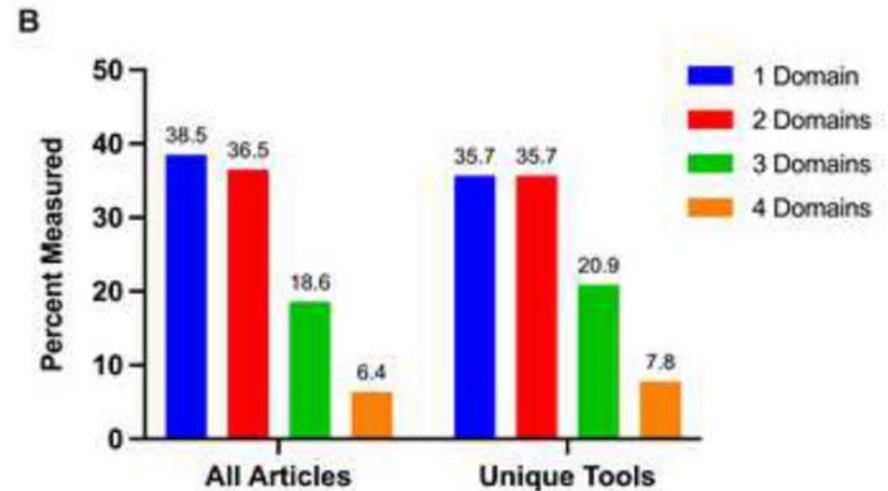
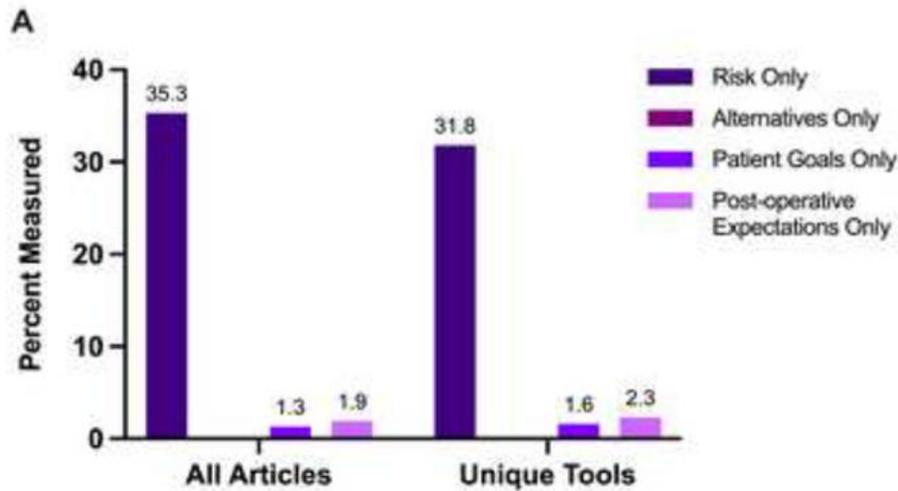
Decision aids

Values clarification

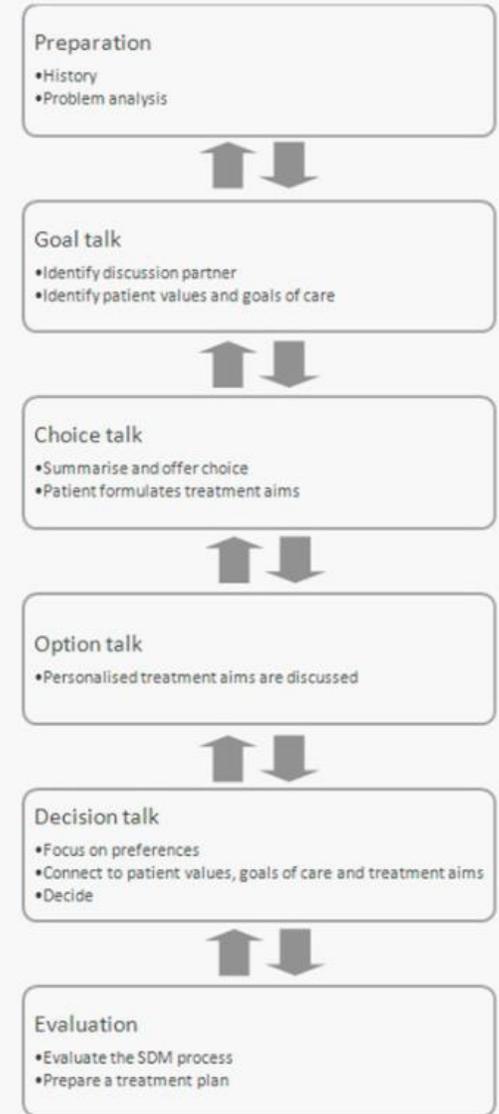
# Do Decisional Aids Help in SDM?



# Scoping Review of Provider Facing SDM Tools



# SDM Frameworks in Complex Clinical Situations



M.H.J. van de Pol, et al. "Expert and patient consensus on a dynamic model for shared decision-making in frail older patients." *Patient Educ Couns*, 99 (6) (2016), pp. 1069-1077

Kruser JM, et al. "Best Case/Worst Case": Training Surgeons to Use a Novel Communication Tool for High-Risk Acute Surgical Problems. *J Pain Symptom Manage*. 2017 Apr;53(4):711-719.e5. doi: 10.1016/j.jpainsymman.2016.11.014. Epub 2017 Jan 4. PMID: 28062349; PMCID: PMC5374034.

# Barriers and Facilitators to SDM

Factor as a barrier/facilitator	Barriers (number of studies in which this factor was identified as a barrier) [reference number]	Facilitators (number of studies in which this factor was identified as a facilitator) [reference number]
<b>Knowledge</b>		
Lack of awareness/awareness	0	0
Lack of familiarity/familiarity	5 [29, 37, 39, 44, 49]	0
Forgetting	1 [41]	Not applicable
<b>Attitude</b>		
<b>Lack of agreement with specific components of shared decision-making/agreement with specific components of shared decision-making</b>		
• Interpretation of evidence	1 [29]	
• Lack of applicability/applicability		4 [29, 35, 51, 54, 55]
○ Characteristics of the patient	12 [21, 29, 34, 37, 41, 43, 47-49, 53-55, 59]	3 [37, 46, 51]
○ Clinical situation	12 [11, 29, 34, 36-38, 47-49, 53-55, 59]	2 [42, 50]
• Asking patient about his/her preferred role in decision-making	7 [11, 38, 40, 42, 43, 50, 59]	1 [34]
• Asking patient about support or undue pressure	0	0
• Asking about values/clarifying values	0	1 [42]
• Not cost-beneficial/Cost-beneficial	3 [21, 29, 45]	1 [29]
• Lack of confidence in the developers/Confidence in the developers	0	
<b>Lack of agreement in general/Agreement in general</b>		
• "Too cookbook" – too rigid to be applicable	2 [29, 48]	0
• Challenge to autonomy	1 [11]	0
• Biased synthesis	1 [29]	0
• Not practical/Practical	2 [29, 54, 55]	6 [29, 33, 41, 54-57]
• Total lack of agreement with using the model (not specified why)	2 [47, 50]	0
<b>Lack of expectancy/expectancy</b>		
• Patient's outcome	1 [33]	10 [33, 34, 37, 42, 46, 50-52, 54-56]
• Process expectancy	1 [56]	11 [11, 29, 33, 34, 36, 41, 42, 50, 51, 54, 55, 57]
• Feeling expectancy	0	0
Lack of self-efficacy/Self-efficacy	6 [21, 34, 37, 48, 50, 53]	0
Lack of motivation/Motivation	4 [21, 37, 51, 52]	15 [33, 35, 36, 38, 39, 41-44, 47, 49, 51, 52, 54, 55, 57, 58]
<b>Behaviour</b>		
<b>External factors</b>		
• Factors associated with patient		
○ Preferences of patients	9 [21, 39, 41, 42, 45, 47, 48, 52, 54, 55]	4 [34, 39, 42, 52]
• Factors associated with shared decision-making as an innovation		
○ Lack of triability/Triability	2 [29, 49]	1 [29]
○ Lack of compatibility/Compatibility:	2 [29, 33]	2 [29, 33]
○ Complexity/Ease of use	3 [21, 29, 45]	2 [29, 56]
○ Lack of observability/Observable	1 [29]	1 [29]
○ Not communicable/Communicable	3 [29, 38, 49]	0
○ Increase uncertainty/Decrease or manage one's own uncertainty	1 [45]	1 [37]
○ Not modifiable/Modifiable	1 [37]	1 [29]
• Factors associated with environmental factors		
○ Time pressure/Save time	18 [29, 34-39, 41-43, 47, 48, 50, 51, 53-57, 60]	3 [29, 42, 54, 55]
○ Lack of resources/Resources	7 [33, 47, 50, 52]	1 [50]
○ Organizational constraints/Organizational support	0	0
○ Lack of access to services/Access to services	2 [41, 60]	0
○ Lack of reimbursement/Reimbursement	0	0
○ Perceived increase in malpractice liability/Perceived decrease in malpractice liability	2 [47, 48]	0
○ Sharing responsibility with Patient	Not applicable	3 [37, 42, 51]

# Case Presentation

73 y/o M with CHF, LVAD, CKD 3, poor functional status, complex abdomen with a polyp vs new cancer resulting in bleeding

- Assess options
- Educate the patient and caregiver on the potential options and risks/benefits of each
- Assess patient goals
- Involve other care members
- Decide on a treatment plan together or a time to revisit decision making
- Reaffirm decision making



# How Do We Improve This?

## Project Goals

Improve the overall education around the surgical shared decision making process for older adults with surgeons and patients

- Help patients understand surgical shared decision making and empower them to engage in the process
- Educate surgeons on issues specific to older adults and medically frail patients and how to approach these in surgical shared decision making conversations
- Develop a communication tool to help surgeons navigate this process in older adults

# Focus Groups

- Goal to understand how patients, residents, surgeons and other providers approach SDM and how they learned this
  - Geriatrics, Ethics, Surgeons, Critical Care physicians, Surgery residents and patients
- Did they feel SDM was important and why?
- What was important to address in this process, particularly in frail patients?
- What are barriers and facilitators to this process?
- What resources do they use for this process?

# Focus Group Results

## Importance of SDM

- Culture of collaboration:
  - *"It's most important to get an understanding of, of what the patient and family understands, what are the choices and then step two would be where does that fall within their value system?"*
- Avoiding harmful care:
  - *"The trust in between the providers and the patient, which in my opinion also affects the results of the surgery ...because, you know, if they don't have a good experience from those important parts of their care they then translate it to everything."*

## Components of SDM

- Defining Outcomes
  - *"The surgery is just the first part of the whole experience. And like everyone is saying the recovery the months, days, months, and years afterwards are part of that same kind of package."*

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# Focus Group Results

## Barriers

- Urgency of condition
  - *"I have some trepidation about trying to make these conversations, these sometimes life and death decisions with somebody you've just met and under time pressure."*

## Age Specific Considerations

- Companions to conversations
- Understanding patient values
  - *"You're 95 and you have a lot of comorbidities that might mean a longer recovery period and there might be some pain and it might be a bit bumpy, you know, for weeks or maybe months after your procedure. It is the best option for giving you that more time and quality that you want. Is that how do, how does that sit with you? You know, I think saying something like that and really kind of giving him a good sense that there's a, it's gonna be a bumpy ride and you may, and you may not be back to your baseline for a while, or if ever,... kind of just those broad strokes"*

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# Focus Group Results

Faculty and residents tended to have similar common themes, but these differed from patient perspectives.

- This may allow better alignment provider/patient *expectations*, even when *priorities* differ

Patients in general were less likely to address themes of barriers or components, but offered many suggestions to improvements

Both patients and providers had less thought about preparation for SDM, and quotes often addressed uncertainty about this

Age related concerns were very often related to caregivers, both as participants in SDM conversations and as important considerations for post-operative care

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# Educational Materials

## What is shared decision making?

The purpose of shared decision making is to talk about your treatment options and figure out the best plan for you. It includes talking about the surgery and other treatment options, as well as your everyday life to help understand and discuss how it might affect you.

## What to do before your appointment:

- Bring a family or trusted friend to help listen to information
- Bring something to take notes. It is okay to record the discussion as well, just ask the provider first
- Write down any questions you have so you can ask them during the visit
- Think about your goals with treatment: Is it to improve symptoms, cure your disease, or something else?
- Think about things you would never want such as a stay in a nursing home or being on a ventilator.

## Deciding if surgery is right for you?:

1. What is my main problem that needs to be treated?
2. What are my treatment options? What are the risks and benefits of these options?
3. What treatment plan does the surgeon recommend and why?
4. What would be done during the surgery?
5. What other treatments might need to happen in addition to a surgery?
6. What are the potential complications or side effects of the surgery? Will any of these be permanent? How might they affect my recovery?
7. What should I do to prepare for surgery?
8. What should I expect after the surgery, both short and long term? What do I need to do after surgery to recover?
9. How long will I stay in the hospital after surgery? Will I be going home after surgery or to rehab?
10. What should I do to prepare for coming home? Will I need help at home? What might I need help with and for how long? Are there any supplies that I will need?
11. Will the surgery affect my ability to eat, walk, strength, memory, whether I can work or do other things that are important to me?



## Other things to do:

- Ask questions about things that are unclear.
- Repeat back what your doctor said. This will ensure you both understand the issues and your decision.
- Remember: You can change your mind or adjust the plan as needed. Call the office or send a MyChart message to make another appointment if you still have questions after the visit

# Next Steps

Setting up education with the residents

Developing a communication tool for providers

Evaluating efficacy of patient handout in improving communication about SDM

# Key Takeaways

SDM is important to patient centered care

- Improved patient satisfaction and engagement with care, improved treatment adherence and education, improved trust, decreased decisional conflict

SDM is not employed as often as it should be

Tools can help

- Decision aids, communication tools, etc...

Barriers to SDM

- Time, knowledge, clinical care factors

But with practice, training and use of available tools this can be employed successfully

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# Thank you

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Geriatric Faculty Scholars Program

Patient Advisory Council

Providers from multiple specialties who collaborated on this project

Ongoing mentorship

# Questions





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