Shed MEDS: A Patient-Centered Deprescribing Trial

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Disclosure

- No conflicts of interest or disclosures

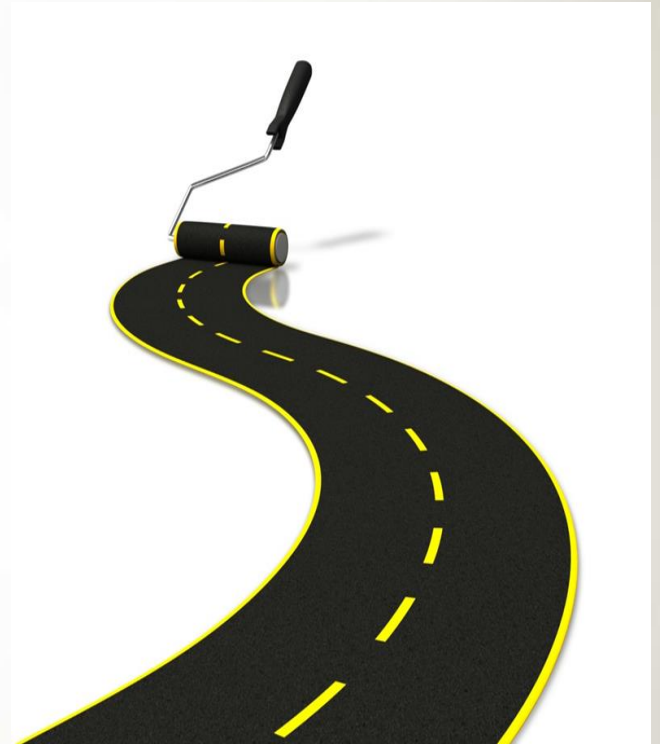# Objectives

1. Background
   a. CMS Healthcare Innovation Award
   b. Pilot Deprescribing Study
   c. Knowledge Gaps

2. Shed MEDS
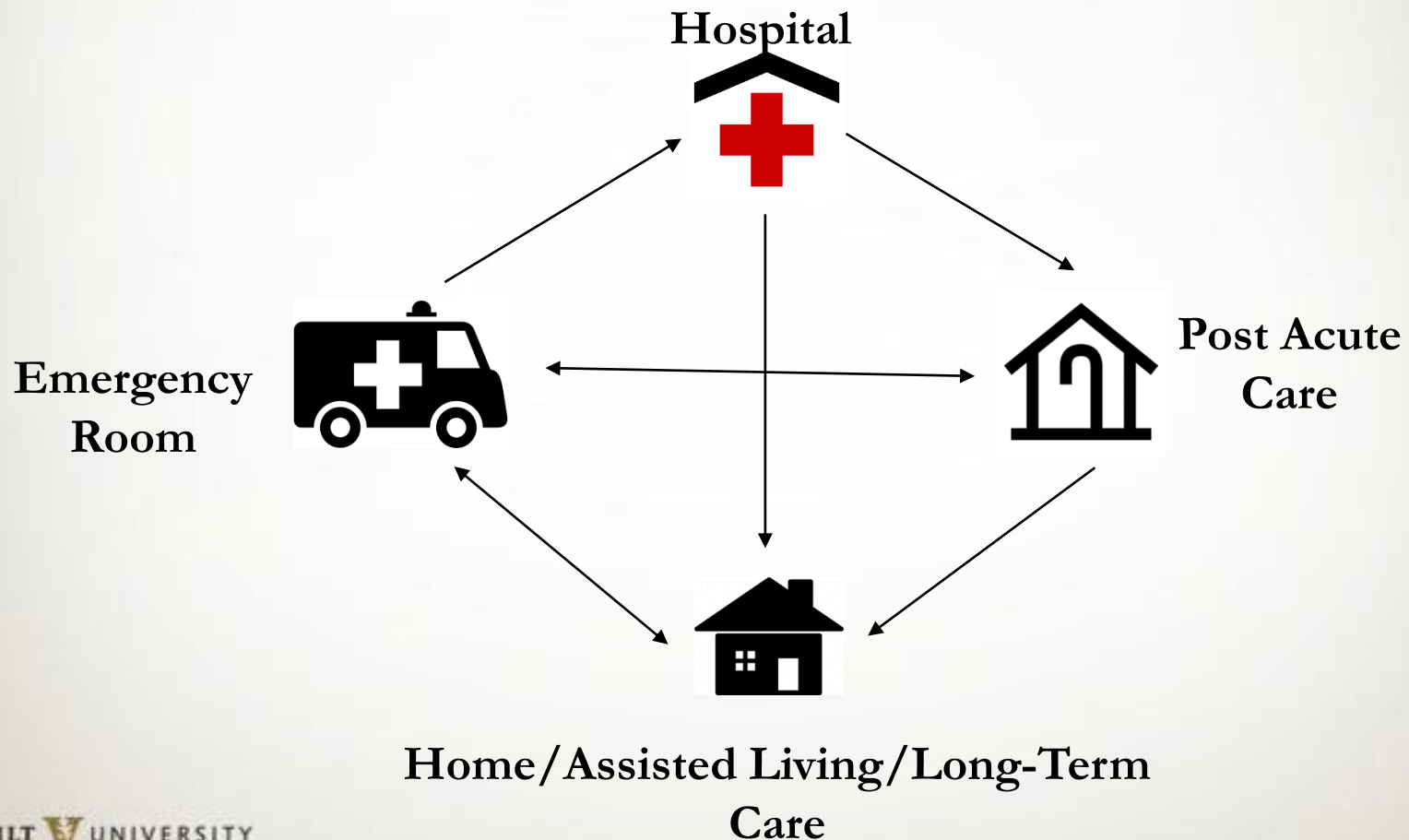   a. Study methods
   b. Lessons learned
   c. Next steps

1

Background

CMS Healthcare Innovation Award (HCIA)

Primary Aim: Reduce 30-day hospital readmissions

Hospital

Emergency Room

Post Acute Care

Home/Assisted Living/Long-Term Care

CMS HCIA Transition Model

- Improve quality and accuracy of clinical information via standardized process and use of dedicated transition advocate (RN) and pharmacist

- **Systematic identification of geriatric syndromes**

- **Medication Reconciliation at hospital discharge**

- Advance care planning
- Re-hospitalization review

CMS HCIA Takeaways

- Only modest improvement in 30-day readmission rate

- High prevalence of polypharmacy & geriatric syndromes

Bell SP, et al. J Am Geriatr Soc. 2016

Polypharmacy among VUMC Patients Discharged to SNF

- 98% meet criteria for polypharmacy

- 83% meet criteria for *hyper*-polypharmacy

- Average number at hospital discharge = 14 per patient

- Average number at SNF discharge = 15 per patient
  - Mean of 5 changes during the SNF stay

Potentially Inappropriate Meds (PIMs)	
Admission	2.2 (2.2)
Started in Hospital	1.2 (1.3)
Hospital Discharge	2.2 (2.1)

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Prescribing Cascade

Pilot Deprescribing Study

- Non-randomized w/ historical control pilot

- Medicare patients d/c to SNF

- Intervention: Pilot Deprescribing Protocol (N = 20)
  - Pharmacist / Advanced Practice Provider Led
  - Intervention ends at Hospital Discharge

- Control: Usual Care & Gold Standard Medication reconciliation (N=20)

1. **M**edication History Confirmed

↓

2. **E**valuate Medications For Deprescribing

↓

3. **D**ecide with the Patient

↓

4. **S**ynthesize & Communicate Recommendations

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Petersen AW, et al., *Ther Adv Drug Saf.* 2018.
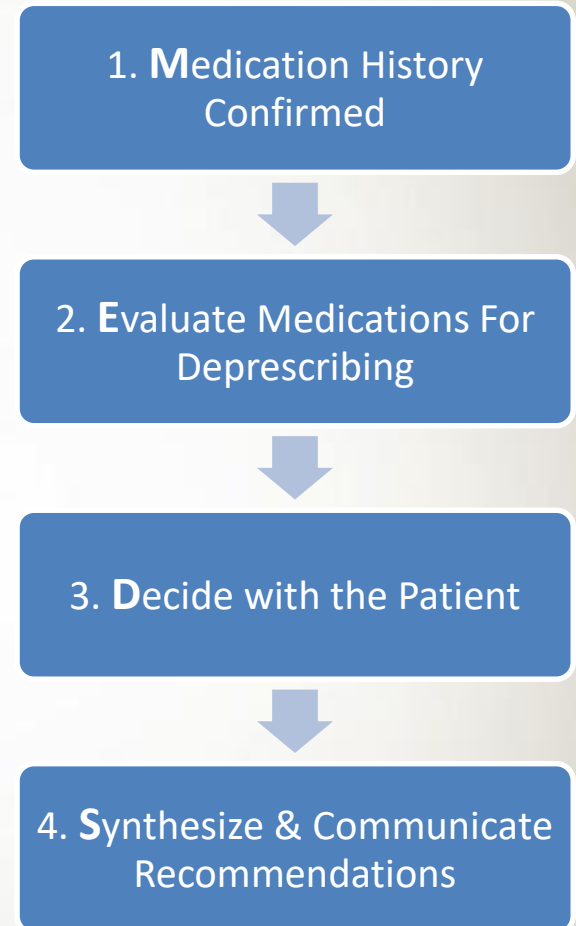
Pilot Deprescribing Study Conclusions

- Deprescribing to reduce polypharmacy is feasible in the hospital setting

- Patient engagement is a key element in the process

- Role of post-acute care may be key

- Laid the groundwork to assess effects of deprescribing on patient outcomes

Petersen AW, et al., *Ther Adv Drug Saf.* 2018.

What deprescribing interventions exist?
What are the knowledge gaps?

What Deprescribing Interventions Exist?

- Mostly in primary care settings

- Application of Beers or STOPP criteria

- Focused on specific drug classes or disease states

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What are the knowledge gaps?

- Fewer studies conducted in acute or post-acute care settings

- Impact on outcomes or effects of deprescribing is unclear

- Lack of generalizability

- Assessment of barriers and facilitators

Vasilevskis EE, et al., BMC HSR. 2019
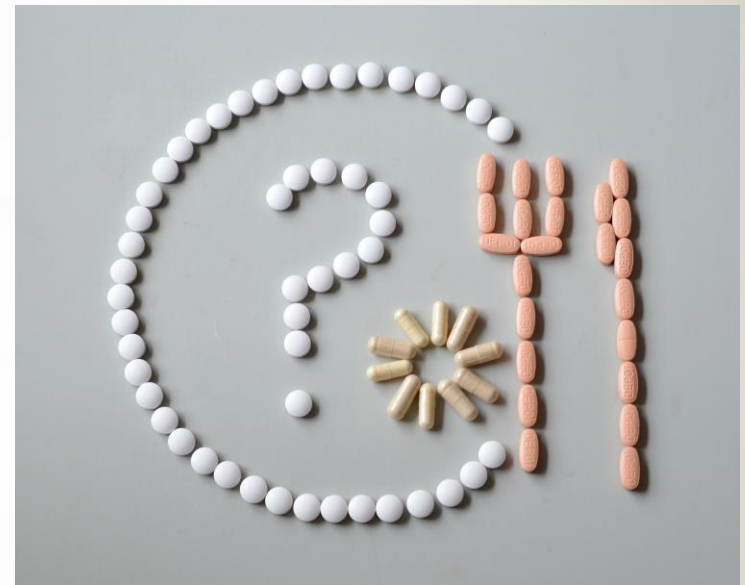
Focus for R01 Study

- Safe and holistic deprescribing

- Patient-centered approach

- Not focused on single disease state or specific drugs
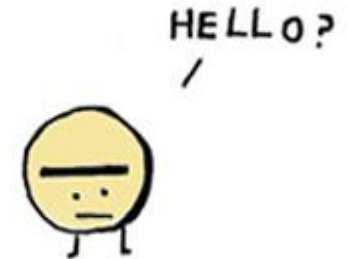
Shed MEDS: A Patient-Centered Trial of Deprescribing

"I feel a lot better since I ran out of those pills you gave me."

Shed MEDS

- 5-year Randomized Controlled Trial
  - Enrollment began March, 2017 and continues through October, 2020

- Aims
  - Reduce the number of medications patients are prescribed at both VUMC hospital and SNF discharge

  - Document intervention effects on geriatric syndromes, patient adherence to medications and functional health status

Shed MEDS Patient Population

- Hospitalized Patients
    - $\geq$ 50-years of age
    - $\geq$ 5 *pre-hospital* medications
    - Discharged to one of 22 "partner" SNFs
    - Home residence in 9 county area (Home Visit)
    - Non-hospice
    - Admitted from community setting (includes ALF)
   - Self Consent or Surrogate Available for Consent

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Shed MEDS Patient Population

332 Participants enrolled as of December 2019

| Baseline Characteristics	N (%) or Mean (±SD)
Female	205 (61.7)
Non-Hispanic or Latino	328 (98.8)
Race	
Caucasian	282 (84.9)
African American	48 (14.5)
Age	76.3 (10.7)
More than 10 pre-hospital medications	328 (98.8)
Charlson Comorbidity Index	6.9 (3.0)

preliminary, unpublished data

Continuity: Our Regional Partnership

- Why SNFs?
  - 33% of hospitalized Medicare patients receive post-acute care services
  - Monitoring and continuity of deprescribing

- 22 partner SNFs & IPRs
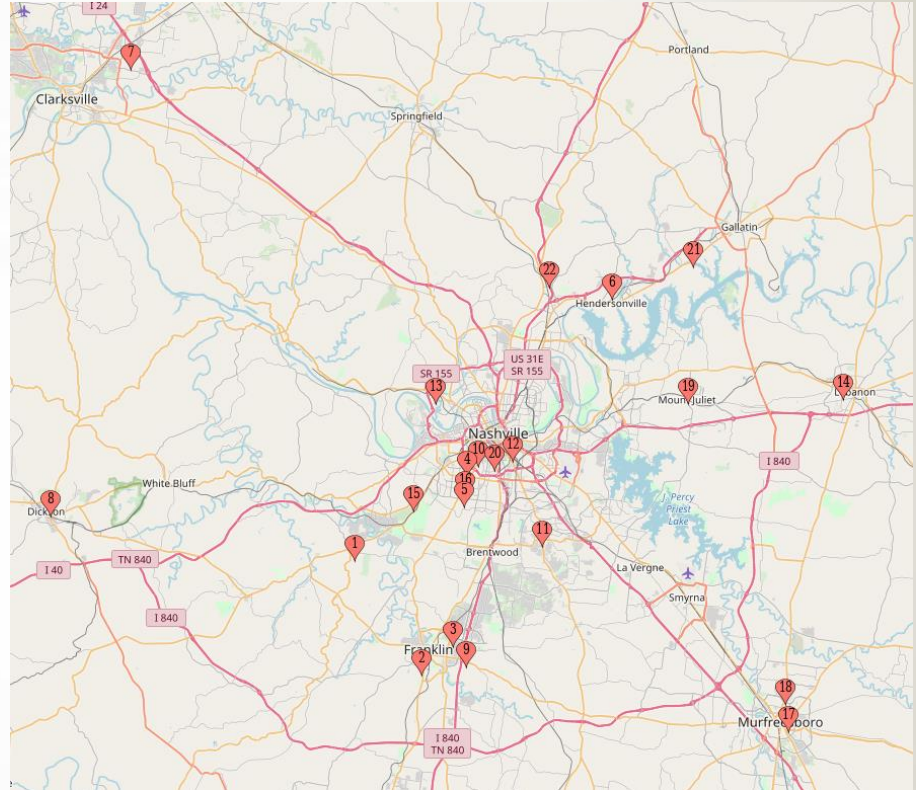
Shed MEDS Study Timeline
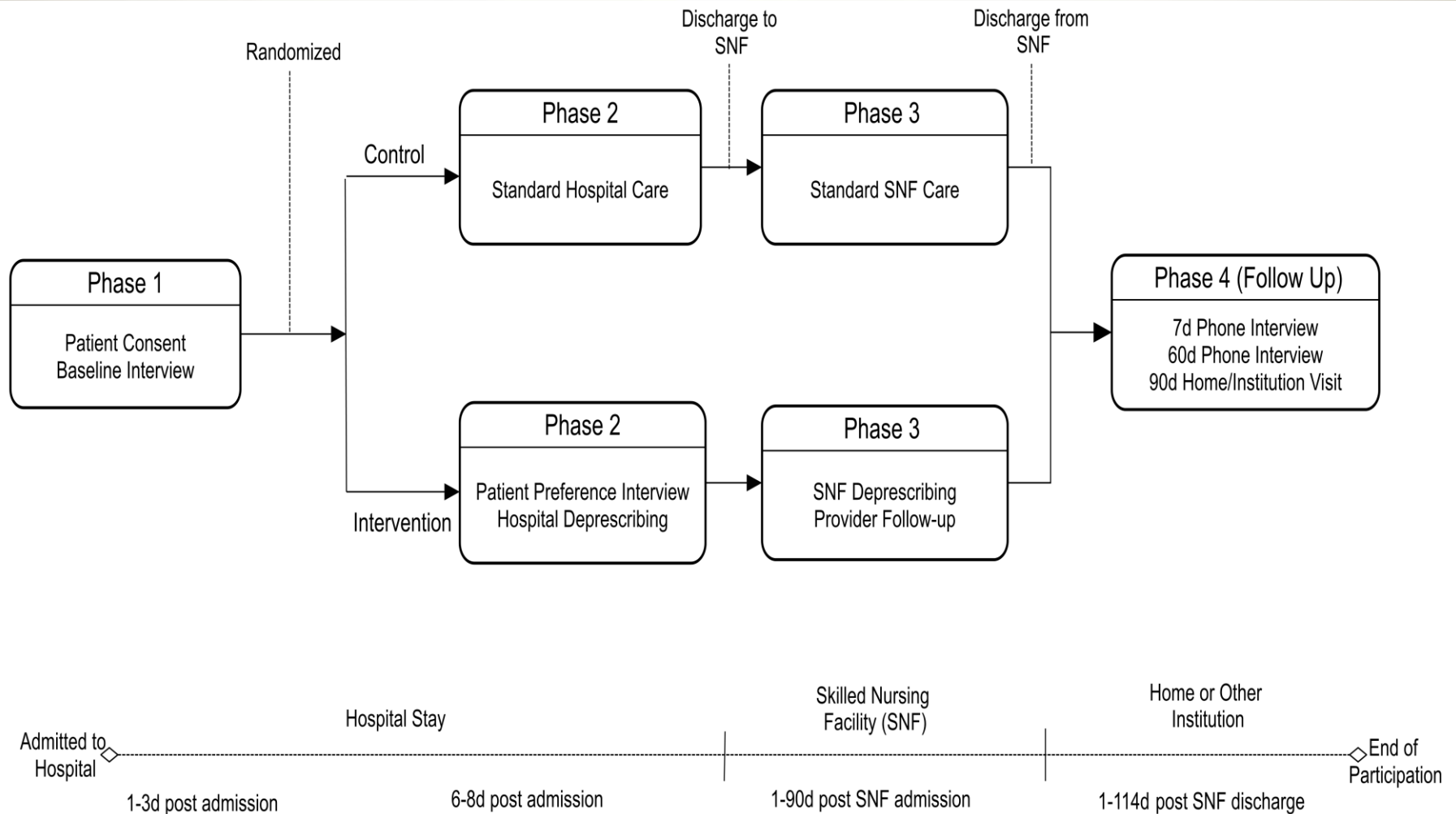
Medication & Safety Measures

Medication Measures

- Medication Details
  - Name, Route, Dose, Frequency
- MAGS
- PIMs
- Drug Burden Index (DBI)

Safety Measures

- Drug Related Adverse Events
- ED visits
- Hospital Utilization
- Mortality

Geriatric Syndrome & Other Measures

Syndrome	Tool
Delirium	Brief CAM (bCAM)
Cognitive Impairment	Brief Interview for Mental Status (BIMS)
Depressive Symptoms	Patient Health Questionnaire 9 (PHQ-9)
Urinary Incontinence	ICIQ- Urinary Incontinence
Weight Loss	DETERMINE
Pain	Brief Pain Inventory (BPI) – Short Form
Pressure Ulcers	Chart Review
Falls	Last Month (per patient/surrogate interview)
Functional Health Status	Vulnerable Elders Survey (VES-13)
Medication Adherence	Adherence to Refills and Medications Scale 14 (ARMS)
Deprescribing Attitudes	Patients' attitudes towards deprescribing (PATD)

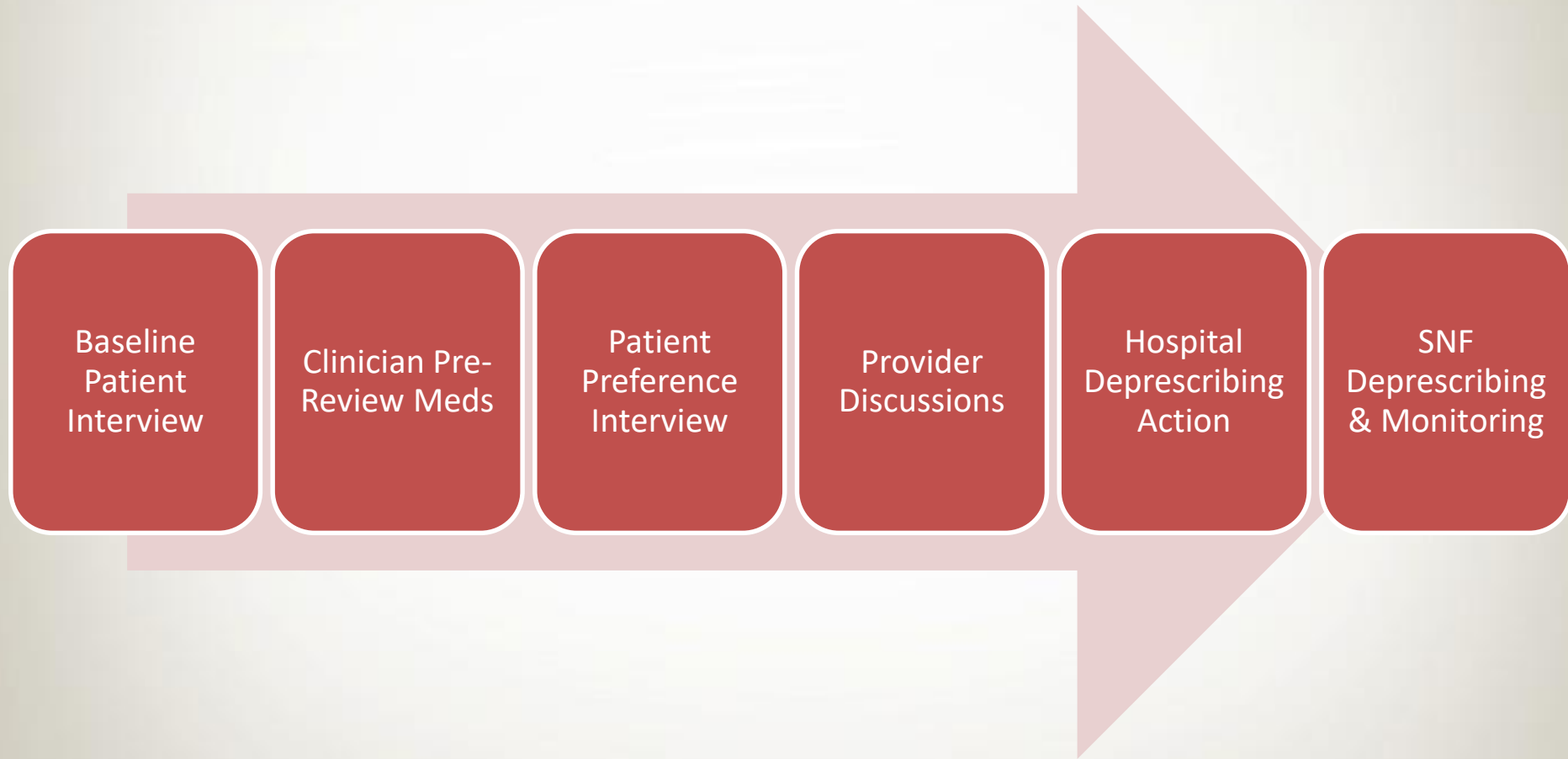# Shed MEDS Deprescribing Framework

Patient and Disease Factors

Goals of Care
Risk/Benefit
Cost
Adherence
Appropriate Treatment Targets

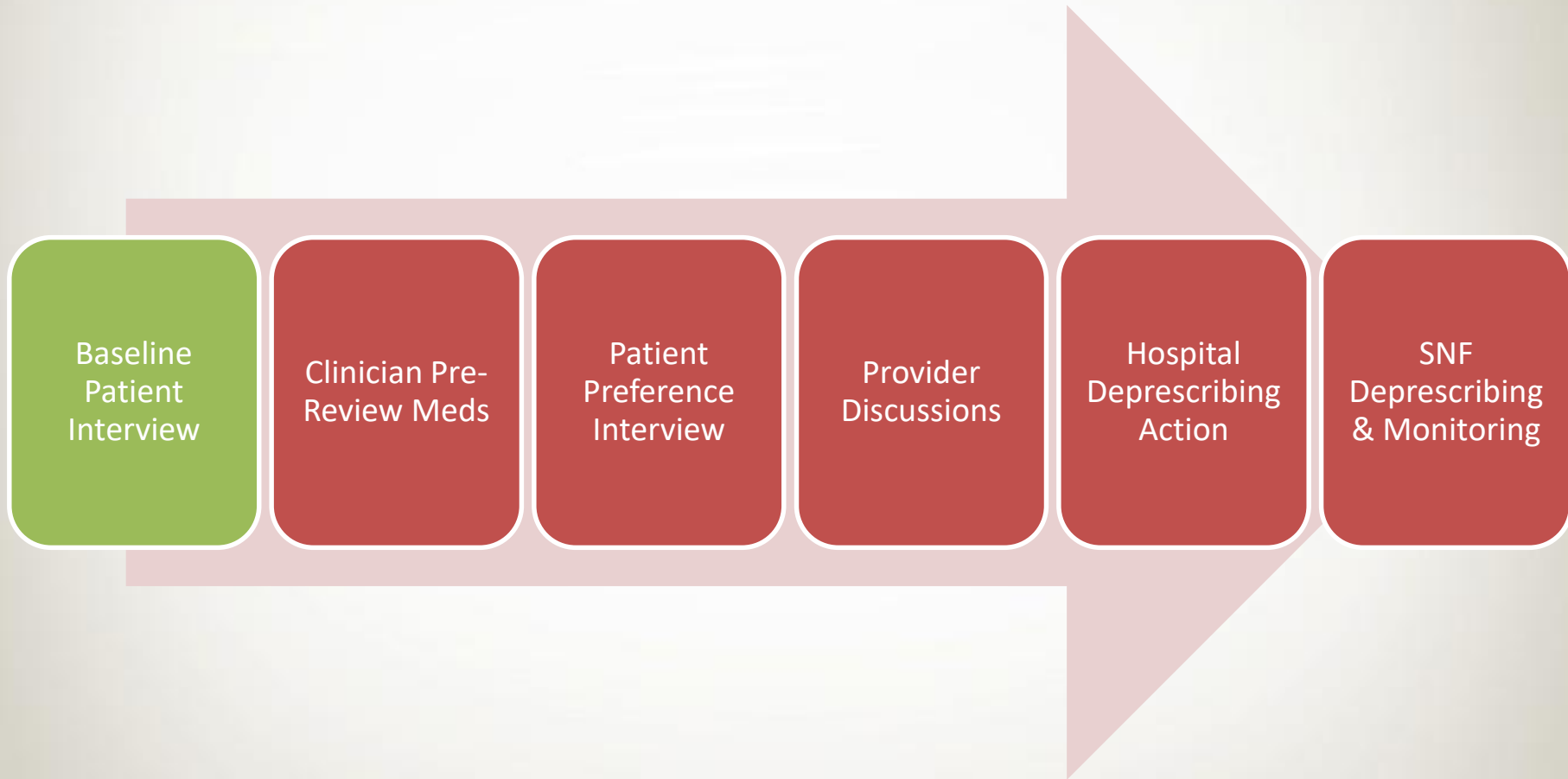Medication Specific Factors

Drug Safety Profiles
Drug-drug Interactions
Drug-disease interactions
Drug Withdrawal

Shed MEDS: Deprescribing Steps

| Baseline Patient Interview | Clinician Pre-Review Meds | Patient Preference Interview | Provider Discussions | Hospital Deprescribing Action | SNF Deprescribing & Monitoring |

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Vasilevskis EE, et al., BMC HSR. 2019

Shed MEDS: Deprescribing Steps

| Baseline Patient Interview | Clinician Pre-Review Meds | Patient Preference Interview | Provider Discussions | Hospital Deprescribing Action | SNF Deprescribing & Monitoring |

Baseline Patient Interview

Pre-Admission List from Medical Record

Over-the-Counter Supplement Use

Outside Medical Records

Accurate Admission Medication History

Pharmacy Refill History and CSMD Review

Pharmacies Utilized

http://tools.hospitalmedicine.org/resource_rooms/imp_guides/MARQUIS/Marquis Pocket_card_BPMH_20120605.pdf

Beyond the Pre-admission Med List

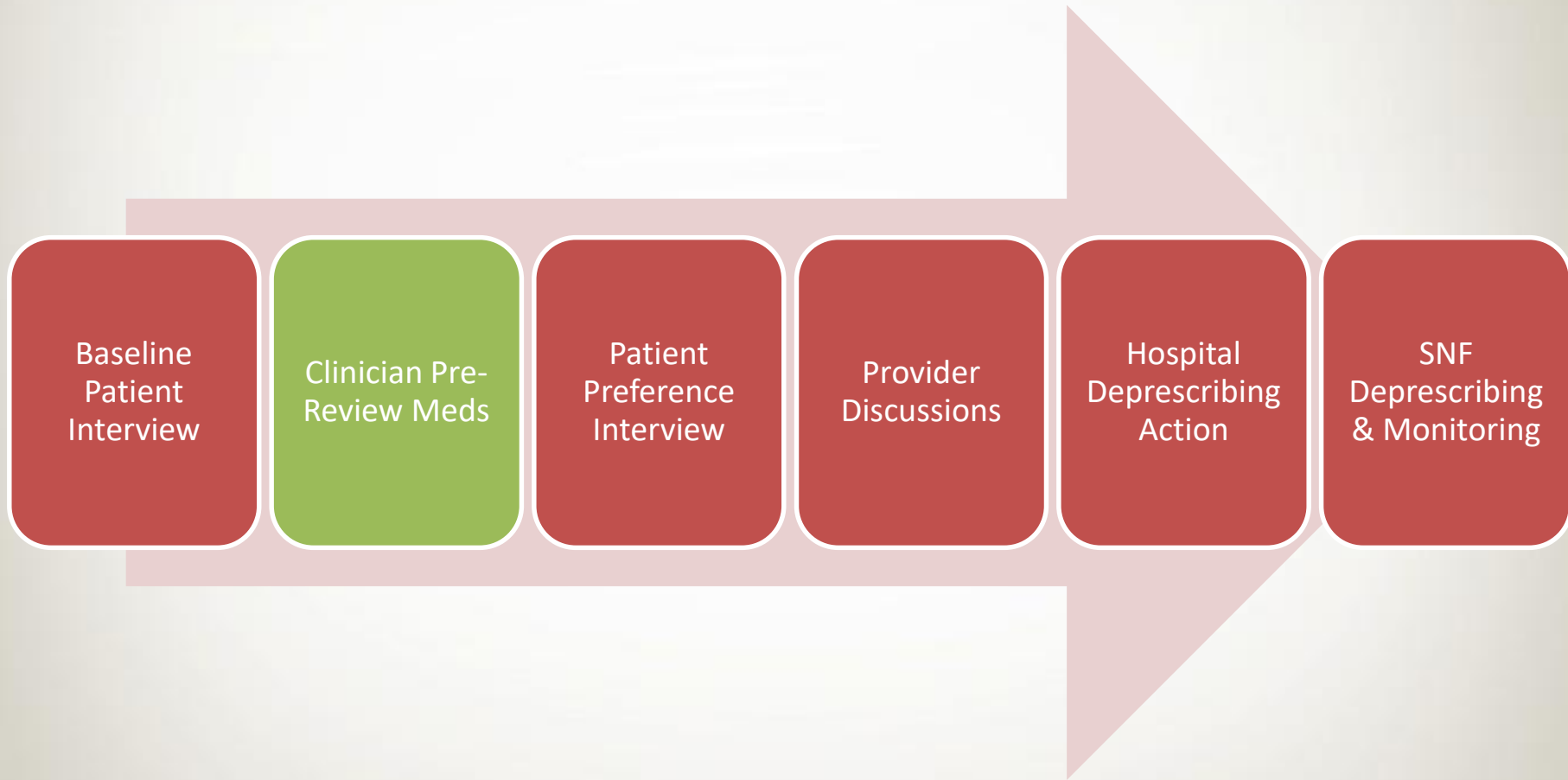| Identified via pharmacy refill history/CSMD (N = 205)	1.1 (±1.7)
Identified via patient/surrogate	1.0 (±1.5)
Identified via other medical records	0.4 (1.5)

Shed MEDS: Deprescribing Steps

| Baseline Patient Interview | Clinician Pre-Review Meds | Patient Preference Interview | Provider Discussions | Hospital Deprescribing Action | SNF Deprescribing & Monitoring |

Clinician Deprescribing Pre-Review

A. No indication for medication / Indication not clear

B. Wrong dose or directions for medication

C. Inappropriate for current indication

D. Medication is ineffective as evidenced by no change in symptom or condition

E. Duplicate medication for same indication

Clinician Deprescribing Pre-Review

F. High risk medication based on:

1. Potential drug-drug interaction

2. Potential drug-disease interaction (e.g. associated with geriatric syndrome)

3. On Explicit list of PIMs (i.e., Beer's list, STOPP list, and/or RASP list)

- Drugs with frequent interactions

- Chronic Kidney Disease / Chronic Liver Disease

- Medications Associated with Geriatric Syndromes

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Clinician Deprescribing Pre-Review
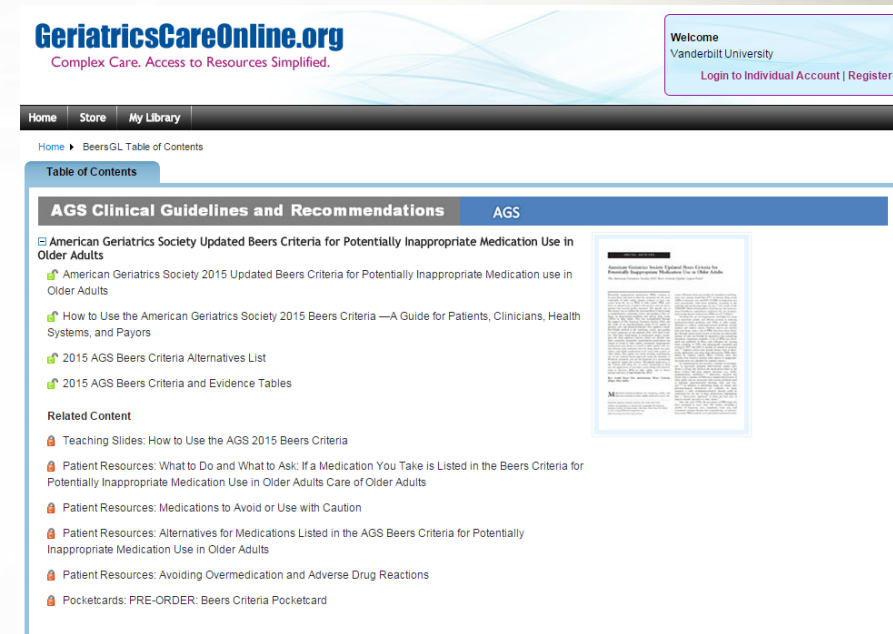
F. High risk medication based on:

1. Potential drug-drug interaction

2. Potential drug-disease interaction (e.g. associated with geriatric syndrome)

3. On Explicit list of PIMs (i.e., Beer's list, STOPP list, and/or RASP list)

Vasilevskis EE, et al., BMC HSR. 2019

Clinician Deprescribing Pre-Review

G. Medications are inconsistent with goals of care

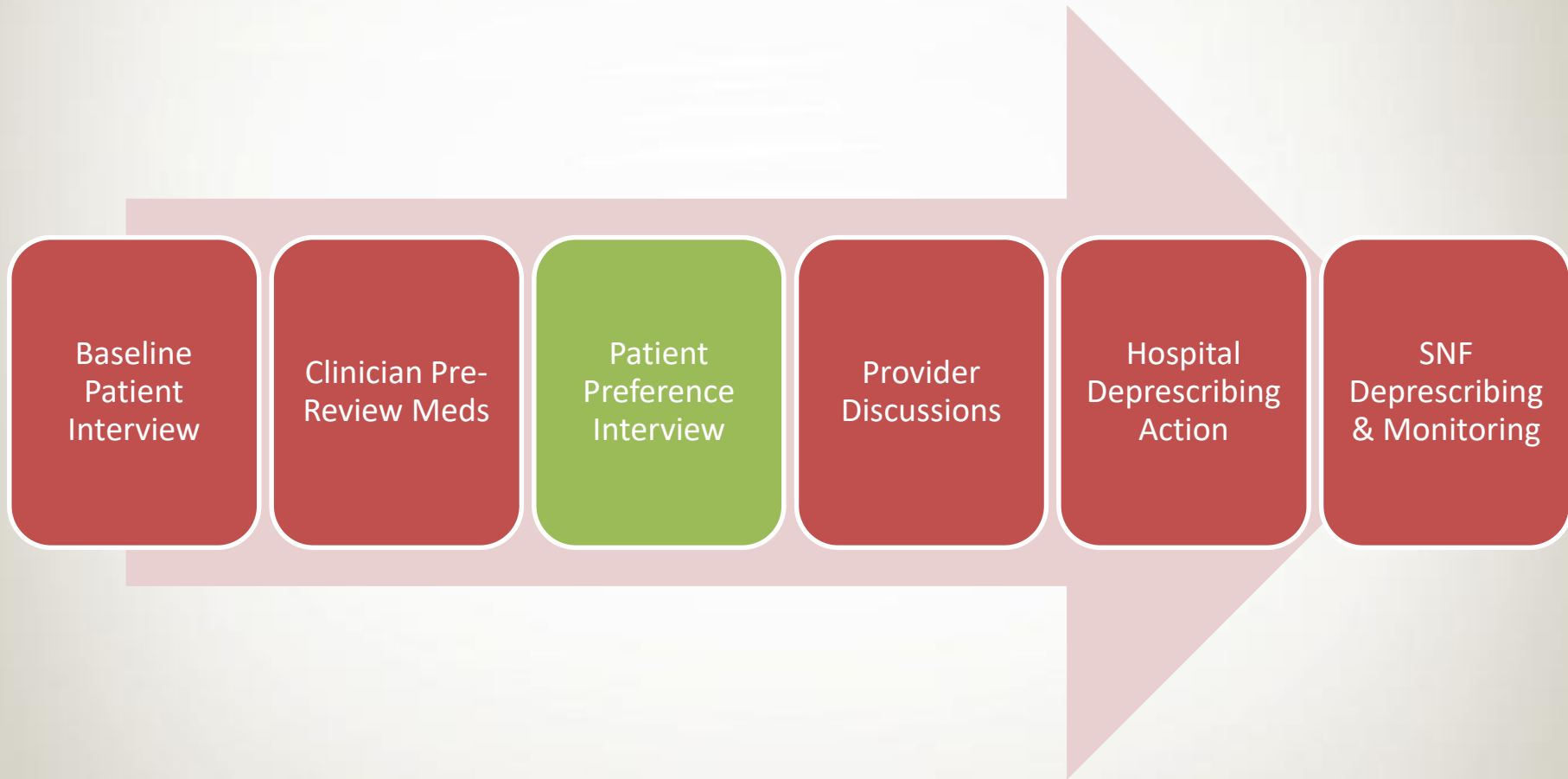H. Risk > benefit given patients limited life expectancy

I. Evidence of poor adherence or high risk of poor adherence (directions impractical, high cost)

J. Medication currently indicated, however is time-limited & expect indication to resolve

Vasilevskis EE, et al., BMC HSR. 2019

What are disease-specific benefit–harm thresholds that may support treatment discontinuation?

- Receiving preventive drugs in scenarios where drug can be safely discontinued
  - Bisphosphonate
  - ASA
  - Statins
- BP Targets
- A1C Targets
- Stage of disease

Shed MEDS: Deprescribing Steps

Baseline Patient Interview → Clinician Pre-Review Meds → Patient Preference Interview → Provider Discussions → Hospital Deprescribing Action → SNF Deprescribing & Monitoring

Patient Preference Interview: Intervention Only

- ○ Medication knowledge

- ○ Medication adherence

- ○ Medication side effects

- ○ Preferences for stopping specific medications

- ○ Willingness to decrease dose for specific medications
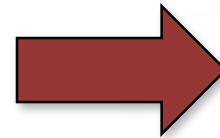
→ Patient-driven deprescribing decisions

Patient Preference Interview

Part A

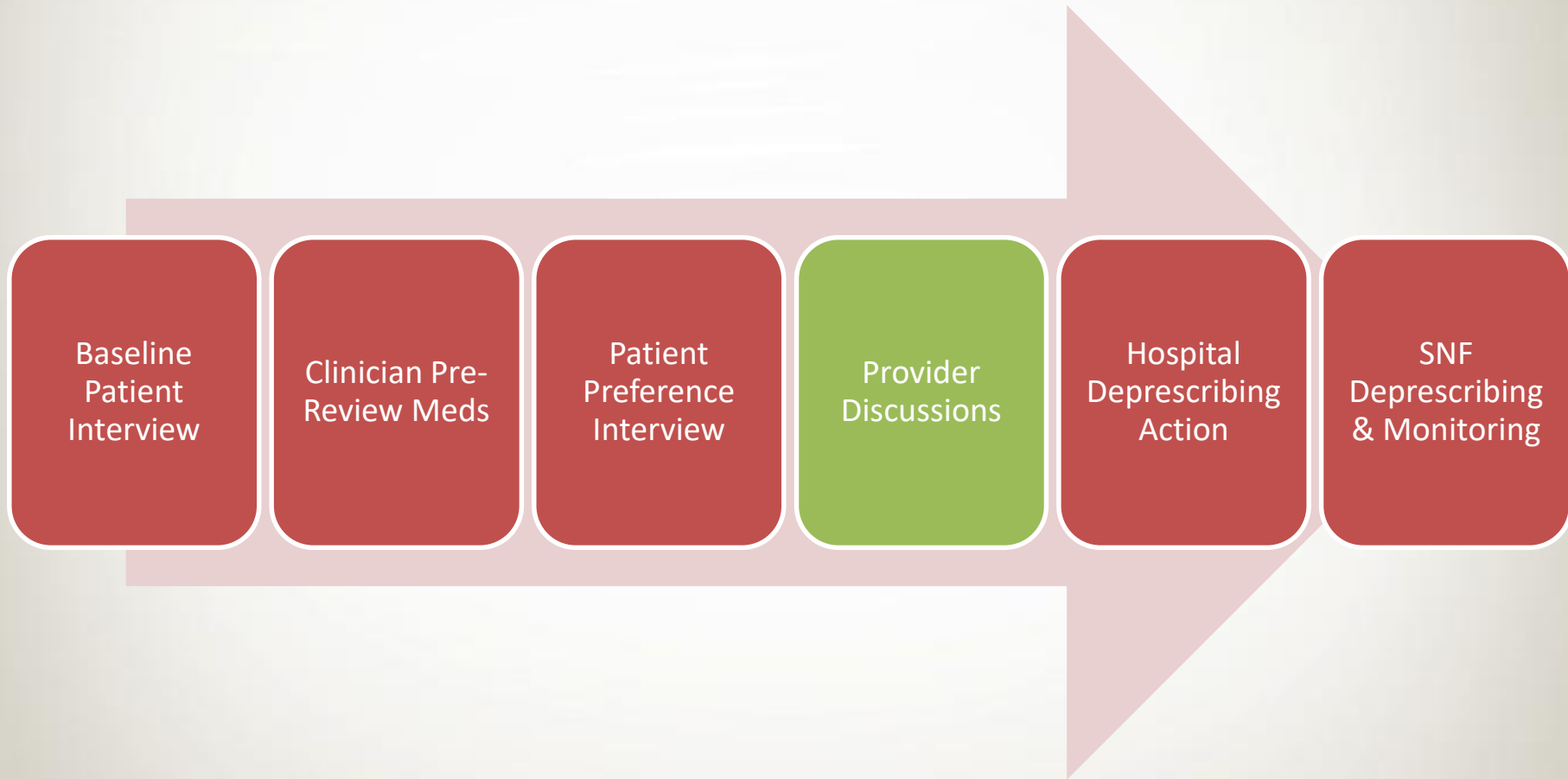| How much problem or concern are you having in the following areas?	None	A Little	A Lot	Medicine:
a. My medicine causes side effects				
b. It is hard to remember all the doses				
c. It is hard to pay for the medicine				
d. It is hard to open the container				
e. It is hard to get my refill on time				
f. It is hard to read the print on the container				
g. The dosage times are inconvenient				
h. My medicine causes other problems or concerns. *If yes, please explain the problem or concern:* _____				

Patient Preference Interview

Part B: Medicines Targeted for Deprescribing

In preparation for the interview, list targeted medications in the table in order of ranking on the deprescribing tool (highest priority to lowest priority). If the patient has mentioned a medicine in Part A that isn't listed below, please add to the chart with an asterisk next to it.

Medicine	For what reason are/ were you taking it?	How well does this medicine work for you? 1= very 2= somewhat 3= not at all 4= don't know	How much does it bother you? 0= none 1= a little 2= a lot	Have you missed taking it in the last 3 months?	Have you stopped taking it (on your own) in the last 3 months?	If yes, for what reason?	If yes, how did you feel? Better Worse No Different Don't Know	Are you okay with stopping this medicine or reducing the dosage?
1.								☐ Reduce ☐ Stop ☐ No (to either)

Notes:				Barriers		Enablers	
				☐ Appropriateness ☐ Process ☐ Influences ☐ Fear ☐ Pragmatic		☐ Appropriateness ☐ Process ☐ Influences ☐ Dislike ☐ Pragmatic (cost, logistics)	

Shed MEDS: Deprescribing Steps

Baseline Patient Interview → Clinician Pre-Review Meds → Patient Preference Interview → Provider Discussions → Hospital Deprescribing Action → SNF Deprescribing & Monitoring
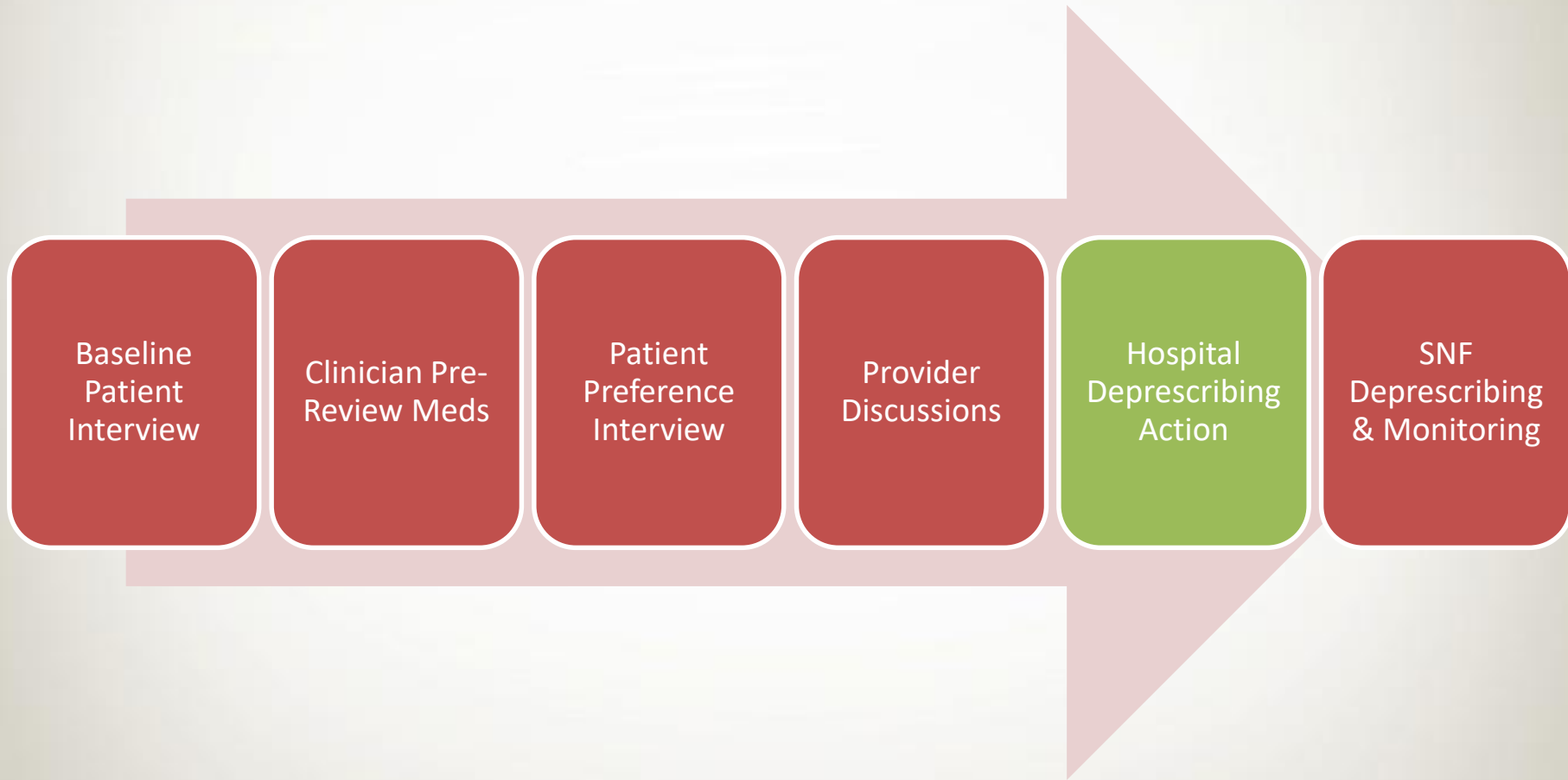
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Provider Discussions

Circle One: INPATIENT // OUTPATIENT

Provider Name: _____

Contact Info: _____

Medication/Rationale	Provider/Discussion	
□ Agree □ Disagree	BARRIER □ Awareness □ Inertia □ Self-Efficacy □ Feasibility	ENABLER □ Awareness □ Inertia □ Self-Efficacy □ Feasibility

Shed MEDS: Deprescribing Steps

Baseline Patient Interview	Clinician Pre-Review Meds	Patient Preference Interview	Provider Discussions	Hospital Deprescribing Action	SNF Deprescribing & Monitoring

Deprescribing Actions

Deprescribing
- Stop now/ at hospital discharge
- Stop & Monitor in SNF
- Stop Later (specify time)
- Titrate down to stop & monitor in SNF
- Decrease dose
- Decrease dose & monitor in SNF

Non-Deprescribing
- Continue Medication
- New (add medication)
- Currently on hold (to be restarted as outpatient)

Vasilevskis EE, et al., BMC HSR. 2019

Shed MEDS: Deprescribing Steps

| Baseline Patient Interview | Clinician Pre-Review Meds | Patient Preference Interview | Provider Discussions | Hospital Deprescribing Action | SNF Deprescribing & Monitoring |

SNF Deprescribing & Monitoring

- Warm Handoff with SNF provider
  - Ensure correct medication list
  - Communicate deprescribing recommendations, actions, and monitoring instructions

- Weekly calls with SNF provider
  - Review MAR for medication changes
  - Discuss symptoms and medication changes

Intervention Wrap-up

- Creating a comprehensive medication list that is shared with all outpatient providers
  - Includes details on deprescribing and adherence issues
  - Provides future deprescribing recommendations

- Canceling refills of stopped medications

Lessons Learned

- Enrollment Challenges

- Implementation Considerations

Enrollment Challenges

- ## Screened 7865 hospitalized patients
  - – 35% met initial inclusion criteria

| Initial Reasons for Ineligibility	
Out of 9 County Area	73%
< 6 months mortality	13%
< 5 medications	6%
Admitted from LTC	3%
Homeless	3%
Other (non-English speaking, incarcerated, drug trial participant)	2%

Enrollment Challenges

- Patients were later deemed ineligible due to their final discharge disposition
  - Discharged to non-partner SNF (38%)
  - Discharged to home (29%)
  - Discharged < 48 hours (23%)
  - Other: non-partner IPR, LTAC, other hospital (10%)

Enrollment Challenges

- 1125 patients met all inclusion criteria
  - 95% approached for participation

- 31% Consent Rate
- Reasons for non-consent
  - Patient or Family Refused (71%)
  - Patient undecided at time of discharge (19%)
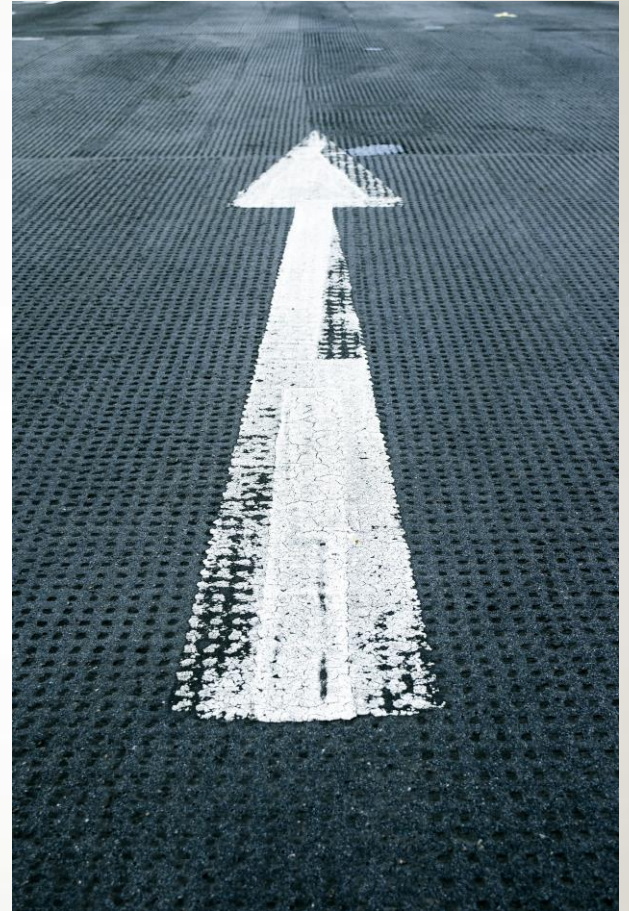 - Patient unable to consent & no surrogate available (10%)

Enrollment Challenges

Reasons Patients Refuse Participation
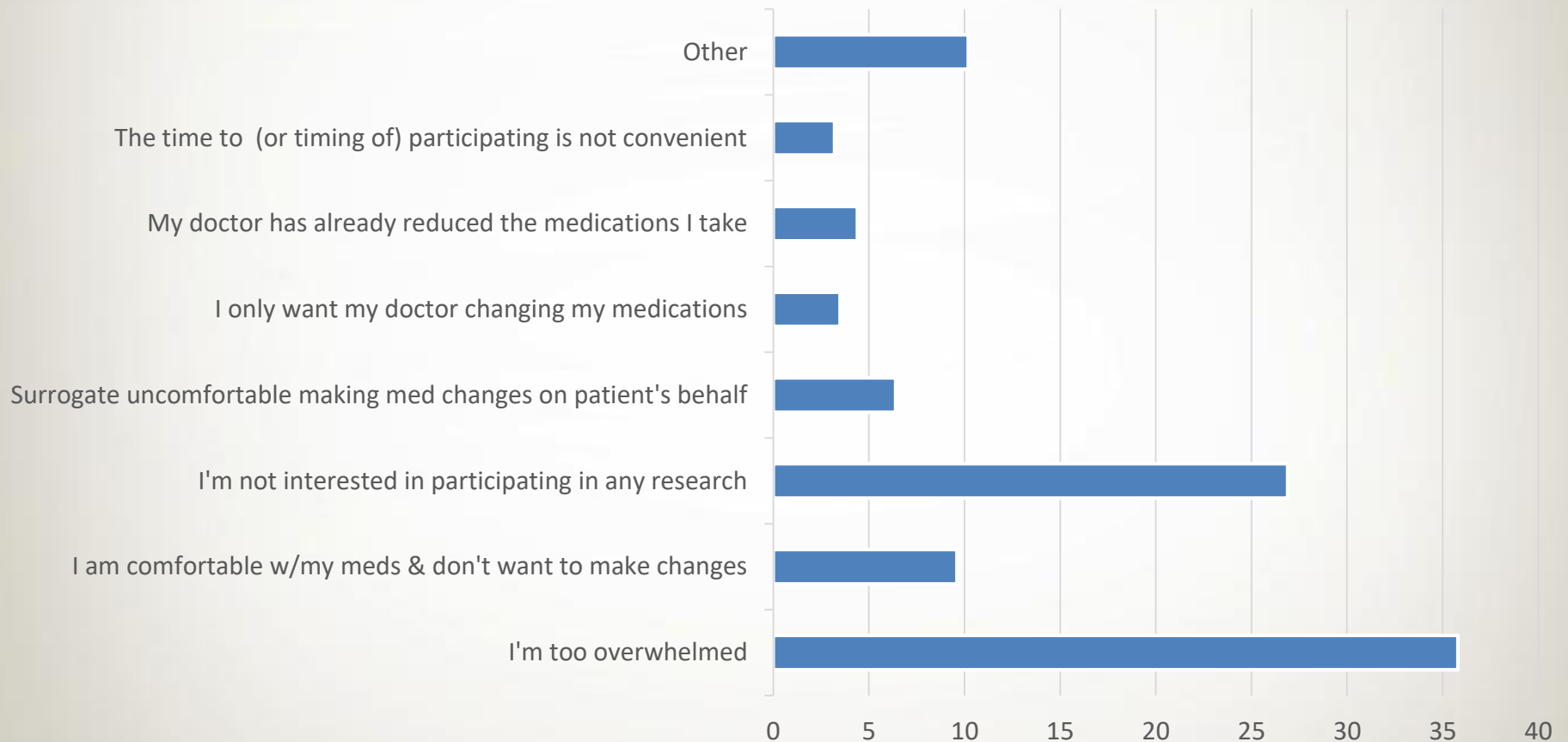
Future Directions

- Clinical Decision Support

- Framing of Deprescribing

- Setting

- Care Transitions

Shed MEDS Team

Principle Investigators
- Sandra Simmons, PhD
- Eduard Vasilevskis, MD, MPH

Project Coordinators
- Emily Hollingsworth, MSW
- Avantika Shah, MPH

Geriatric Nurse Practitioners
- Carole Bartoo, AGNP-BC, GS-C
- Jennifer Kim, DNP, GNP-BC, GS-C
- Kanah Lewallen, DNP, AGPCNP-BC

Geriatric Pharmacist
- Jessica Lovell, PharmD

Research Staff
- Joanna Gupta, M.Ed.
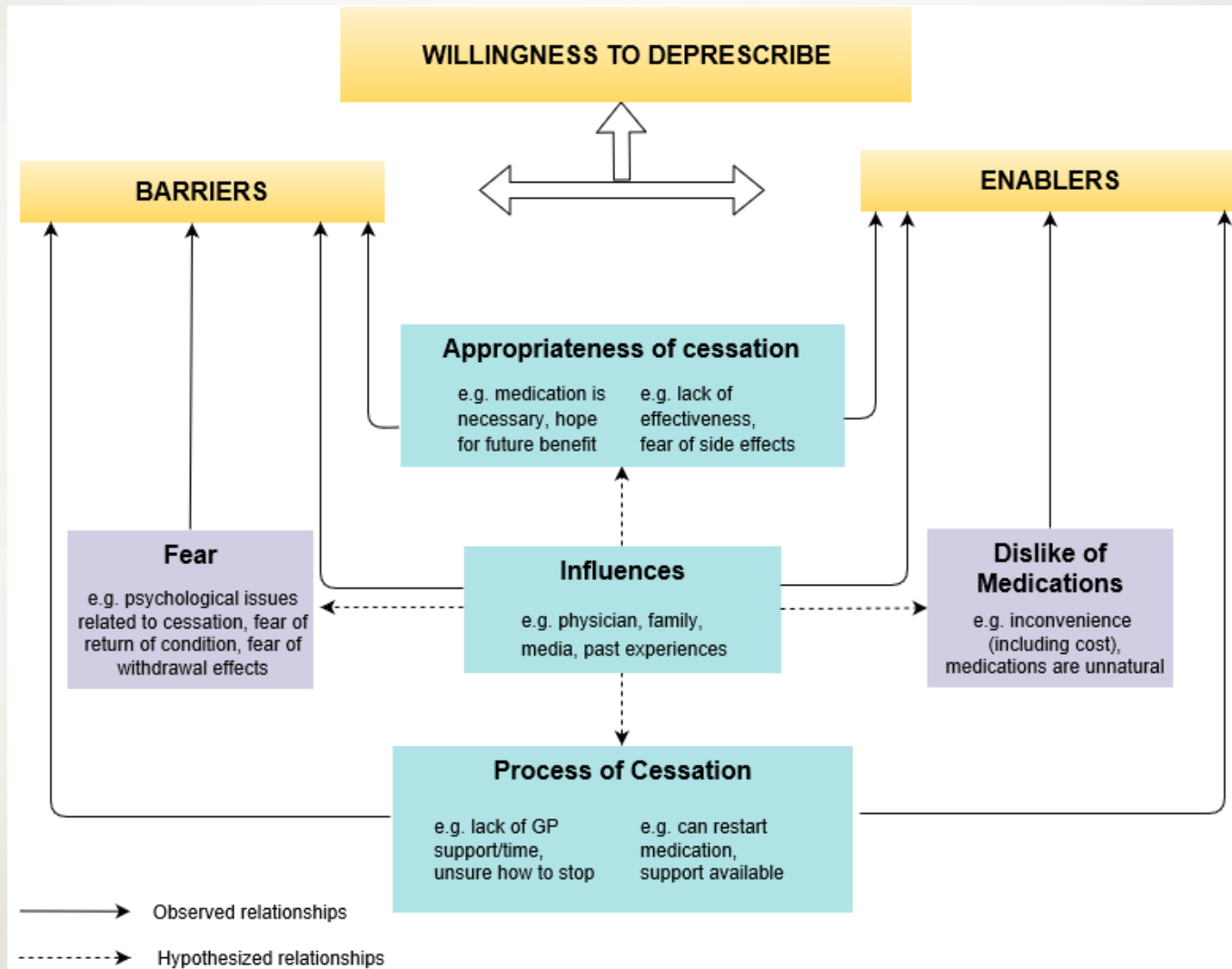- Susan Lincoln, BS

Thank You

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Appendix Slides

Patient Barriers & Enablers

Reeve, E., et.al. *Drugs & Aging.* 2013

Provider Barriers & Enablers

Enablers

AWARENESS	INERTIA	SELF-EFFICACY	FEASIBILITY

REGULATORY
Raise prescribing threshold
Monitoring by authorities

WORK PRACTICE
Stimulus to review

PRESCRIBER BEHAVIOUR
Devolve responsibility

INFORMATION/DECISION SUPPORT
Data to quantify benefits/harms
Dialogue with patients
Access to specialists

RESOURCES
Adequate reimbursement
Access to support services

PRESCRIBER BELIEFS/ATTITUDE
Fear of negative consequences of continuation
Positive attitude toward deprescribing
Stopping brings benefits

SKILLS/ATTITUDE
Confidence
Work experience, skills & training

PATIENT
Receptivity/motivation to change
Poor prognosis

Review, observation, audit & feedback

AWARENESS	**INERTIA**	**SELF-EFFICACY**	**FEASIBILITY**

Barriers

Poor insight
Discrepant beliefs & practice

PRESCRIBER BELIEFS/ATTITUDE
Fear unknown/negative consequences of change
Drugs work, few side effects
Prescribing is kind, meets needs
Stopping is difficult, futile, has/will fail
Stopping is a lower priority issue

PRESCRIBER BEHAVIOUR
Devolve responsibility

SKILLS/KNOWLEDGE
Skill/knowledge gaps

INFORMATION/INFLUENCERS
Lack of evidence
Incomplete clinical picture
Guidelines/specialists
Other Health Professionals (Aged care)

PATIENT
Ambivalence/resistance to change
Poor acceptance of alternatives
Difficult & intractable adverse circumstance
Discrepant goals to prescriber

RESOURCES
Time & Effort
Insufficient reimbursement
Limited availability of effective alternatives

WORK PRACTICE
Prescribe without review

MEDICAL CULTURE
Respect prescriber's right to autonomy & hierarchy

HEALTH BELIEFS AND CULTURE
Culture to prescribe more
Prescribing validates illness

REGULATORY
Quality measure driven care