

# Deprescribing guidelines education and research – the interplay and the way to move forward

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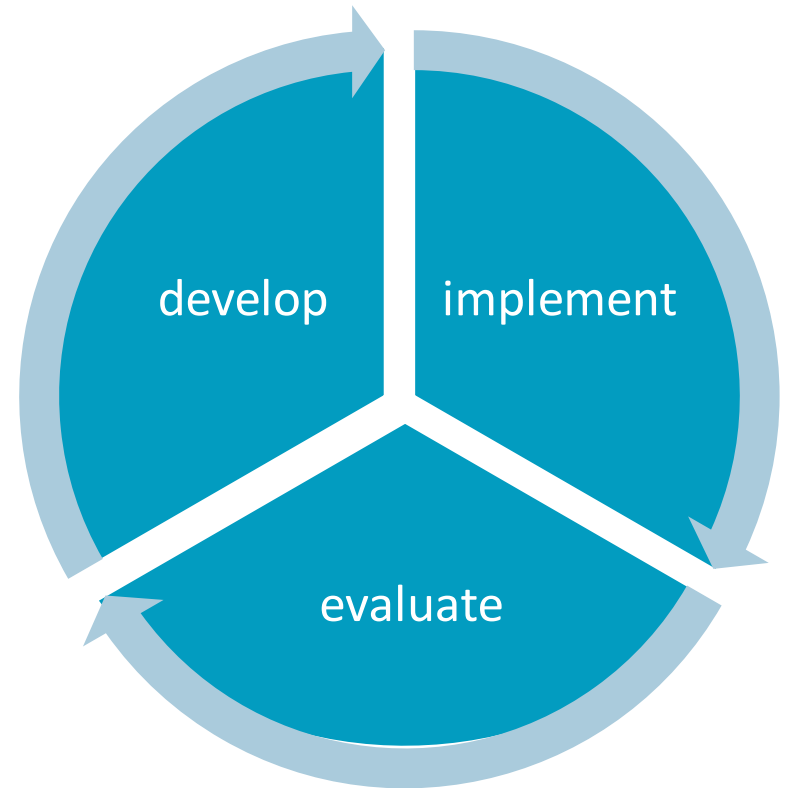
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# Many intersections for research and education

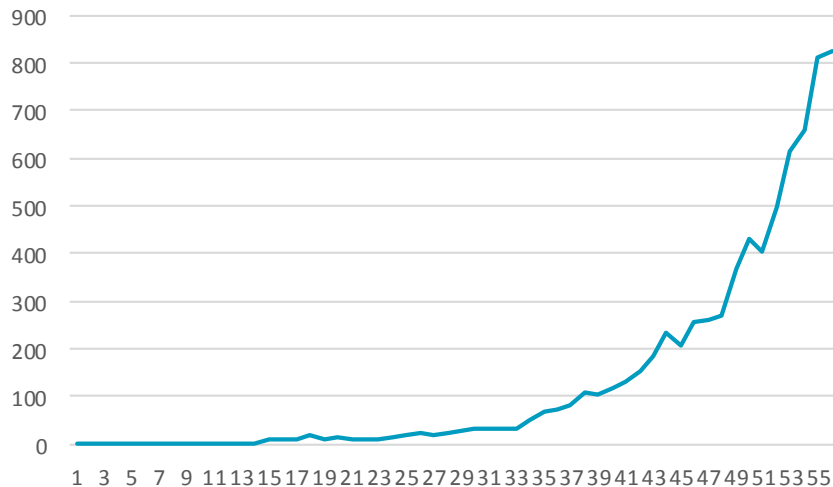
- Research **GUIDES** development of curriculum content and skills
- Education / Practice **GUIDES** research needs
- Training in **RESEARCH SKILLS** as part of the curriculum
- Research to **EVALUATE EFFECTS** of putting new knowledge and skills into the curriculum
  - Understand changes over time including effectiveness



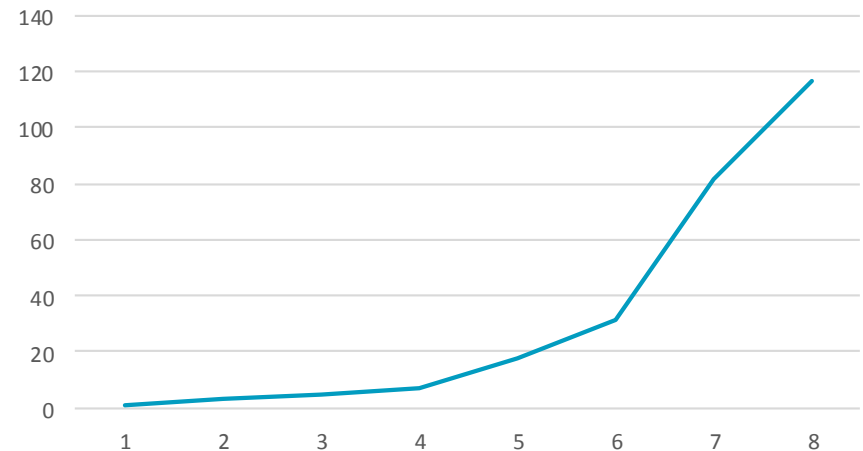
# Research guides curriculum content

- A growing focus on multimorbidity / polypharmacy research

Polypharmacy MEDLINE entries 1955-2017



Deprescribing MEDLINE entries 2007-2017



# Prescribing competency of medical students in Canada: survey of medical education leaders

(Liu J et al, 2018)

- 372 (34.6%) respondents faculty from n=17 schools
- 23.4% (SD 22.9%) felt their own graduates' prescribing knowledge was unsatisfactory
- 131 (44.8%) felt obligated to provide close supervision to more than a third of new residents
- 239 (73.0%) believed an assessment process would improve quality
- 262 (80.4%) thought it should be incorporated into their medical school curricula

**Research has identified a strong need for focus on prescribing (and thus deprescribing) within formal education systems**



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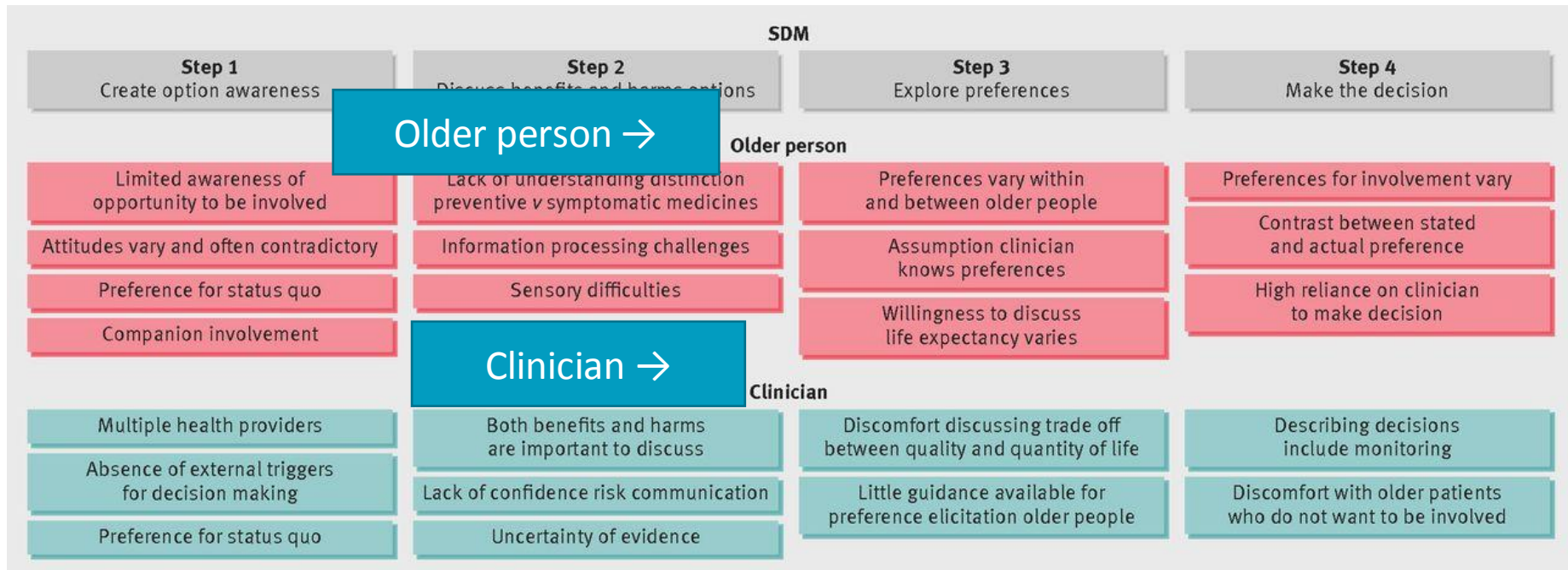
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# Tasks required for shared decision making in deprescribing

## Complicated process: a lot goes into decisions

Jansen J et al BMJ 2016



Informed by research from the domains of psychology, communication, decision making

**Research provides evidence that education in a number of areas would be helpful**

# There is lots of research showing prescribing (and thus Deprescribing) can be improved

## BMJ Open Interventions to improve the appropriate use of polypharmacy in older people: a Cochrane systematic review

Janine A Cooper.<sup>1</sup> Cathal A Cadoan.<sup>1</sup> Susan M Patterson.<sup>2</sup> Nqaire Kerse.<sup>3</sup>



**Cochrane  
Library**

Cochrane Database of Systematic Reviews

12 studies (computerised decision support or pharmaceutical care approaches) across various settings reduced inappropriate prescribing

Medicines self monitoring, self-management programs generally effective plus other approaches show promising

### Interventions to improve safe and effective medicines use by consumers: an overview of systematic reviews (Review)

Ryan R, Santesso N, Lowe D, Hill S, Grimshaw JM, Prictor M, Kaufman C, Cowie G, Taylor M

Improves quality of prescribing and reducing errors

Reis WC, Bonetti AF, Bottacin WE, Reis AS Jr, Souza TT, Pontarolo R, Correr CJ, Fernandez-Llimos F. Impact on process results of clinical decision support systems (CDSSs) applied to medication use: overview of systematic reviews. *Pharmacy Practice* 2017 Oct-Dec;15(4):1036.

<https://doi.org/10.18549/PharmPract.2017.04.1036>

### Original Research

Impact on process results of clinical decision support systems (CDSSs) applied to medication use: overview of systematic reviews

Walleri C, REIS , Aline F. BONETTI , Wallace E. BOTTACIN , Alcindo S. REIS Jr , Thais T. SOUZA, Roberto PONTAROLO , Cassiano J. CORRER, Fernando FERNANDEZ-LLIMOS .

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Many components:

**Tools**

**Activities**

**Processes**

**Relationships**

**Confidence**

**Context**

**Etc....**

Many stakeholders:

**Patients/families**

**Physicians**

**Pharmacists**

**Nurses**

**Other health care  
providers**

**Health organizations**

**Etc....**



# Research used to guide curriculum: examples

- Recent PPI (and other guidelines) woven into pharmacotherapy education
- Deprescribing decisions (interplay of multiple stakeholders)
- Research on deprescribing quality indicators (identify and learn from / do research with sentinel practices)



# Education / Practice guide research needs

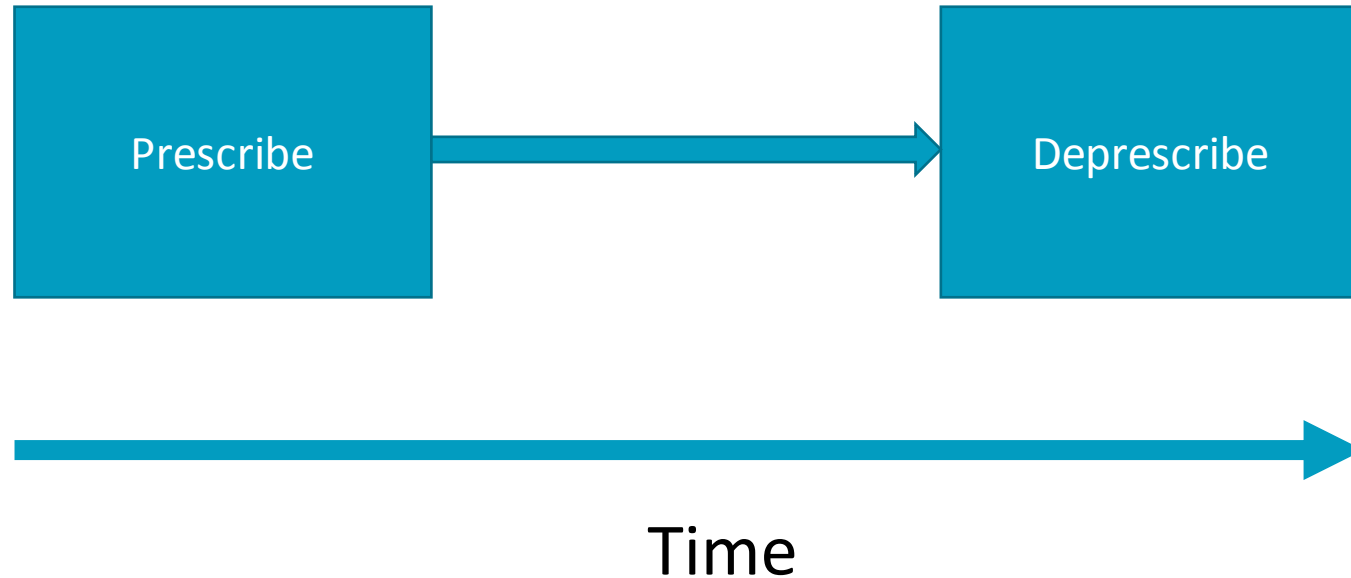
## Trends:

- Interprofessional education
- Integrated Care/health system reform
- Quality Improvement
- Technology (use in learning & care)
- Equity/vulnerability
- Global health
- Etc....

Research plans need to account for these evolutions (? revolutions)



# Research and education about health and care over time



Examples: Life, health and system changes, follow up and monitoring



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# Training in research skills as part of the curriculum (re deprescribing guidelines)

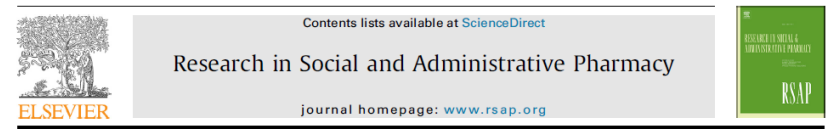
- Guideline development
- Critical appraisal skills including primary literature, systematic overviews
- Research methods
  - Quantitative
  - Qualitative / social science
  - Including implementation science/knowledge translation and outcomes oriented methods
- As part of leadership training



# Self efficacy for deprescribing

Farrell B et al, 2017

- Need to ensure we teach people how to use guidelines because
  - Having guidelines increases self-efficacy



Self-efficacy for deprescribing: A survey for health care professionals using evidence-based deprescribing guidelines\*



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## ABSTRACT

**Background:** Although polypharmacy is associated with significant morbidity, deprescribing can be challenging. In particular, clinicians express difficulty with their ability to deprescribe (i.e. reduce or stop medications that are potentially inappropriate). Evidence-based deprescribing guidelines are designed to help clinicians take action on reducing or stopping medications that may be causing more harm than benefit.

**Objectives:** Determine if implementation of evidence-based guidelines increases self-efficacy for deprescribing proton pump inhibitor (PPI), benzodiazepine receptor agonist (BZRA) and antipsychotic (AP) drug classes.

**Methods:** A deprescribing self-efficacy survey was developed and administered to physicians, nurse practitioners and pharmacists at 3 long-term care (LTC) and 3 Family Health Teams in Ottawa, Canada at baseline and approximately 6 months after sequential implementation of each guideline. For each drug class, overall and domain-specific self-efficacy mean scores were calculated. The effects of implementation of each guideline on self-efficacy were tested by estimating the difference in scores using paired t-test. A linear mixed-effects model was used to investigate change over time and over practice sites.

**Results:** Of eligible clinicians, 25, 21, 18 and 13 completed the first, second, third and fourth survey respectively. Paired t-tests compared 14 participants for PPI and BZRA, and 9 for AP. Overall self-efficacy score increased for AP only (95% confidence intervals (CI) 0.32 to 19.79). Scores for domain 2 (develop a plan to deprescribe) increased for PPI (95% CI 0.52 to 24.12) and AP guidelines (95% CI 2.46 to 18.11); scores for domain 3 (implement the plan for deprescribing) increased for the PPI guideline (95% CI 0.55 to 14.24). Longitudinal analysis showed an increase in non-class specific scores, with a more profound effect for clinicians in LTC where guidelines were routinely used.

**Conclusion:** Implementation of evidence-based deprescribing guidelines appears to increase clinicians' self-efficacy in developing and implementing a deprescribing plan for specific drug classes.



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# There are emerging methods for developing deprescribing guidelines

Farrell B et al, 2016



## RESEARCH ARTICLE

# Methodology for Developing Deprescribing Guidelines: Using Evidence and GRADE to Guide Recommendations for Deprescribing

**Barbara Farrell<sup>1,2,3,\*</sup>, Kevin Pottie<sup>1,2,4</sup>, Carlos H. Rojas-Fernandez<sup>3,5‡</sup>, Lise M. Bjerre<sup>1,2,4‡</sup>, Wade Thompson<sup>1,4‡</sup>, Vivian Welch<sup>1,4‡</sup>**

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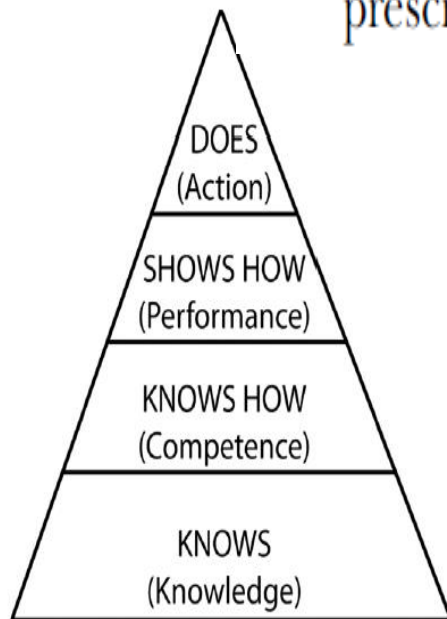
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# Research to evaluate effects of putting new knowledge and skills into the curriculum

## Evaluating Educational Interventions to Improve Prescribing: Systematic review (Karamudin, BMJ Open 2013)

1. Prescribing competence ('knows how')—assessing prescriptions written for theoretical cases;
2. Prescribing performance ('shows how')—assessing prescriptions written for real patients.



- **Specific prescribing teaching / interventions can lead to improvements in prescribing**
  - **Tutorials, education programs including incorporating into PBL**
    - **WHO Guide to Good Prescribing**
  - **Prescribing can be positively influenced from interventions centred on practice guidelines**
  - **Improved communication among professionals**

Figure 1 Miller's framework for clinical assessment.<sup>13</sup>



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# Need more scholarship on effects of curriculum change

- Promote scholarship in these areas
  - Reflective practice
  - Experiential learning
  - Interprofessional education and practice
  - Experience, Quality, Outcomes and Value

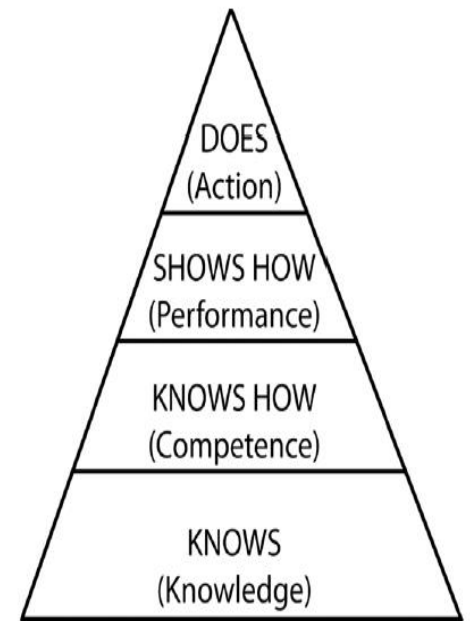


Figure 1 Miller's framework for clinical assessment.<sup>13</sup>



# Royal Pharmaceutical Society: Competency Framework for all Prescribers

## Prescribing Framework



## A Competency Framework for all Prescribers

Publication date: July 2016

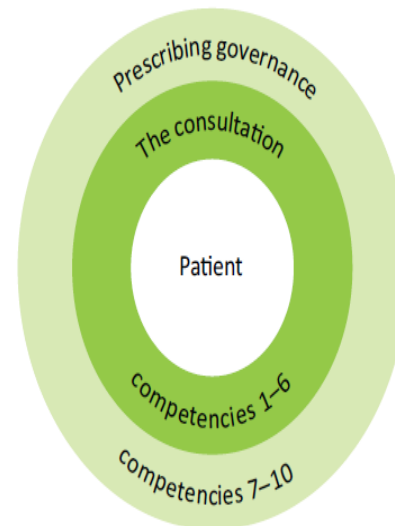
Review date: July 2020



NICE has accredited the process used by the Royal Pharmaceutical Society to produce the professional guidance and standards. Accreditation is valid 5 years from 17 February 2017. For full details on NICE accreditation visit: [www.nice.org.uk/accreditation](http://www.nice.org.uk/accreditation)



**Fig 1. The prescribing competency framework.** The full competency framework can be found on the Royal Pharmaceutical Society website ([www.rpharms.com/prescribingframework](http://www.rpharms.com/prescribingframework)). Reproduced with permission from the Royal Pharmaceutical society.



### The consultation

- 1 Assess the patient
- 2 Consider the options
- 3 Reach a shared decision
- 4 Prescribe
- 5 Provide information
- 6 Monitor and review

### Prescribing governance

- 7 Prescribe safely
- 8 Prescribe professionally
- 9 Improve prescribing practice
- 10 Prescribe as part of a team



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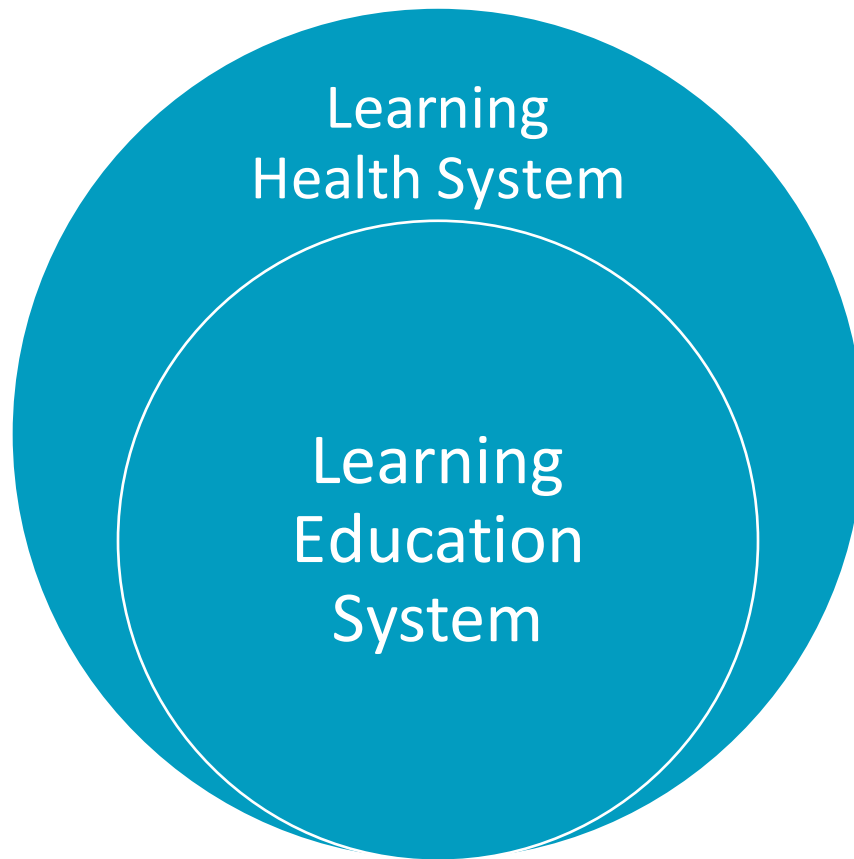
# Learning Health System – how does this translate into a Learning Education System?

- LHSs are systems in which “science, informatics, incentives, and culture are aligned for continuous improvement and innovation, with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral by- product of the delivery experience.” (Institute of Medicine )
- Best practices are fed back into the system to promote change and scale.

**Can deprescribing be a model for evolving to a LES as part of a LHS?**



# Learning Education System: Promote systems for researcher-curriculum developer interactions



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# Emerging Deprescribing International Research Collaborative

(based on meeting on Monday)

- Developing a GRADE Special Interest Group (SIG)
- White Paper on research needs
- Review of current guidelines to examine how deprescribing is handled
- Developing a question on patient experience stopping a medication
- Sharing of research across the collaborative



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