

Assessment of the Effect of Behavioral Change Strategies on Knowledge Translation and interventions from Disease State Education Modules: DSEM-KT Study

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Background

Priority Disease States

- Priority disease states account for a significant number of emergency department visits, hospital admissions, prolonged lengths of stay and increased costs
- Randomized controlled trials (RCTs) have shown that hospital pharmacists resolving drug related problems (DRPs) for patients with priority disease states can improve the overall quality of drug therapy, and reduce health care utilization and costs
- Pharmacists need continuous professional development (CPD) to optimally care for patients with priority disease states

Disease State Education Modules (DSEMs)

- Four week DSEMs were developed in 2009 at Interior Health (IH) to improve the knowledge, skills, abilities, competence, and confidence of pharmacists caring for patients with priority disease states
- At the end of each DSEM, a list of key pharmacist interventions (KPI) or evidence-based interventions proven to reduce mortality, morbidity or health care utilization were developed to guide interventions
- The AIMS study (2012) showed that DSEMs were associated with statistically significant improvements in process of care outcomes (i.e. DSEM DRPs and KPIs), but opportunity for further improvement exists

Knowledge Translation and Behavioral Change

- Knowledge translation (KT) is "...synthesis, exchange, and application of knowledge by relevant stakeholders to accelerate the benefits of global and local innovation ...and improve people's health"
- Application of proven, multifaceted professional behavioral change strategies bundled after DSEMs may enhance knowledge translation and further improve process of care outcomes

Objective

- To evaluate the impact of proven, multifaceted professional behavioral change strategies on knowledge translation and process of care outcomes for heart failure (HF) patients by IH pharmacists

Methods

Design

- Prospective, quasi-experimental, one group, pre/post study to evaluate the impact of behavioral change strategies on IH pharmacists caring for HF patients

Setting

- Tertiary (KGH, RIH), regional (PRH, VJH, EKH, KBH), and community (SOH, SLH, KLH, and OMH) Pharmacy Departments across IH (July 1/12 - Jul 31/13)

Inclusion Criteria

- IH clinical pharmacists who provided their informed consent were administered a PRE and POST intervention HF quiz to assess knowledge translation outcomes
- DRP Tracker data from PRE (Jul 1/12 - Dec 31/12) and POST (Feb 1/13 - Jul 31/13) intervention phases were included to assess behavioral change outcomes

Intervention

- Bundle of six proven, multifaceted behavioral change strategies provided to IH pharmacists over a 6-week intervention period (Feb 19/13 - Mar 29/13):
 1. Audit and feedback; 2. Local opinion leaders; 3. Educational meetings; 4. Educational outreach; 5. Printed education materials; 6. Reminders

Primary Outcome

- Change in proportion of HF DRP/DSEM DRP from PRE to POST intervention

Secondary Outcomes

- Change in proportion of HF KPI/DSEM KPI from PRE to POST intervention
- Change in pharmacists' scores on HF quiz from PRE to POST intervention

Statistical Analysis

- Behavioral outcomes analyzed with a test of proportions, two-tailed $p \leq 0.05$
- Mean differences in pharmacist scores on HF quiz analyzed with the paired and unpaired Student's t-test, two-tailed $p \leq 0.05$

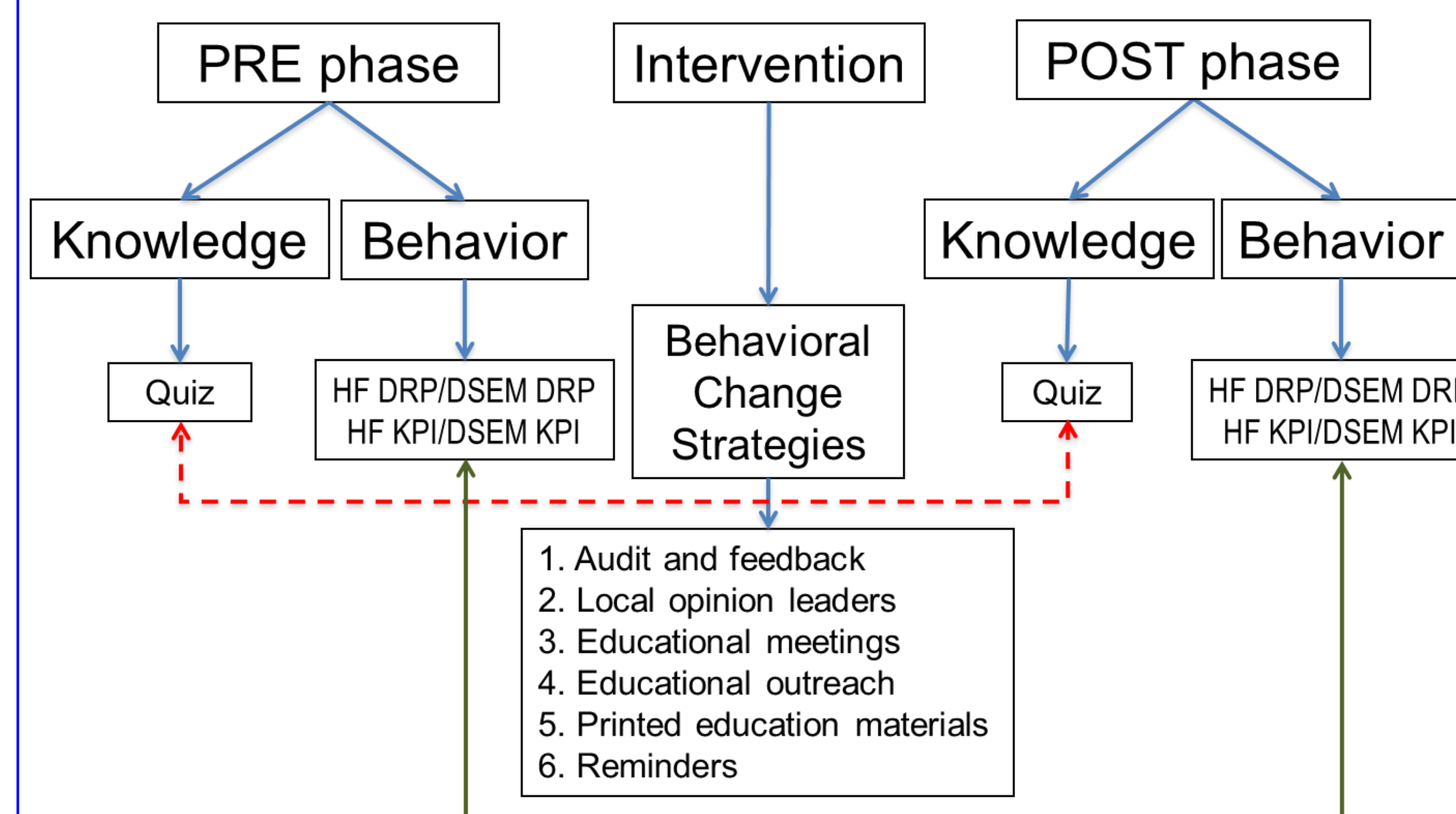


Table 1. Intervention Coverage

Intervention	Provided*	Exposed**
1. Audit and feedback	100%	94%
2. Local opinion leaders	90%	100%
3. Educational meeting	79%	86%
4. Educational outreach	77%	86%
5. Printed education material	100%	92%
6. Educational outreach	100%	89%

* Based on information provided and attendance recorded

** Based on study participant POST intervention questionnaire

Figure 1. Knowledge Translation

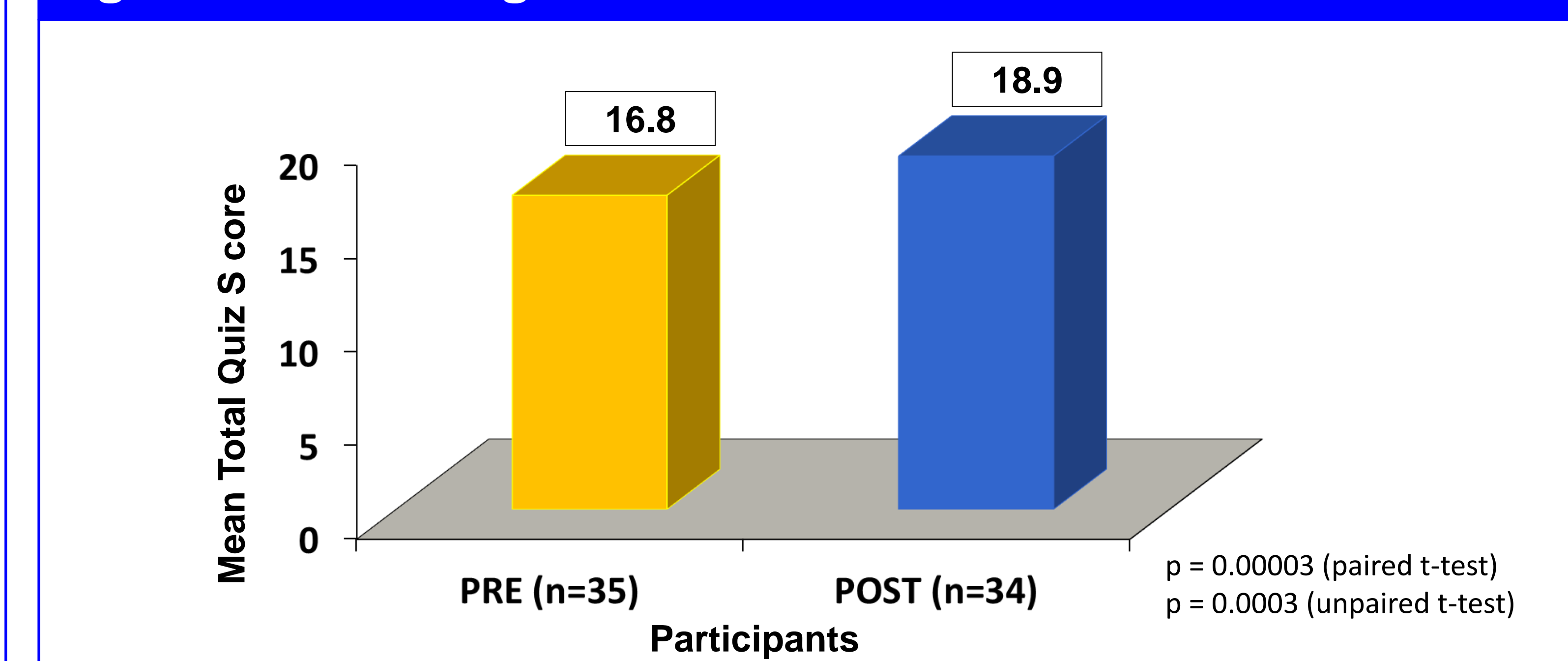


Table 2. Behavioral Change

Outcome	PRE	POST	p-value	RRI (95% CI)	ARI (95% CI)
1° HF DRP/ DSEM DRP	453/4732 (9.6%)	291/2032 (14.3%)	<0.0005	49.6% (29.9 - 72.1%)	4.7% (3.0 - 6.5%)
2° HF KPI/ DSEM KPI	154/3468 (4.4%)	128/1483 (8.6%)	<0.0005	94.4% (53.9 - 145%)	4.2% (2.6 - 5.8%)

PRE: Jul 1/12 to Dec 31/12; POST: Feb 1/13 to Mar 31/13; RRI: Relative risk increase
ARI: Absolute risk increase; CI: Confidence interval

Conclusions

- Bundled multifaceted proven professional behavioral change strategies significantly improved knowledge translation for HF therapeutics and modified behavior of IH clinical pharmacists as assessed by several process of care measures
- Bundled behavioral change strategies should be provided after future DSEMs to improve knowledge uptake and care of patients with priority diseases

