

Supplementation File 3. Specifications of implementation strategies within DRAUP program for reporting

Strategies						
Domain	Education & Training	In person decision support	Audit & Feedback	Algorithm	Organizational Support	Planned Adaptation
Actor(s)	Clinician who is a nonexpert in the clinical innovation = EM senior residents/faculty	A team of clinician superusers who are providing in person decision support to innovation users = EM ultrasound faculty	Clinician who is expert in the clinical innovation and able to provide quality assurance treatment = EM ultrasound principle investigator	Clinicians who are implementing the clinical innovation based on created algorithm = EM senior residents/faculty	A team of clinicians who approve hospital policies = EM leadership	Clinician who is expert in the clinical innovation = EM ultrasound principle investigator
Action(s)	Didactic training; Training and Supervision: Reflect on the implementation effort, share lessons learned, support learning	Training and Supervision of pragmatic clinical decision support, encourage real time learning and immediate decision making	Audit feedback: Provides clinical supervision via review case implementation, make suggestions, and provide encouragement.	Checklist, pragmatic application of innovation	Propose changes to the current process to add innovation	Reflect on the implementation effort, share lessons learned, support learning, and propose changes to be implemented in small cycles of change.
Target(s) of the action (based on Morgan's framework)	Clinician attitudes and beliefs	Patient-Clinician interaction	Clinician attitudes and beliefs	Practice environment	Culture of healthcare consumption Culture of Professional Medicine	Culture of healthcare consumption
Identify unit of analysis for measuring implementation outcomes	Knowledge about the innovation, skills to use the innovation, and improved acceptability of innovation	Risk profile survey, intentions to use the innovation, social influences	Changes in compliance of algorithm, improved ability to access details about how to use the innovation without prompts	Knowledge about how to use the innovation in this context, intentions to use the innovation	Intention and enthusiasm to use the innovation, social influences	Knowledge about the innovation, skills to use the innovation, and improved acceptability of innovation, social influences
Temporality	Didactic training with lecture, assessment, clinical demonstration	Superuser available during clinical work F within two weeks of initial training.	Audit and Feedback occurring weekly by EM faculty quality assurance workflow, Bi-monthly email feedback provided to users	Visual dissemination, twice monthly reminders during resident conferences	Should be established in written policy before initial training	Summary assessment and research team consensus quarterly
Dose	Once for 60 minutes plus follow-up booster sessions during educational conferences	Once weekly for 4 hours for the first three months.	Audit-twice per week Individual feedback (email)-twice per month Summary Feedback to group-once a month	Algorithm creation- Once Algorithm dissemination-monthly	Once	Quarterly evaluation of implementation plan with strategies; Biannual modification/addition of strategy
Implementation outcome(s) affected	Adoption of the innovation, De-adoption of old process, fidelity to the protocol of the clinical innovation, penetration among eligible clients/patients	De-adoption of old process, fidelity to the protocol of the clinical innovation	Adoption of the innovation, De-adoption of old process, fidelity to the protocol of the clinical innovation, penetration among eligible clients/patients	Fidelity to the protocol of the clinical innovation, Uptake of the innovation, penetration among eligible clients/patients,	Uptake of the innovation, De-adoption of old process,	Adoption of the innovation, De-adoption of old process, fidelity to the protocol of the clinical innovation, penetration among eligible clients/patients
Justification	Research that suggests that post-training follow-up is more important than quality or type of training received. [31]	Incorporation of ongoing support (e.g., consultation) into training is potentially critical for effective implementation beyond brief training. [32]	Consistent with Feedback theory; Model of actionable feedback (timely, individualized, non-punitive, customizable) most likely to achieve effect size. [33-36]	An algorithm is defined as an operational version of a guideline that is adapted to local requirements and easy to apply in clinical practice. [38]	Theory of perceived organizational support suggests that employees' perceptions of an organization's commitment to staff will influence their work-related attitudes and actions. [36,37]	Planned Adaptation is a guide for adapting theory-based EBPs that directs practitioners to consider how population differences may relate to the content of program strategies and the theory of change. [40,41]

DRAUP, de-implementation of routine chest radiographs after adoption of ultrasound guided insertion and confirmation of central venous catheter protocol; EM, emergency medicine; EBP, evidence-based practice