



User-Centered Design to Improve Re-Triage of Injured Patients

David Jelke, **John Slocum**, My Nguyen, Lixuan Cong, Adithya Chandrasekaran, Andrew Berry, Yuriy Moklyak, Justin Mis, Timothy Loftus, Nicole Siparsky, William Brigode, Richard Fantus, Anne Stey

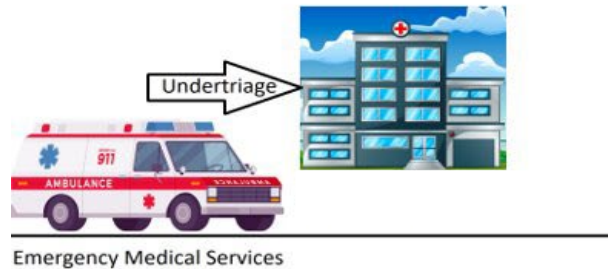
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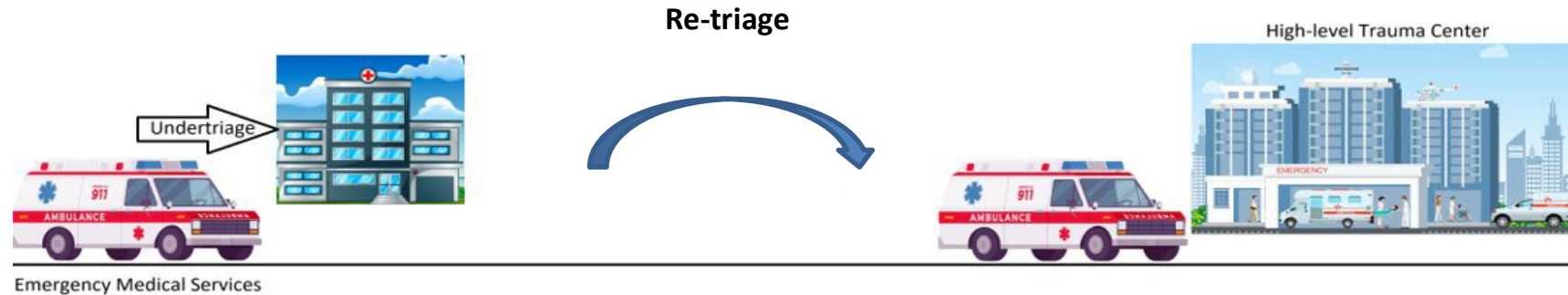
Under-Triaged Patients Have Higher Mortality



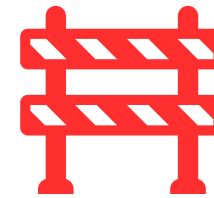
30% higher mortality
if not transferred
within 48 hours

Haas et al J Trauma and Acute Care Surgery 2012
Nirula et al J Trauma 2010
Vassar et al JACS 2003

Re-Triage Saves Lives



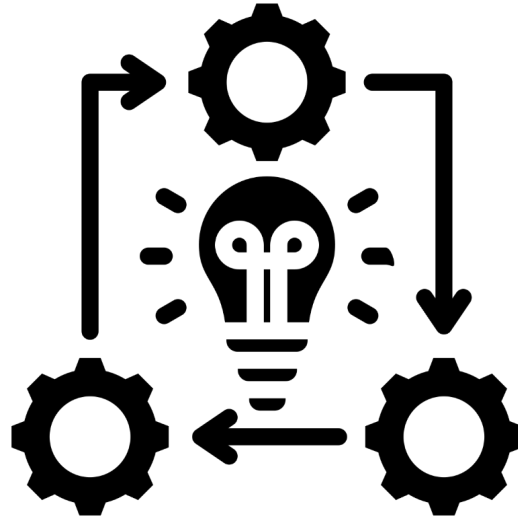
30% higher mortality
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30-50% of under-
triaged patients are
never re-triaged

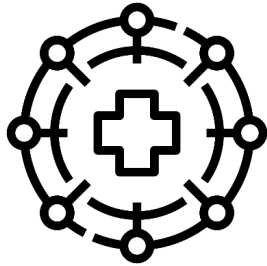
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Study Aim

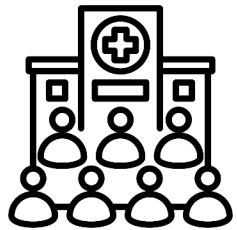


Engage multidisciplinary trauma teams and inform design of an intervention to improve timely, effective re-triage

Mixed Methods Study



10 Non-trauma, Low-Level & High-Level Trauma Centers



27 Trauma Clinicians & Staff

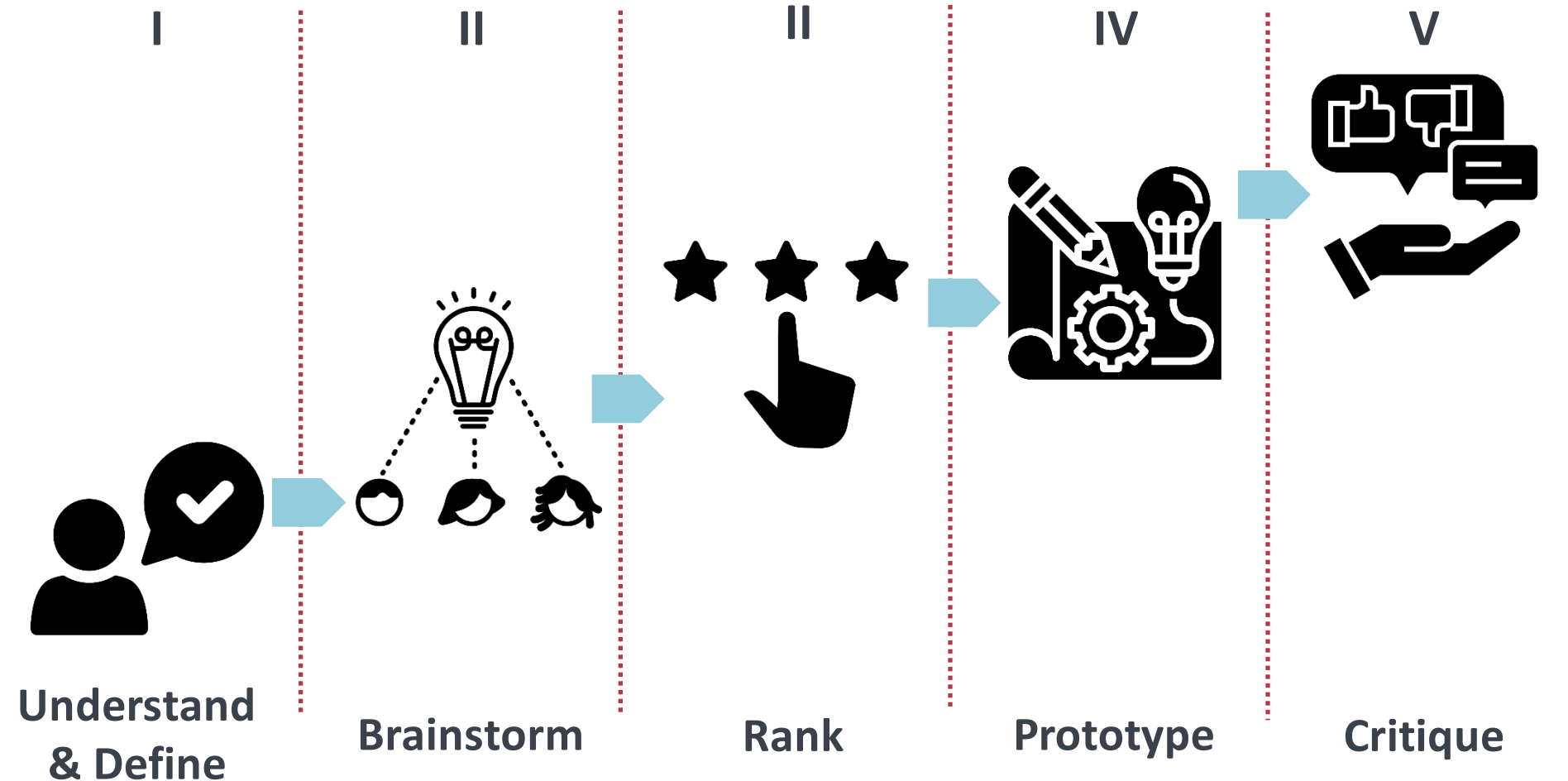


User-Centered Design

Role	Number of Participants
Trauma Medical Director	2
Emergency Department Director	2
Trauma Surgeon	7
Emergency Medicine Physician	1
ED Nurse Manager	3
ED Bed Manager	1
Trauma Coordinator	5
ED Nurse	2
Health Unit Coordinator	1

User-Centered Design Can Create an Intervention to Address Process Failures

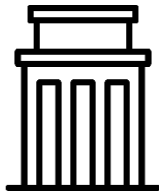
Phases:



Phase 1: Understand & Define

CENTRAL THEME

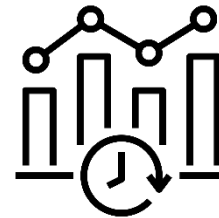
Clearly aligning process owners during exchange of time-sensitive information can improve re-triage



Institutional
Constraints on
Re-Triage



Technological
Constraints on
Re-Triage

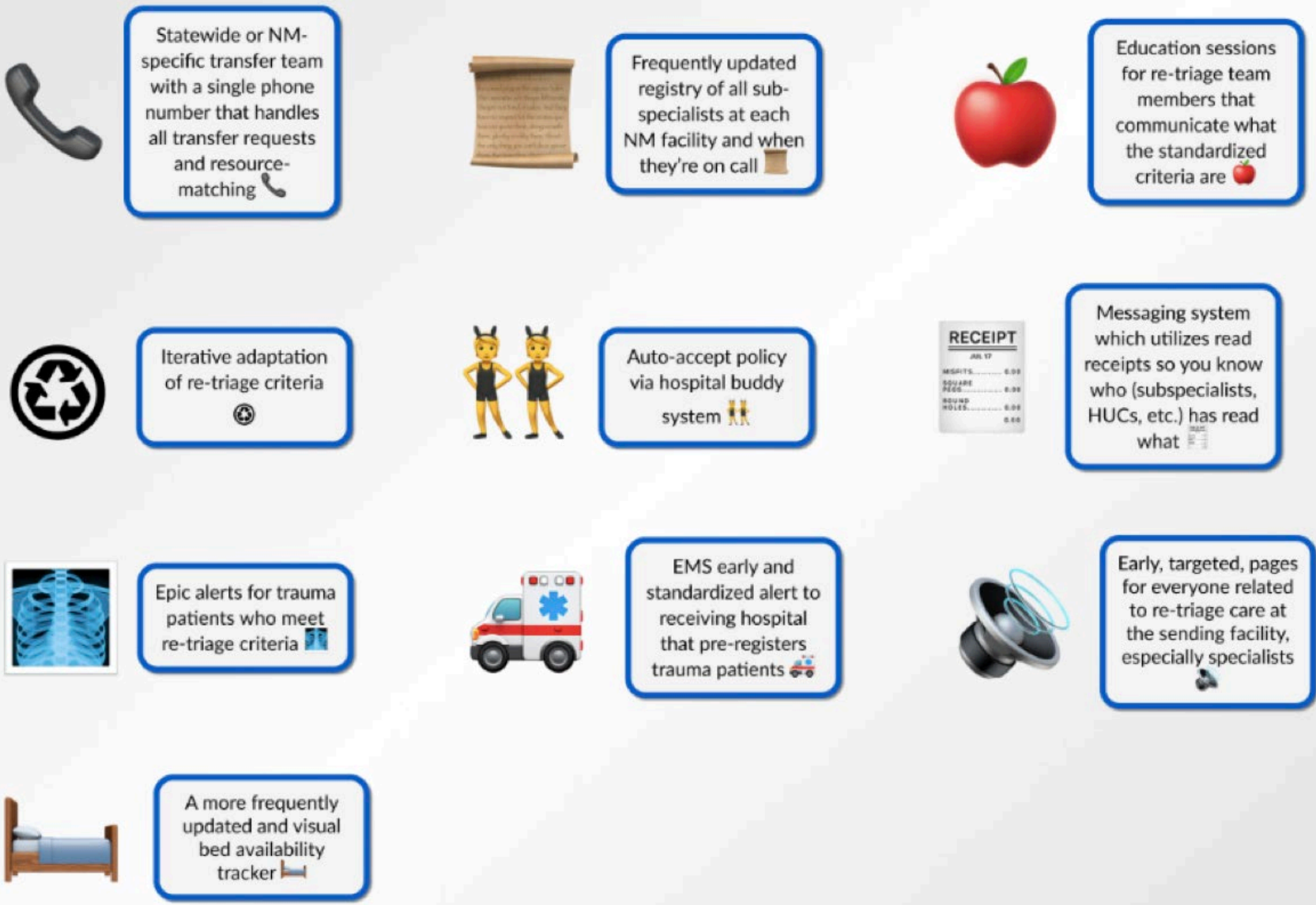



Limited Real-
Time Bed
Availability Data

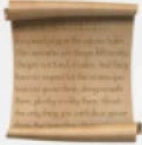



No Clear
Ownership Over
Re-Triage Steps


Phase 2: Brainstorming





 Statewide or NM-specific transfer team with a single phone number that handles all transfer requests and resource-matching 📞


 Frequently updated registry of all sub-specialists at each NM facility and when they're on call 📜


 Education sessions for re-triage team members that communicate what the standardized criteria are 🍏


 Iterative adaptation of re-triage criteria ♻️


 Auto-accept policy via hospital buddy system 👩🏻‍⚕️👨🏻‍⚕️

 Messaging system which utilizes read receipts so you know who (subspecialists, HUCs, etc.) has read what 📄

 Epic alerts for trauma patients who meet re-triage criteria 📱

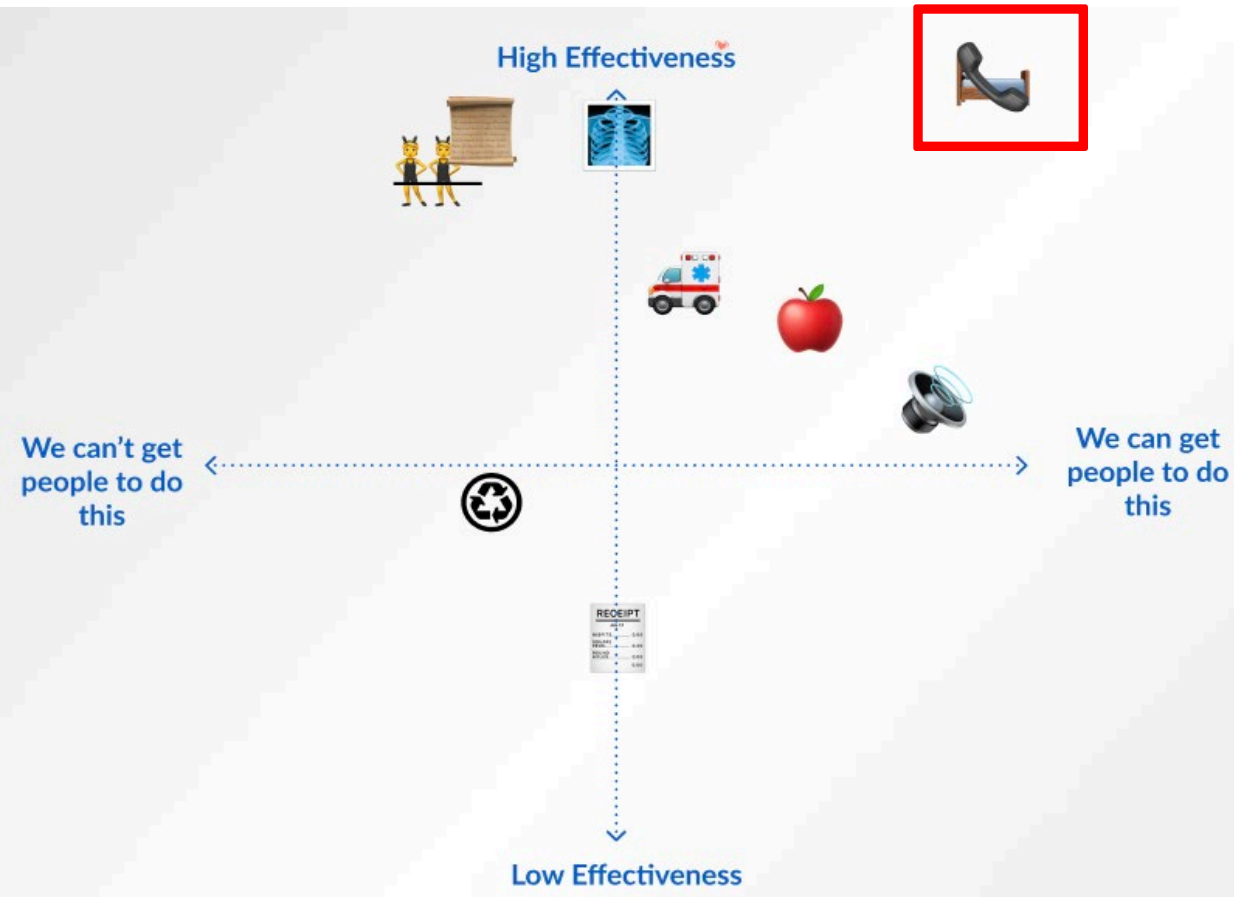
 EMS early and standardized alert to receiving hospital that pre-registers trauma patients 🚑

 Early, targeted, pages for everyone related to re-triage care at the sending facility, especially specialists 📢

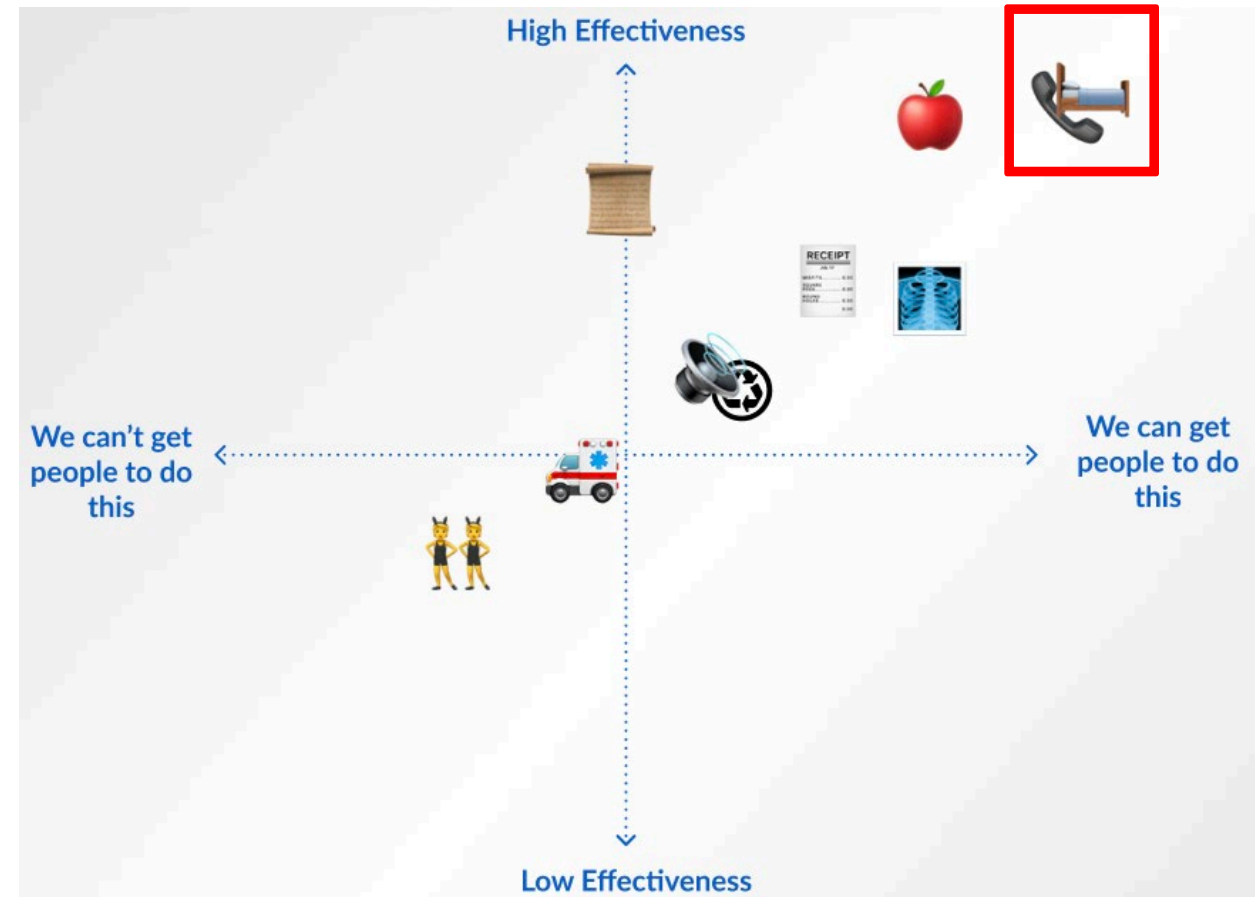
 A more frequently updated and visual bed availability tracker 🛏️

Phase 3: Ranking & Sorting

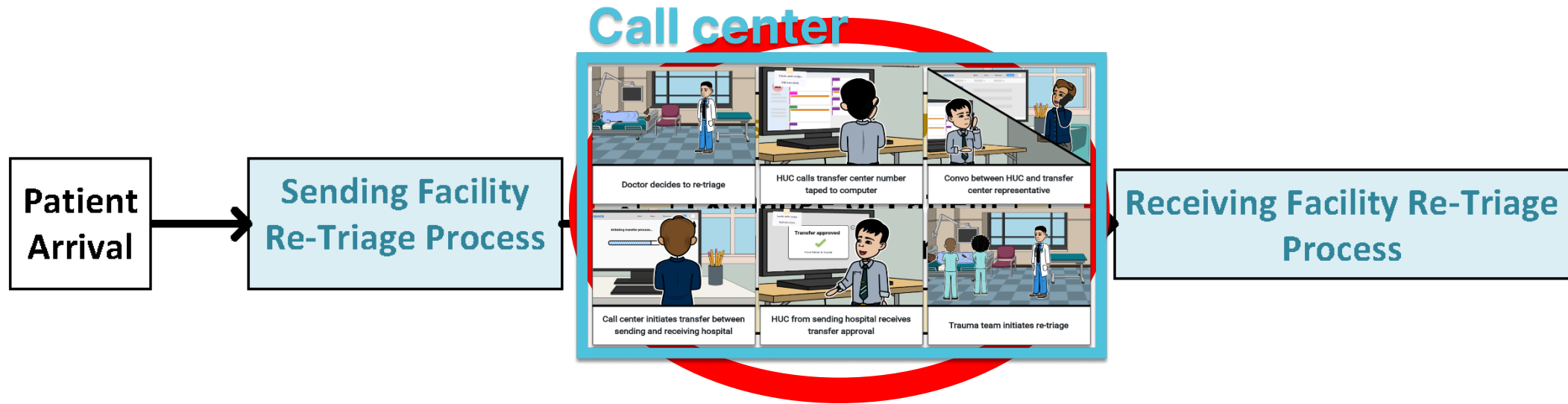
Group 1



Group 2

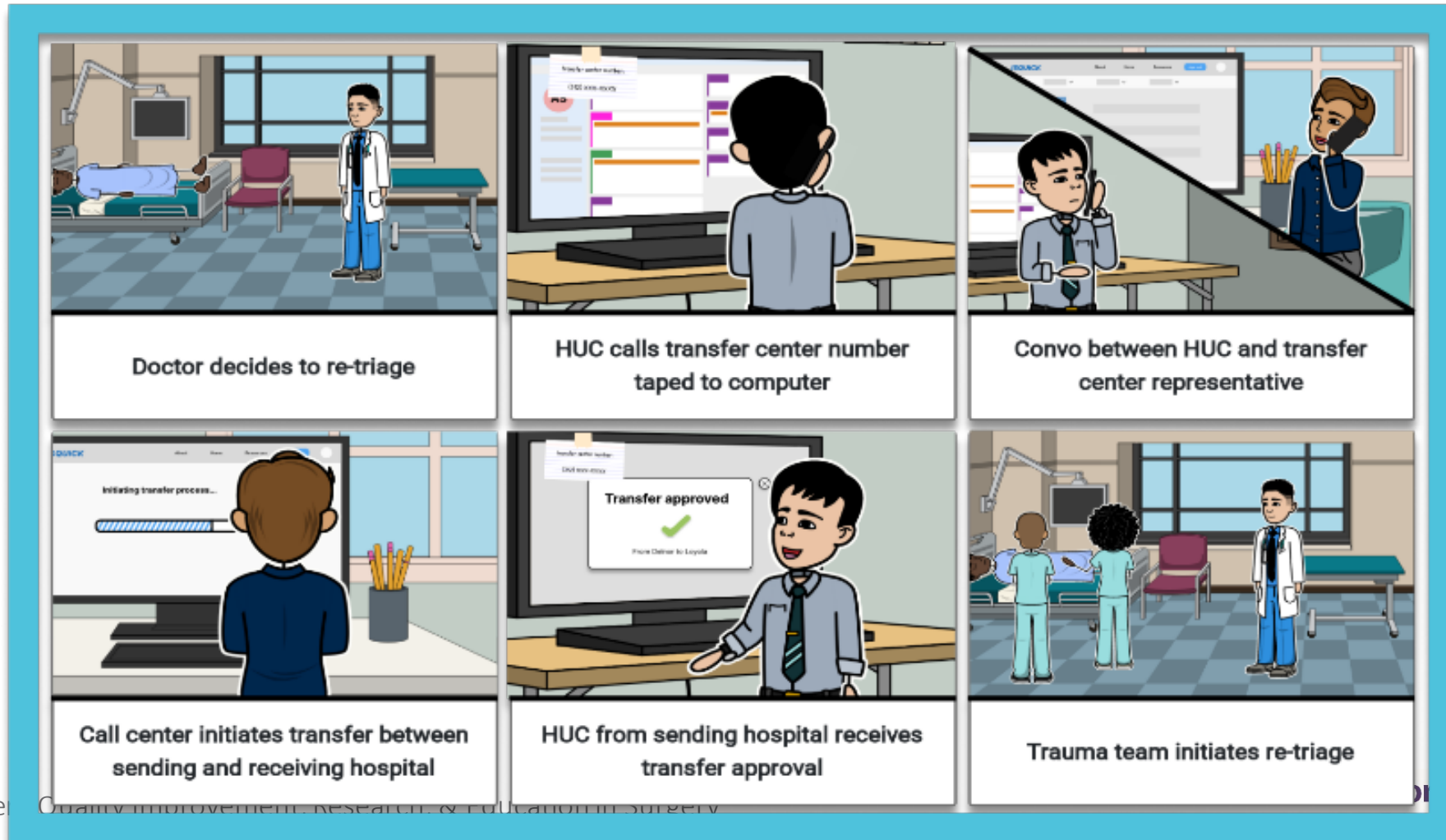


Phase 4: Prototyping



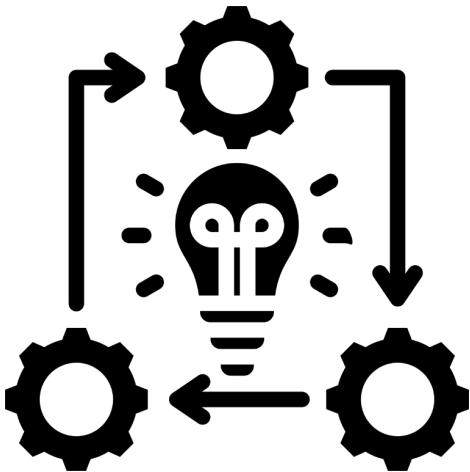
Phase 5: Critique

Call center





Conclusion



Transfer call centers are an intervention that define process owners for exchange of time-sensitive information

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