BEYOND THE MANUAL: BUILDING TRUST AND CONFIDENCE FOR G-TUBE ADMINISTRATORS

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Objective

How might we tailor better onboarding experiences for tube feeding administrators?

Introduction

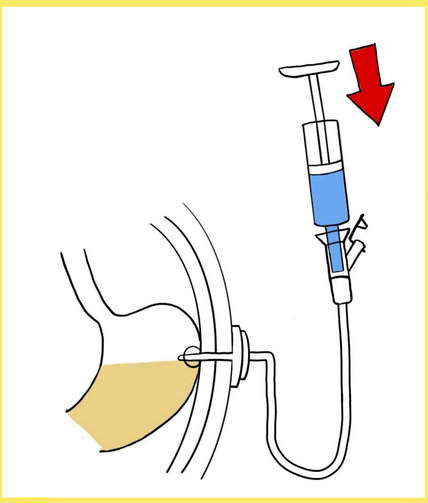
Patients requiring tube feeding will typically go to the hospital at least once in 6 months due to feeding-related complications.

Individuals on tube feeding

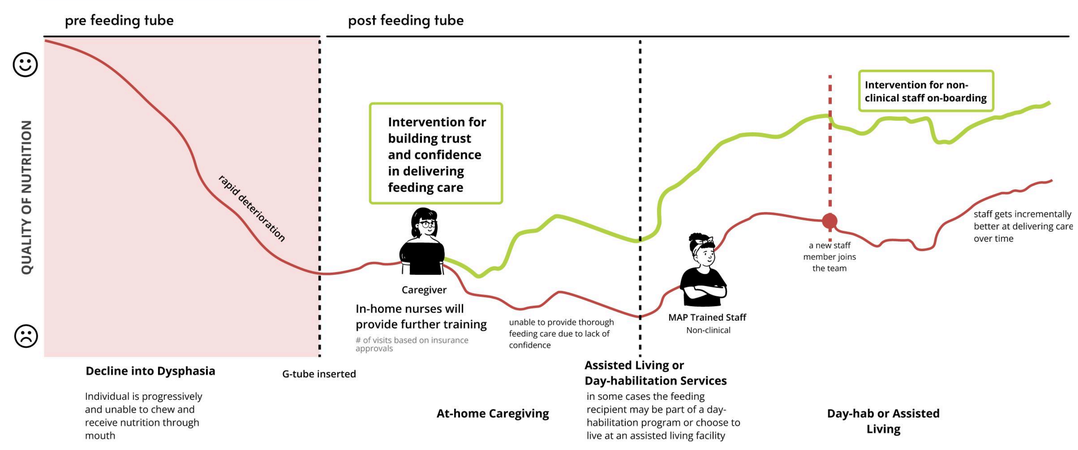
4x more often admitted into the ICU

6x longer in the ICU
over 4x longer in hospital

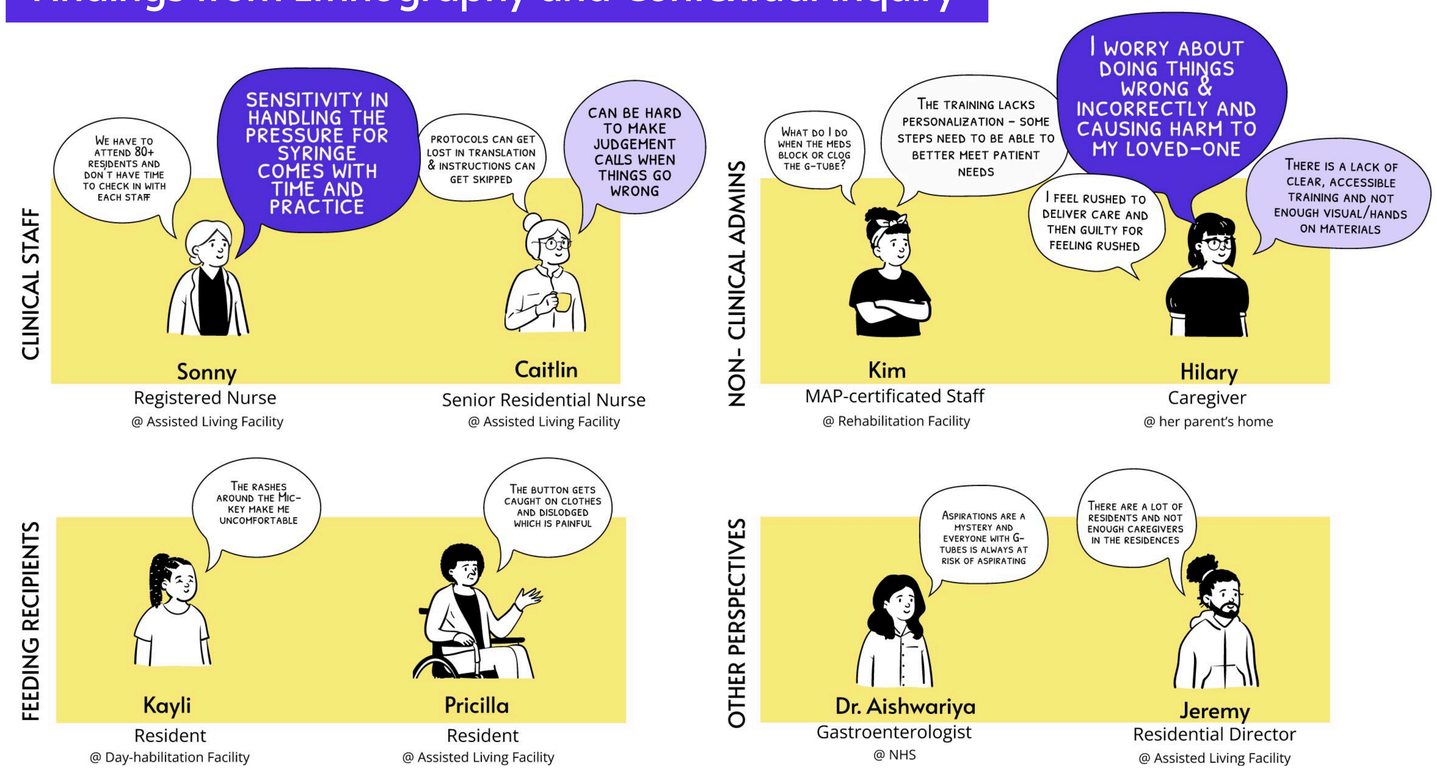
percutaneous endoscopic gastrostomy (PEG)
or
G-tube feeding is a regular part of long-term enteral nutritional support for individuals who can't safely eat or swallow, most often due to dysphagia.



Journey Map



Findings from Ethnography and Contextual Inquiry



Design Considerations

- **Visibility of System Status**
- **Portable Training Kit**
- **Match Between the System and the Real World**
- **MAP Protocol Compliance**
- **G-Tube Help and Documentation**
- **Clear Internal Labeling & Instructions**
- **Easy access to all required supplies**
- **Support Iterative Learning**

Evaluation methods & Findings

We conducted:

- Scenario-based usability testing
- Observation studies tracking errors, pauses, and technique
- Think-aloud protocols capturing real-time feedback

Participants reported:

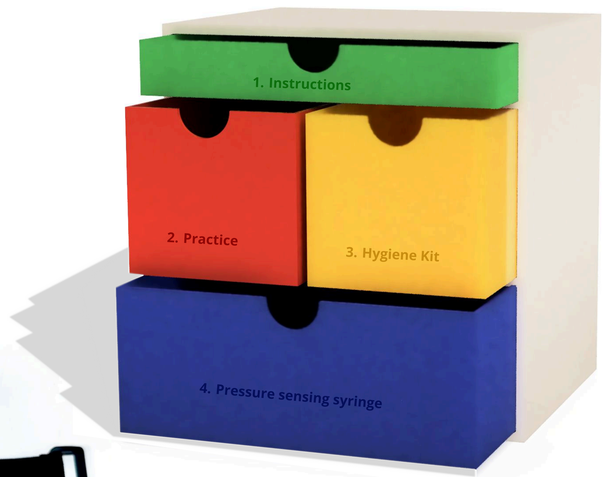
- Increased confidence with MIC-KEY setup after using the pad
- Immediate correction of pressure-related errors using syringe feedback
- Reduced anxiety thanks to checklist and visual guidance

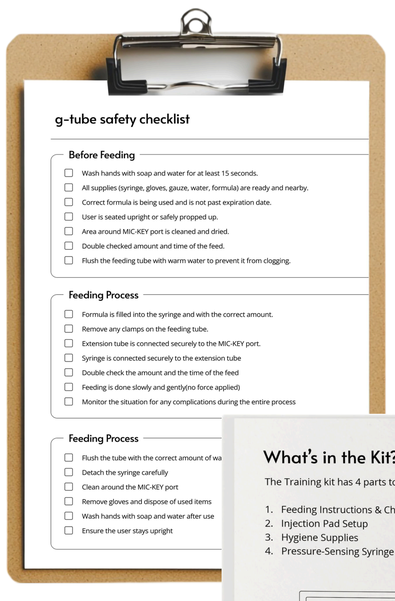
Our Solution

our project proposes

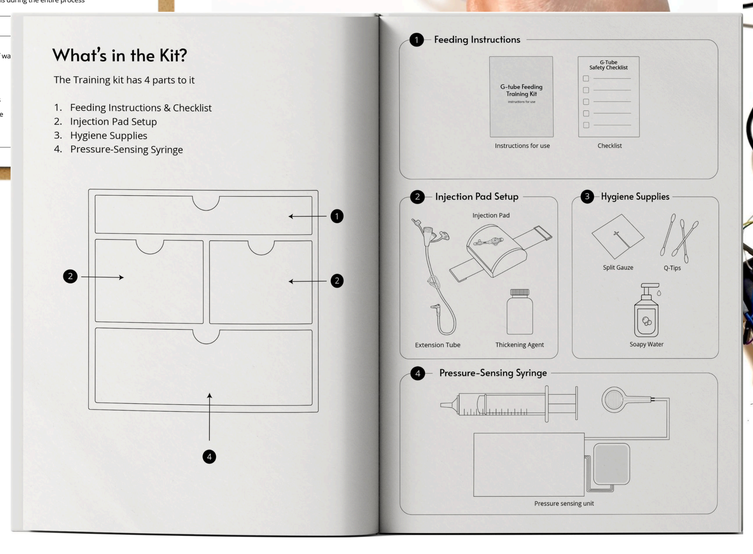
a structured training program designed to reduce feeding tube accidents

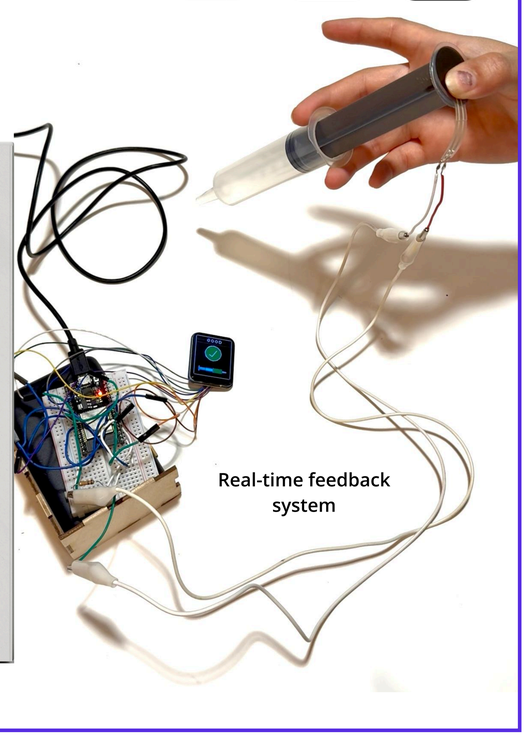
by improving **knowledge retention**, **procedural adherence**, and **situational awareness** among administers.





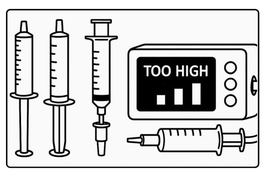
Simulated MIC-KEY button



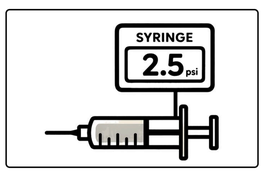


Real-time feedback system

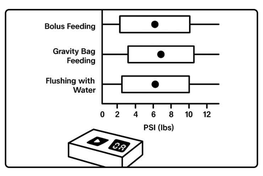
Future Steps



Syringe Type Calibration for Flushing and Feeding Pressure

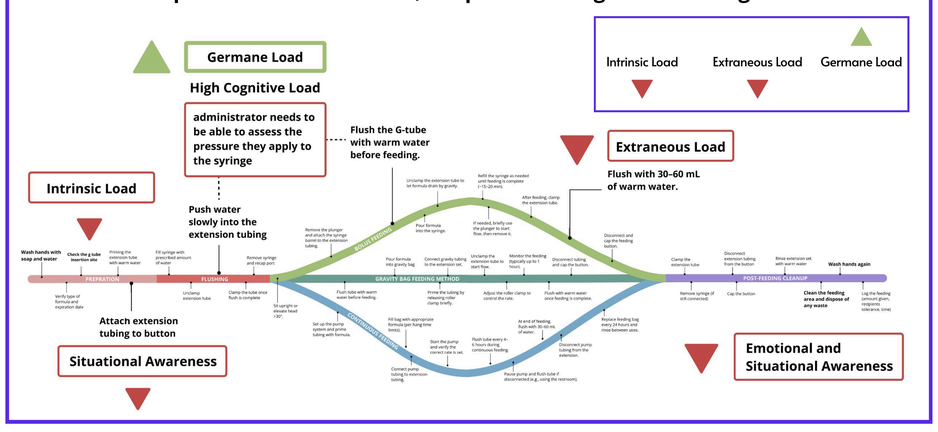


Real-Time Monitoring of Syringe Content Pressure



Normalized Pressure Ranges Across Feeding Scenarios

These steps aim to build smarter, adaptive training to reduce cognitive load.



Reflections

Empowering the User

Lessons in co-design and participatory design

Build Early + "Fail" Early

Balancing prototype fidelity and distractions

No such thing as linear

Design is complex but not as complex as the human emotion

This project showed us how Human Factors can transform safety, not through complexity, but through clarity, empathy, and thoughtful design.