

Collapsible NCD Needle



From left to right: Brady Krueger, Devin Steenberg, Aaron Peters & Aiden VanBeck.

PROJECT SUMMARY:

The prevalence of collapsed lungs in combat necessitates the use of NCD (Needle Chest Decompression) needles. Our project aims to create a device which can be used by trainees to simulate the actual application of these life-saving devices.

DESIGN GOAL:

The goal of our design is to provide soldiers in EMS training with the ability to simulate the real application of NCD needles. This is accomplished by realistic dimensions, realistic resistive forces, and realistic haptic feeling being put into the package of a training NCD needle. It must stay compact and cost-effective, so as to maintain usability and cost.



CAD Geometry
of NCD device



U.S. ARMY TEAM 21

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DESIGN CONSTRAINTS:

- The training NCD needle shall not exceed specified dimensions
- The training NCD needle shall replicate the resistive forces presented by real human tissue when applying the actual NCD device
- The training NCD needle shall replicate the haptic feeling of the actual NCD device
- The training NCD needle shall have less cost per use than the actual NCD device