

# INTRODUCTION

Severe bleeding is a life-threatening emergency requiring immediate intervention, as bleeding out can occur within 3-5 minutes. EMS response times, especially in rural areas, often exceed 14 minutes, worsening survival chances. Prompt application of hemostatic measures within 5-10 minutes is crucial to reduce fatalities. The Insta-Gash, a device that quickly approximates wound edges, promises to cut the time to bleeding control. While staples are effective, no current tool combines rapid application with ease for pre-hospital use. This study evaluates Insta-Gash's potential to bridge the critical gap between injury and professional care, improving outcomes in severe hemorrhage cases.

## METHODOLOGY

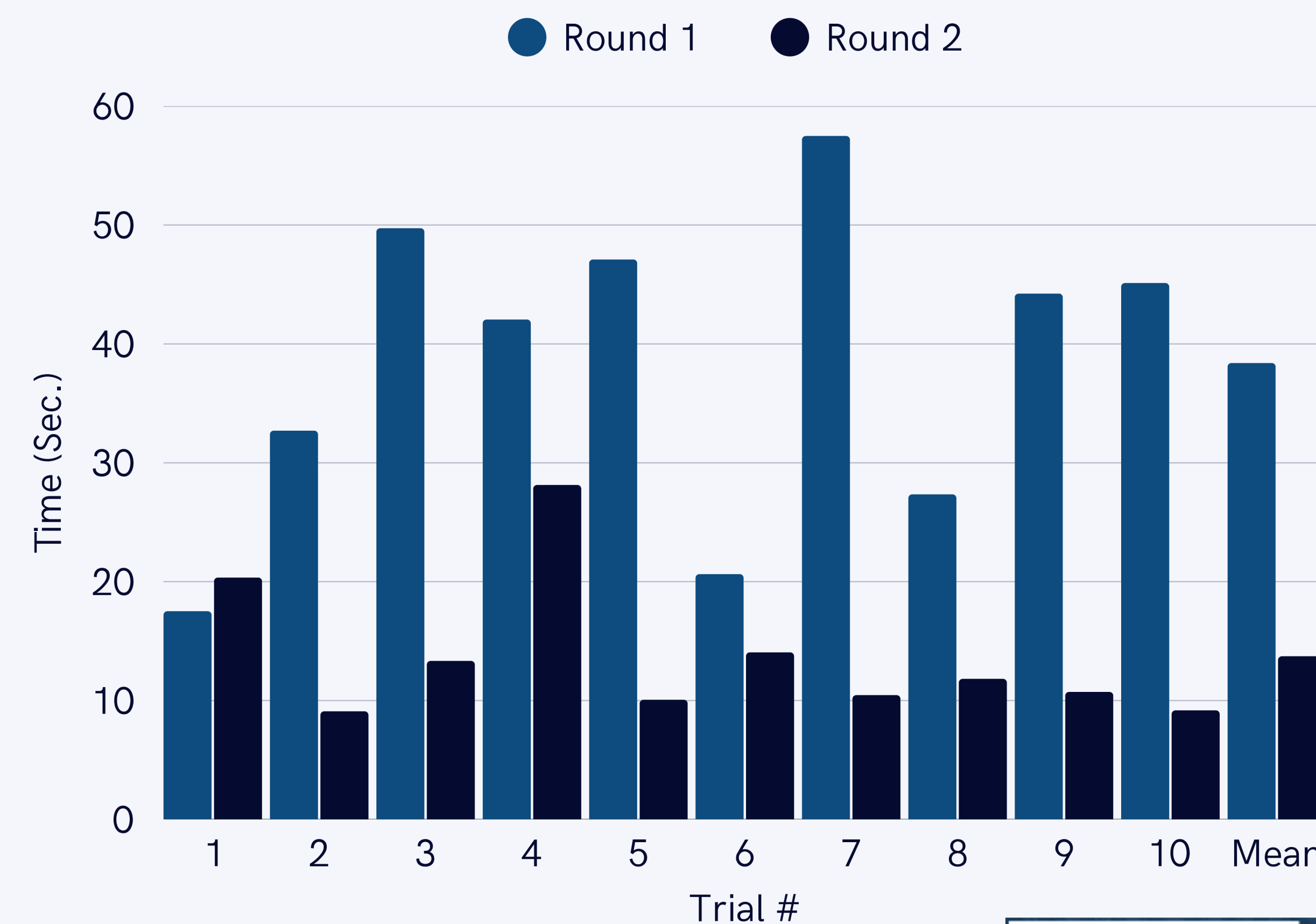
First, users will undergo a training scenario on a model wound to measure application time and instruction clarity. Second, the device's sealing capability will be tested on silicone or tissue models by measuring wound surface area reduction. Additionally, hands-on trials with students at Elkins High School over two weeks will assess intuitiveness and efficiency. Participants will attempt device application unassisted, with timing and observations recorded. Success will be based on application within a set time and completion, with qualitative feedback gathered to improve design. Data analysis will identify trends and ensure the device's accessibility and functionality.

# Insta-Gash: Developing an Intuitive, Portable Wound Care Kit to Improve Emergency Trauma Response

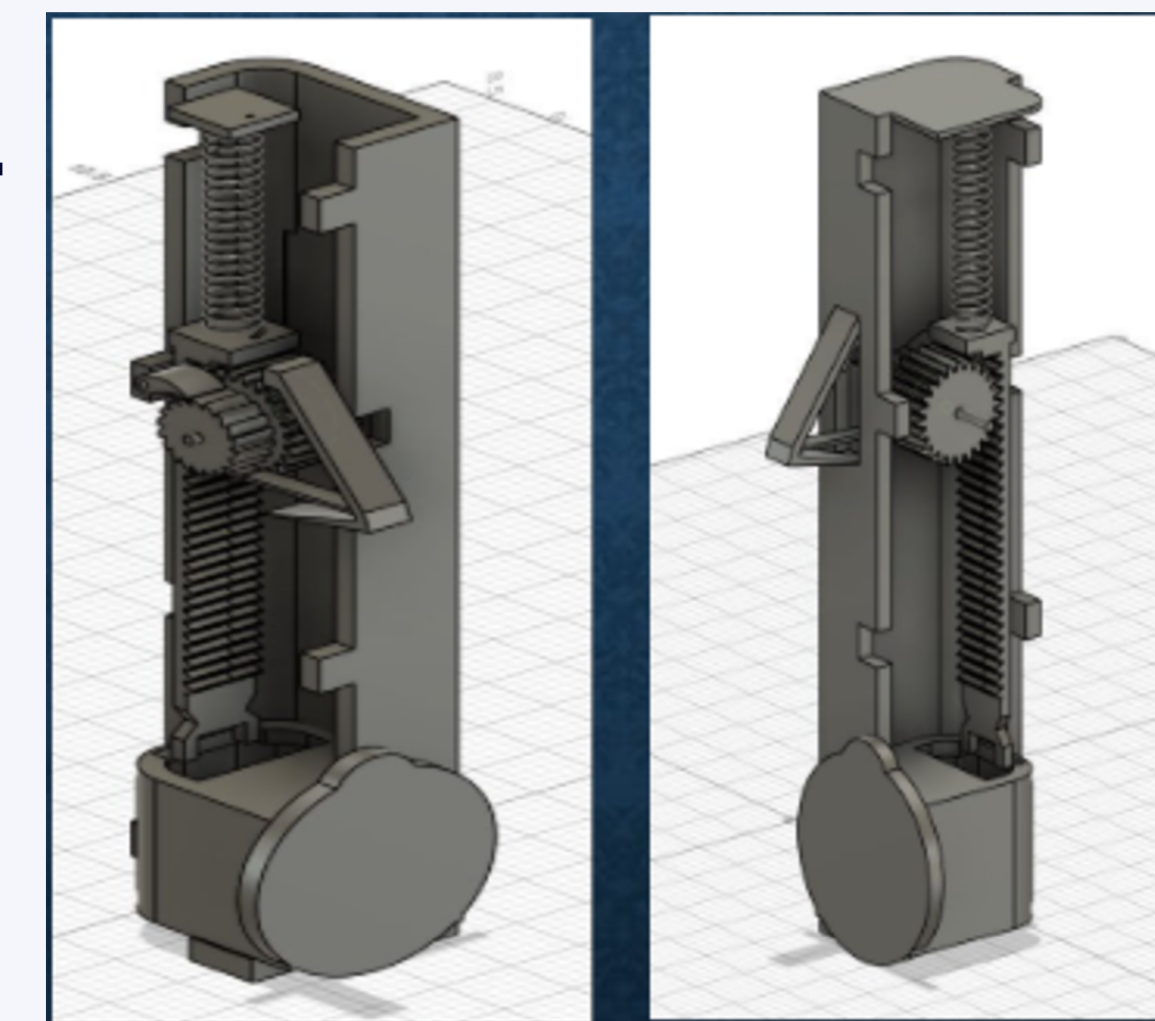
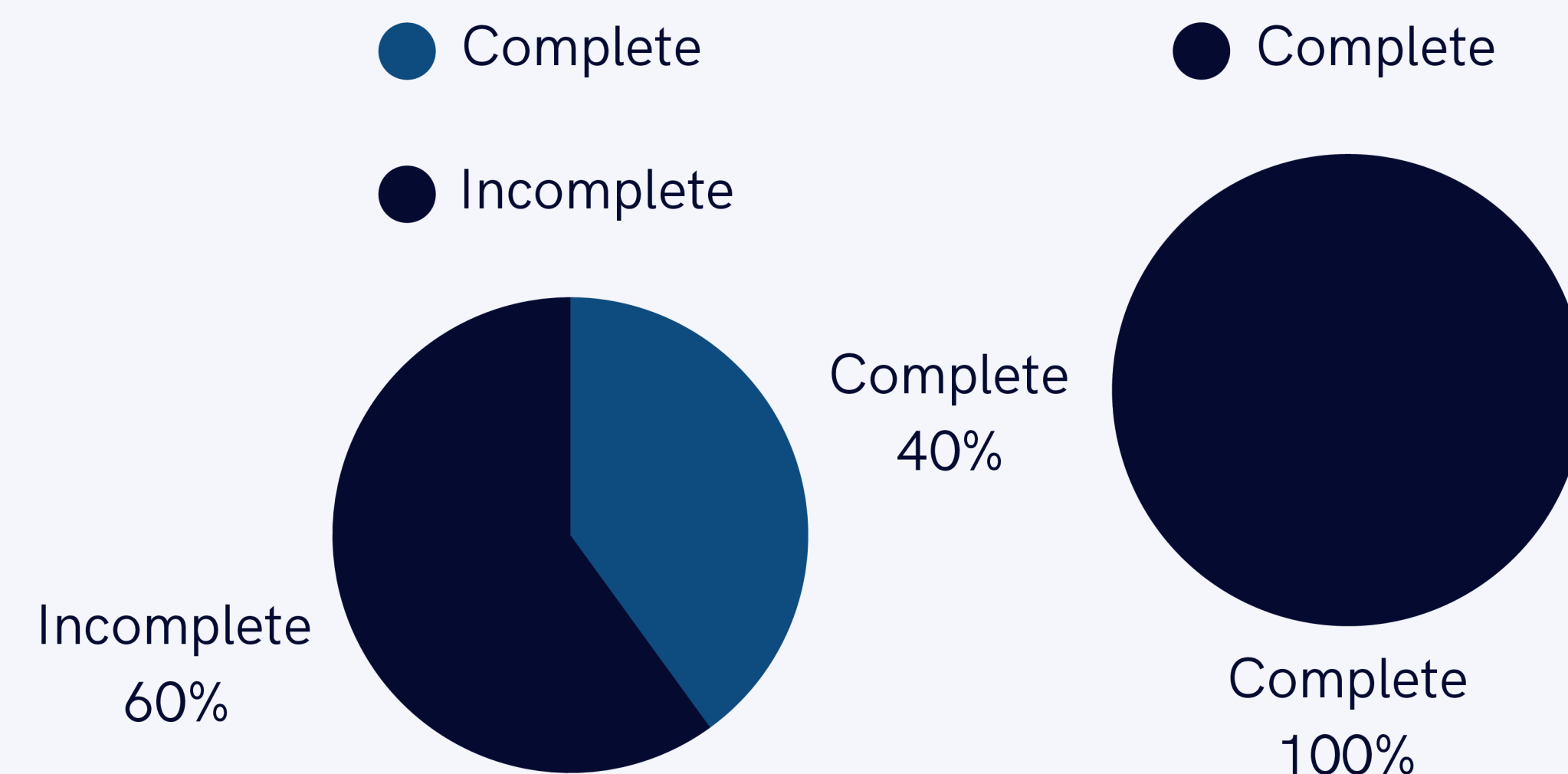
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## TIMED TRIAL RESULTS FOR INSTA-GASH PROTOTYPES)



# COMPLETION RATE OF ROUNDS 1 AND 2



## FINDINGS

Experiments evaluated both usability and effectiveness of the Insta-Gash. Usability was tested by timing potential users applying the device on a model wound; effectiveness was measured by wound seal quality on tissue models via surface area reduction. Initial trials showed an average application time of 38.39 seconds, improving to 13.72 seconds after providing clear instructions. Data indicated top ratings for instruction clarity (100%) and device form factor (90%). Challenges included awkward handling and malfunctions, indicating design changes are needed. Overall, clear guidance significantly enhances usability, and the device demonstrates potential for emergency bleeding control by non-medical users, making it a promising addition to first-aid kits.

## DISCUSSION

From this data, the Insta-Gash product will be refined for real-world use and pursue FDA Class II clearance to validate safety, efficacy, and enable wider distribution. Continued testing with medical-grade materials will ensure durability and safety in high-stress trauma.

Simultaneously, an online retail platform is planned for civilians, outdoor professionals, and first responders. We will seek contracts with the Department of Defense for military applications and collaborate with hospitals to incorporate the kit into paramedic training. These steps will establish Insta-Gash as a trusted, field-ready wound care solution.