



# Using Lean Management to Improve the Efficiency of Medical Supply Access for Disaster Medical Assistance Teams - A Case Study of Hualien County Disaster Medical Team

KEYWORD : Lean Management, modular programming, Logistic, DMAT

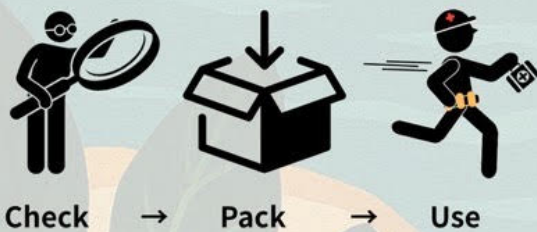
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## Introduction

The Hualien County Disaster Medical Team, founded in 2018, identified delays in locating medical supplies during major earthquakes and a 2021 train derailment. To improve efficiency, **lean management principles** were applied to design **modular medical waist bags** and **tactical belts**, aiming to **reduce retrieval time** and **enhance operational performance** in the field.

## Methods

### 3 Steps (CPU)



<b>MODULAR BELT</b> SIZE: 150*5.5*0.5cm (L × W × H) PURPOSE: Carry modular kits CONTENTS: Injection, Trauma, Triage, Immobilization, Personal Items Kit	<b>TRAUMA KIT</b> SIZE: 15*9*20cm (L × W × H) PURPOSE: Wound cleaning and dressing CONTENTS: Gauze pads, Swabs, 3M tape, Dressing scissors
<b>TRIAGE KIT</b> SIZE: 7*7*15cm (L × W × H) PURPOSE: Triage classification and marking CONTENTS: Triage tags	<b>INJECTION KIT</b> SIZE: 11*6*16cm (L × W × H) PURPOSE: Injection preparation CONTENTS: Tourniquet, Alcohol pads, IV cannula, Syringes, Opsite
<b>PERSONAL ITEMS KIT</b> SIZE: 12*8*19cm (L × W × H) PURPOSE: Personal protection and hygiene CONTENTS: Hand sanitizer gel, Mask, Gloves	<b>IMMOBILIZATION KIT</b> SIZE: 12*8*19cm (L × W × H) PURPOSE: Stabilize fractures or joint injuries CONTENTS: Soft splint, Elastic bandage, Triangular bandage

## Results

Initially, **tactical kits** were restocked by logistics, taking an **average of 5–7 minutes**.

**Tactical belts** saved an **average of 2 minutes** in locating items.

## Conclusion

Every second counts. Applying lean management to DMAT logistics design - "**Modular Tactical Medical Waist Bag**" and "**Tactical Belt**" - **reduces the time** consumed in inventory management, enables faster acquisition of necessary items in unfamiliar environments, and **improves Efficiency of disaster medical response**.

User Satisfaction Before And After Improvement

