

# User Centred Design:

## The Design of Ambulances and Related Equipment

### What is User Centred Design (UCD)?

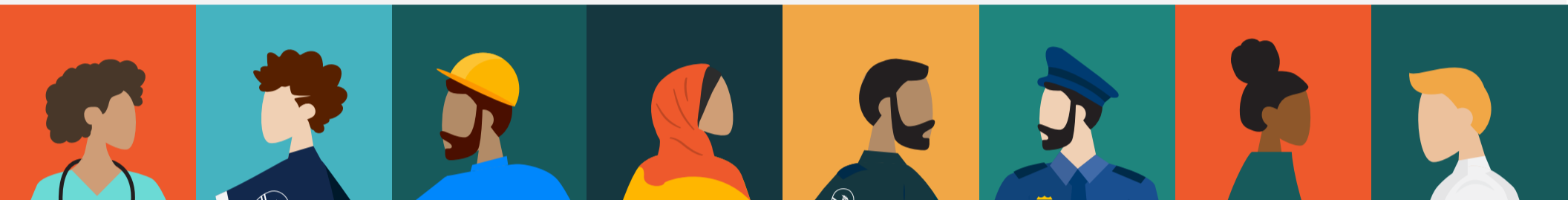
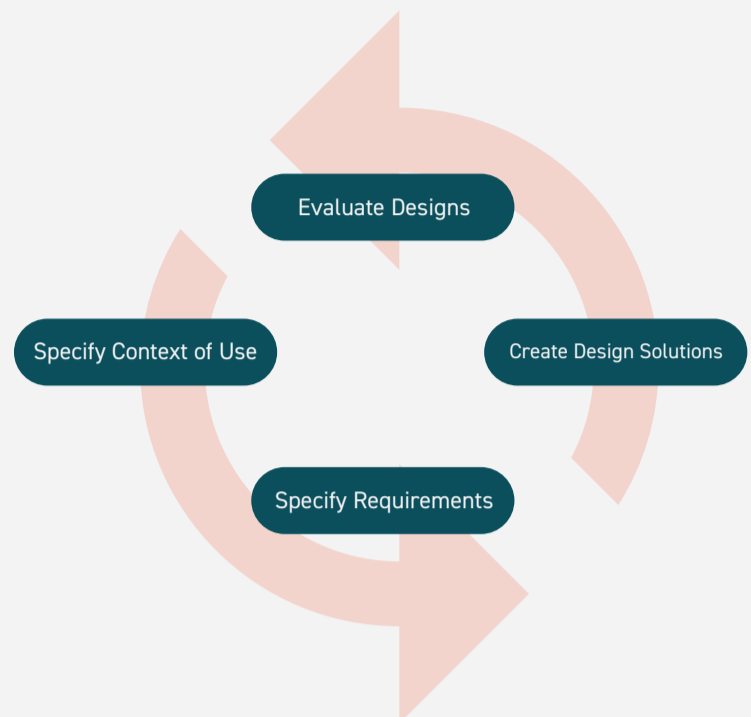
An approach to designing the environment for users, or to develop products, systems, layouts, and other items that aim to design the environment for users. It seeks to apply information from users who are affected by the process.

### Who Should Use It?

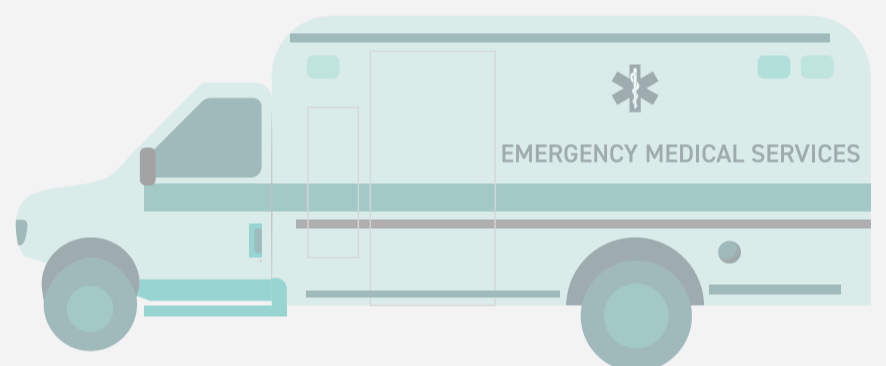
A multidisciplinary team of paramedics, managers, and design engineers.

### How Does It Work?

- define and understand the context of use;
- specify user requirements;
- create design solutions; and
- evaluate designs against requirements.



## The 10 Steps to Apply Ergonomic UCD In Ambulance Design



- 1. Identify target population:** paramedics, patients, fleet staff, and any other populations affected by the design.
- 2. Identify target population relevant characteristics** (e.g., body size, visual abilities, literacy, skills, knowledge).
- 3. Accommodate the full range of physical dimensions** using anthropometric database of the target population.
- 4. Use task analysis methods** to identify and describe the demands, goals, and intended outcomes of each task.
- 5. Identify Physical (vibration), emotional (stress) organizational (workplace practices), social (attitudes and culture), and legal characteristics** (specific requirements imposed by the authority having jurisdiction) that influence the design.
- 6. Apply ergonomic design consideration and requirements**
- 7. Ensure additional requirements are considered** to address human performance and health, safety, wellbeing and comfort of end of users
- 8. Create design concepts** that are reviewed by paramedics, managers and designers
- 9. Evaluate early-stage design concepts** against human factor and ergonomics criteria
- 10. Develop physical mock-ups and props** to evaluate later stage design concepts.

The information on this infographic is adopted from the Canadian Standard for Ergonomic Design of Ambulances and Related Equipment, CSA D500:20.  
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