























Global Trauma Personas

Understanding the case mix of
patients undergoing a trauma
laparotomy worldwide

October 2025

Summary of the Persona set

Persona	Cluster size	Age	Mechanism of injury	Method of transport	Severity of injury
 Khalid	25% 	28	Penetrating	Private vehicle	Moderate
 Juan	15% 	25	Blunt	Private vehicle	Moderate
 Obi	8% 	28	Penetrating	Private vehicle	Severe
 Bekena	12% 	28	Penetrating	Private vehicle	Moderate
 Somchai	4% 	44	Blunt	Air ambulance	Severe
 André	5% 	58	Blunt	Ambulance	Severe
 Fayza	7% 	23	Blunt	Private vehicle	Moderate
 Silvia	9% 	52	Penetrating	Ambulance	Moderate
 Elif	8% 	58	Blunt	Ambulance	Moderate
 Aleksander	7% 	26	Blunt	Ambulance	Critical

Overview

The use of personas enables a deeper understanding and appreciation of the diverse patient population involved in trauma system design and development. The personas presented here reflect common presentation patterns among patients who undergo trauma laparotomies across the world and are intended to support a design process that fully represents the spectrum of trauma care.

Using four key variables – Age, Mechanism of Injury, Method of Transport, and Injury Severity Score – we identified ten distinct patient clusters through k-means clustering from the GOAL-Trauma dataset (goaltrauma.org). These variables were selected from a broader set for their ability to generate clearly defined and well-separated clusters. Although the clusters do not encompass the full range of population variation within each setting, their use is encouraged when planning trauma process and services within a hospital or region.

Detailed narratives for each persona are provided below. For more information about the persona dataset and the methodology behind its construction, please contact our team at team@goaltrauma.org.



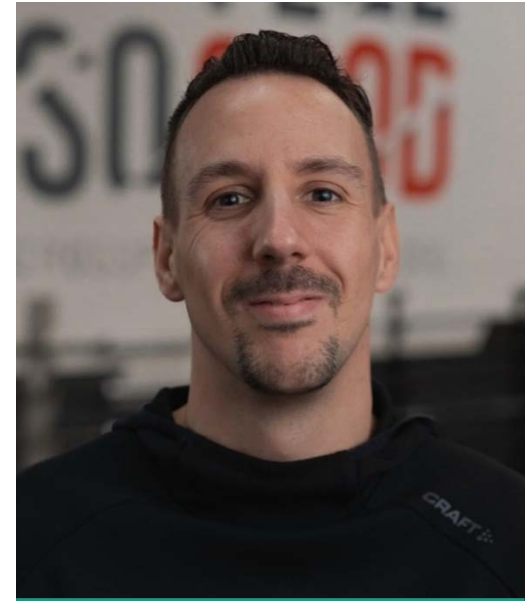
Persona 1: **Khalid**

Background

Khalid, 28, has just left a restaurant after dinner with friends and was walking home through a quiet street when suddenly a man on a moped approaches and rides next to him. Following a brief confrontation, the assailant shoots Khalid with a single shot in the abdomen and flees the scene with his wallet. Khalid collapses to the ground and lays there for some time before a passerby discovers him and calls for emergency help. A passerby calls their friend, who puts Khalid in the back of a car and drives him to the city's main hospital.

Arrival

He arrives at the hospital around four hours after the initial injury. On arrival, he is awake and alert, however his observations show he is tachycardic, and his blood test show a low haemoglobin level. Initial investigations show a suspected isolated injury to the left kidney that requires urgent operative intervention.



Age:	28
Mechanism of injury:	Penetrating
Method of transport:	Private vehicle
Severity of injury:	Moderate



Persona 2: Juan

Background

Juan, 25, was riding his moped through a suburban street when a dog suddenly darted into his path. In an attempt to avoid it, he swerved abruptly and collided with a bollard. The impact drove the handlebar straight into his abdomen, knocking him off the vehicle and onto the ground. He remained conscious, clutching his stomach and groaning in pain. A passerby who witnessed the crash quickly flags down a taxi and helps Juan into the back, directing it to the nearest health centre.

Arrival

At the nearby health centre, Juan is assessed, vital signs are stable, they place a peripheral cannula line and start intravenous fluids, however his abdomen is tender and distended. Staff there conclude he may have an internal organ injury, but they do not have the expertise or capability to manage him, so arrange for an ambulance to transfer him to the city's main hospital.

On arrival at this hospital, around 2 hours after the injury, his observations remain stable and his blood tests are unremarkable. However, he is in significant pain and diffusely tender in his abdomen on examination; the A&E doctor performs a FAST (Focused assessment with sonography for trauma) examination that shows likely free fluid in the abdomen and a decision is made that he requires an emergency operation.



Age:	25
Mechanism of injury:	Blunt
Method of transport:	Private vehicle
Severity of injury:	Moderate

Persona 3: Obi



Background

Obi, 28, was spending time with friends near a market stall when gunmen on mopeds suddenly arrived and opened fire. He was hit multiple times in the chest and abdomen. As people fled in panic, Obi collapsed to the ground. His brother, unharmed, stayed with him and quickly arranged for a private vehicle to take him to the main hospital. On route to hospital, they are met with heavy city traffic and are significantly delayed.

Arrival

On arrival to the hospital, around 4 hours since the injury, his observations are stable and Obi is awake and alert. A peripheral cannula is placed and intravenous fluids are started. The initial investigations show a small pneumothorax, deep laceration to his forearm, and a suspected small bowel injury that requires surgical intervention.



Age:	28
Mechanism of injury:	Penetrating
Method of transport:	Private vehicle
Severity of injury:	Severe

Persona 4: **Bekena**

Background

Bekena, 28, was working on his farm when armed robbers stormed the property, wielding machetes in an attempt to steal his cattle. During the attack, he sustained multiple superficial cuts to both arms and a deeper stab wound to the abdomen. Despite the chaos and once the robbers had fled, a friend managed to get him into the back of a car and drove him directly to the city's main hospital.

Arrival

He arrives at the hospital approximately 2 hours after the incident. Bekena's observations are stable and initial blood tests show a haemoglobin within normal range. However, on clinical assessment, given the size of the abdominal wound and the mechanism of injury, there is sufficient concern that there is a breach of the peritoneum and exploration of this is required in the operating theatre.



Age:	28
Mechanism of injury:	Penetrating
Method of transport:	Private vehicle
Severity of injury:	Moderate

Persona 5: **Somchai**

Background

Somchai, 44, was crossing a busy urban road on his way to work when he was struck by a fast-moving car. The collision threw him to the ground, where he lay motionless as nearby pedestrians rushed to help. Given the severity of the impact and the concern for polytrauma, emergency services dispatched an air ambulance to expedite his transfer to hospital.

Arrival

On arrival to hospital, his observations show a stable blood pressure with a persistent tachycardia. He has already received tranexamic acid and blood products en route in the air ambulance. On assessment by the A&E team, he has suspected severe injuries to his head, chest, and abdomen, with both the lactate and base excess very high. Initial investigations suggest a potential splenic laceration that warrants operative intervention.



Age:	44
Mechanism of injury:	Blunt
Method of transport:	Air ambulance
Severity of injury:	Severe

Persona 6: André

Background

André, 58, was heading home from work on his moped during early evening traffic. As he approached a junction, the car behind him attempted a risky overtake, forcing André to swerve sharply into the opposite lane, where he collided head-on with an oncoming vehicle. He was thrown off his moped and hit the ground with force, remaining motionless at the roadside. The driver of the oncoming car exited the vehicle and immediately called emergency services. An ambulance arrives after 20 minutes, finding André with a low blood pressure and having difficulty in breathing, with his oxygen saturation levels at 88%. They place a peripheral cannula and start intravenous fluids, and take him into the ambulance.

Arrival

He is taken to the city's major hospital, arriving around 2 hours after his injury. On primary examination, his oxygen levels and blood pressure remain low, so he is intubated in the A&E department and 2 units of whole blood are ordered. He has evidence of a severe trauma to the head, a visibly injured right upper limb, and generalised abdominal tenderness, with assessment suggesting severe visceral injury, presumed to be both a liver laceration and splenic laceration.



Age:	58
Mechanism of injury:	Blunt
Method of transport:	Ambulance
Severity of injury:	Severe

Persona 7: **Fayza**

Background

Fayza, 23, was cycling with friends on a quiet weekend route when she suddenly lost control of her pushbike, hitting an uneven patch of road. She fell forward and landed on a metal bollard, with the bollard pressing directly onto her mid-abdomen. Although she managed to get up, she began experiencing new-onset pain in the area shortly afterward. She otherwise felt okay at this point, therefore called a taxi and made her way to the local hospital.

Arrival

She is dropped at the hospital after 1 hour, however before reaching the hospital entrance, Fayza collapses in the car park, prompting a staff member to bring her through to A&E. She is now found to be tachycardic and hypotensive, and blood results show raised lactate and base excess. On further assessment by the A&E team, there are clinical signs suspicious for a severe pancreatic injury that requires urgent operative intervention.



Age:	23
Mechanism of injury:	Blunt
Method of transport:	Private vehicle
Severity of injury:	Moderate

Persona 8: Silvia

Background

Silvia, 52, was climbing a ladder to retrieve an object from the roof of her house when she lost her footing and fell directly onto the wooden garden fence below. During the fall, one of the upright fence poles penetrated through the left side of her abdomen, leaving her impaled and in visible distress. Her husband, who was inside the house at the time, heard the crash and ran out to find her on the ground, conscious but clearly in pain, and immediately called an ambulance.

Arrival

The ambulance arrives promptly and transfers Silvia to the region's main hospital, reaching A&E within an hour of her initial injury. Despite receiving blood products and tranexamic acid en route, her clinical status continues to decline. On arrival, her GCS has dropped, and she now presents with hypotension, tachycardia, and significantly elevated lactate and base excess levels. Given the obvious injury sustained, she requires an immediate trauma laparotomy.



Age:	52
Mechanism of injury:	Penetrating
Method of transport:	Ambulance
Severity of injury:	Moderate



Persona 9: **Elif**

Background

Elif, a 58-year-old woman, is walking home from the local market when she steps into the road and is struck by a high-speed moped. The impact throws her to the ground with significant force, and she remains motionless at the scene. A passerby witnesses the collision and quickly rushes to her aid, immediately dialling for an ambulance, which arrives after 45 minutes. On arrival, her observations show a tachycardia and they mobilise her cervical spine in a makeshift spinal collar due to the mechanism of injury.

Arrival

The ambulance arrives to the nearby hospital within an hour of sustaining the injury. Upon arrival to A&E, she is clinically deteriorating, with her vital signs show pronounced tachycardia and hypotension, with fluctuating consciousness. Following initial assessment, a severe vascular injury is suspected, however she soon becomes peri-arrest and needs to be taken to theatre urgently for a trauma laparotomy.



Age:	58
Mechanism of injury:	Blunt
Method of transport:	Ambulance
Severity of injury:	Moderate



Persona 10: Aleksander

Background

Aleksander, 26, falls from a three-story height whilst at work on the construction site, landing onto the exposed concrete below. Although he quickly regains consciousness, he has a visible deformity to his left arm and complaints of severe lower back pain. An ambulance is called by his co-workers, which arrives after 3 hours.

Arrival

Aleksander arrives at the city's main hospital several hours since the fall, however has received minimal intervention with the ambulance crew en route. He is tachycardic and hypotensive, and is now reporting intense pain in his chest, right arm, lower back, and abdomen. Initial assessment reveals a complex open fracture of the right humerus, a left-sided pneumothorax, and a pelvic injury. He becomes increasingly unstable, despite intravenous fluids, and therefore requires an urgent trauma laparotomy.



Age:	26
Mechanism of injury:	Blunt
Method of transport:	Ambulance
Severity of injury:	Critical



These personas were produced as part of a project to improve the design of trauma systems globally. It was funded by Engineering and Physical Sciences Research Council (EPSRC) and derived from data from the GOAL-Trauma (Global Outcomes After Laparotomy for Trauma) Study. The personas were created by the International Health System Group, as part of the Department of Engineering, University of Cambridge. The persona images were obtained from Pixabay under a free-to-use licence and are intended for illustrative purposes only.

