

# WHO CLINICAL REGISTRY

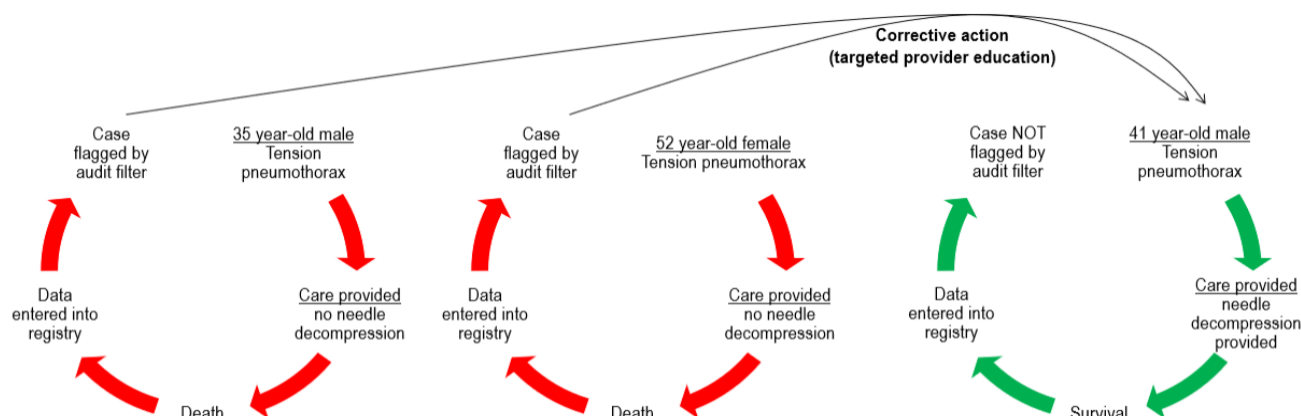
## BACKGROUND

Efforts to improve clinical outcomes for the acutely ill and injured are currently hindered by a lack of data. World Health Assembly Resolution 72.16 calls on countries to *implement mechanisms for standardized data collection to characterize the local acute disease burden and identify high-yield mechanisms for improving the coordination, safety and quality of emergency care worldwide.*

This work requires an understanding of how emergency care services are utilized at national and sub-national levels as well as the refined ability to identify current gaps in care across specific prehospital and facility settings. The lack of standardized case-based data on initial patient presentation and management in emergency units leaves limited opportunity for comparison, aggregation and performance monitoring at facilities and across health system levels.

## UTILITY OF REGISTRIES TO IMPROVE QUALITY OF CARE

Registries are data repositories with a built-in analytic function that use case-level data to identify potentially preventable deaths. They can collect integrated data – from prehospital settings to emergency unit visits and inpatient stays. First, data are collected on patient presentation, care and outcome. Second, these data are analyzed to determine if poor outcomes were potentially preventable. These reports can be rapidly fed back to clinical teams for review and targeted education. Such quality improvement cycles are iterative, directly informing corrective actions over time.



## ABOUT THE WHO CLINICAL REGISTRY

To respond to the need of countries and support systematic quality improvement of emergency care, the WHO Clinical Registry was developed. WHO Clinical Registry is a platform for systematically collecting, aggregating and analyzing case-based emergency care encounters. Currently, the platform captures only facility-based data but will be expanded to collect prehospital data in the future. The platform is free to users and built on the open-source DHIS2 software.

## KEY FEATURES

### Multi-lingual and multi-platform

WHO Clinical Registry interface is multi-lingual and can be easily translated across 28 languages through modification of user account settings. The platform offers different types of operation (online, offline) and modalities (web-app, Android mobile app). The WHO Clinical Registry mobile app allows for offline data entry in low connectivity settings that can be synced periodically when stable Wi-Fi is reached.

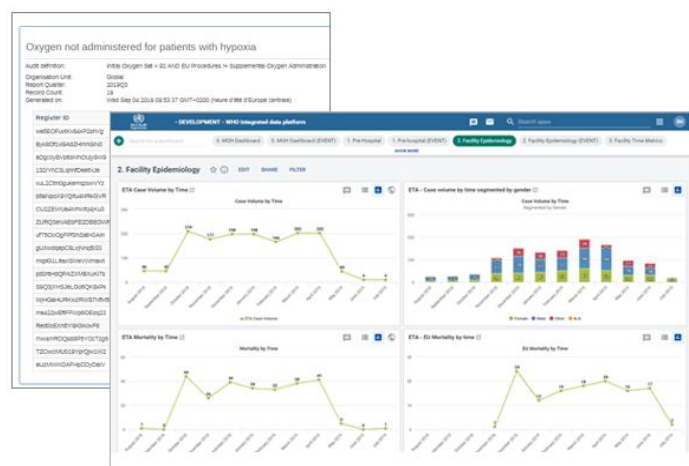
WHO Data Set for Injury	
Variable Name	Constructive Subelement
Facility ID	Unique facility identifier for registries that include multiple facilities
Registry Case ID	Unique case (patient) identifier for registry
Date of Birth	The exact or approximate date of birth of the patient
Age	The known or estimated age of the injured person at the time of injury
Age Group	The age group of the injured person at the time of injury. Infant (0-1 year), child (1-14 years), or adult (15+)
Gender	The reported gender of the patient
Injury Geographic Location	Location where the injury occurred, to at least the level of sub-district or sub-county
Patient Residence	Sub-district or sub-county where patient resides
Patient Occupation	Indicate patient's usual or principal work or business to earn a living - LIST
Number of Prior Facilities	Number of facilities the patient was sent to prior to arrival at the current facility for this event
Referring Facility Level	Level of the facility which the patient was transferred to current facility - LIST
Arrival Date	The date when the patient arrived at current facility
Arrival Time	The time when the patient arrived at current facility
Emergency Unit/Facility Arrival Mode	Mode of arrival delivering the patient to the current facility - LIST
Signs of Life	Indication of whether patient arrived with signs of life
First Vital Signs Assessment Time	The time of first vital signs assessment at the current facility
Initial Heart Rate	First recorded heart rate in the current facility
Initial SBP	First recorded systolic blood pressure in the current facility
Initial Spontaneous Respiratory Rate	First recorded spontaneous respiratory rate in the current facility
Initial Oxygen Saturation	First recorded oxygen saturation in the current facility
Supplemental Oxygen Administration	Supplemental oxygen administration when measuring initial oxygen saturation
Initial GCS - Total	First recorded total GCS following arrival at current facility - LIST
Initial GCS - Eye	First recorded eye component of GCS following arrival at current facility - LIST
Initial GCS - Verbal	First recorded verbal component of GCS following arrival at current facility - LIST
Initial GCS - Motor	First recorded motor component of GCS following arrival at current facility - LIST
GCS Qualifier	Identifies the presence of factors affecting the validity of GCS - LIST
Initial AVPU	First recorded AVPU assessment - LIST
Number of people reactive to light	Note whether neither, one, or both people reacts normally to light
Time of First Provider Assessment	Time of first provider assessment at the current facility or emergency unit
Number of Major Medical Comorbidities	Number of major medical comorbidities at the time of injury
Is patient pregnant?	Patient pregnant by setting or history
Mass Casualty Event	Used to identify cases that are part of a mass casualty event
Injury Event Date	The date when the injury occurred
Injury Event Time	Exact or approximate time when the injury occurred
Setting	Type of setting where the patient was injured (eg. home, athletics area, street, trade and service area, etc.) - LIST
Activity	The injured person's activity when the injury occurred - LIST
Mechanism	The manner in which the injury occurred - LIST
If Drowning or Submersion -> Infant of immersion	The intention associated with drowning victim's entry into the water - LIST
If Poisoning or Exposure -> Mode	The specific mode of the poisoning or toxic exposure - LIST
If RTT -> Patient Mode of Transport	The mode of transport the patient was using - LIST
-> Road User	The road user role of the patient at the time of the road traffic incident - LIST
-> Counterpart to patient's crash	The counterpart in the road traffic incident (i.e. what patient crashed into, or what crashed into patient) - LIST

## Based on validated minimum dataset

WHO Clinical Registry utilizes the *WHO Minimum Dataset for Injury* (DSI)- a minimum set of recommended data elements for effective monitoring and quality improvement of injury care developed and developed through extensive consultations with global stakeholders. *WHO Minimum Dataset for Emergency Care* (DSEC) is in development which will encompass all emergency care presentations beyond injury, in which the registry is flexible to adapt. DSI elements are embedded in the existing *WHO Standardized Clinical Form* that facilitate a systematic approach to each patient in the emergency unit. The specific data collection strategy will vary across settings - facilities can implement the WHO form or adapt their existing clinical documentation accordingly.

## Built-in analytics and reporting

WHO Clinical Registry hosts a range of dashboards and standard reports for users to view injury epidemiology trends and monitor key indicators over time - either for a single facility or across facilities. Pre-programmed audit filters can be executed for a given time and facility to flag cases for in-depth review – such as patients with hypoxia who did not receive oxygen. The viewing and modification of analytics outputs depends on the user permissions that you define at your facility. If desired, users can also configure their own additional reports and visualizations as necessary.



## IMPLEMENTATION CONSIDERATIONS



Each facility will need to appoint **data entry staff** who will be responsible for entering data into the Registry platform from clinical forms or records. This could be existing medical records staff or quality officers. Required staff time depends on trauma volume at your facility – our team can assist you in making initial projections.



To receive login credentials, identify a **list of users at your facility** who will be entering data or viewing data, and defined roles for each. Details on facility geo-location within country administrative zones require confirmation. The *WHO Standard User Agreement* must be signed by the relevant facility administrator or MOH staff and returned to WHO before user credentials are shared.



**Required infrastructure** includes at least one desktop, laptop or tablet at the facility with connection to internet. Where internet connectivity is limited, you can utilize a tablet to record offline data entry, with periodic syncing of case records when stable Wi-Fi is reached.



We recommend a **3-4 hours online training** before launch. This includes a training for clinical providers from each facility on the Standardized Clinical Form (if required), data entry training with data entry staff from each facility, as well as data analytics and visualization training.