

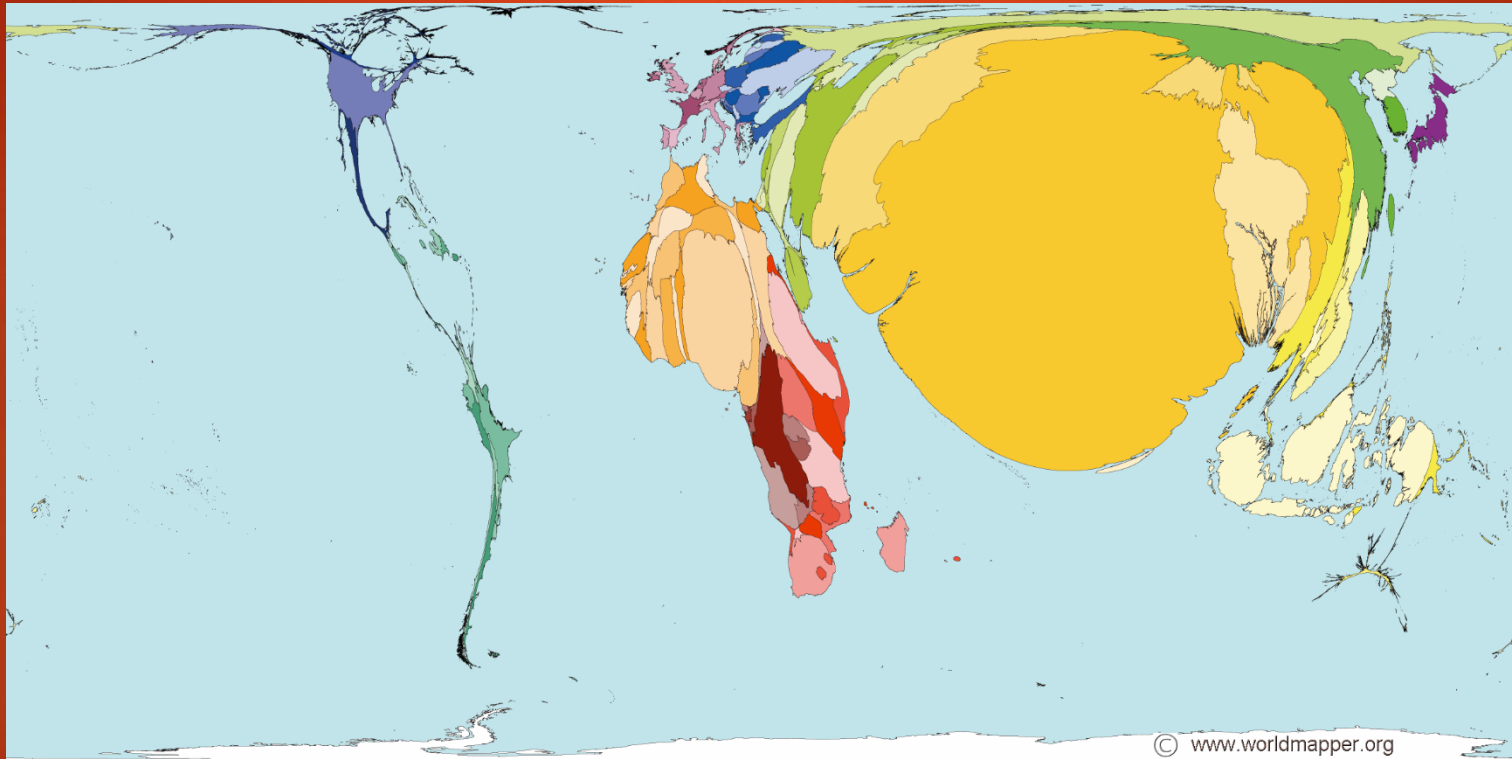


**THE WHO GLOBAL BURN REGISTRY—
THE WORLD'S FIRST STANDARDIZED
PLATFORM FOR DATA COLLECTION ON BURNS**

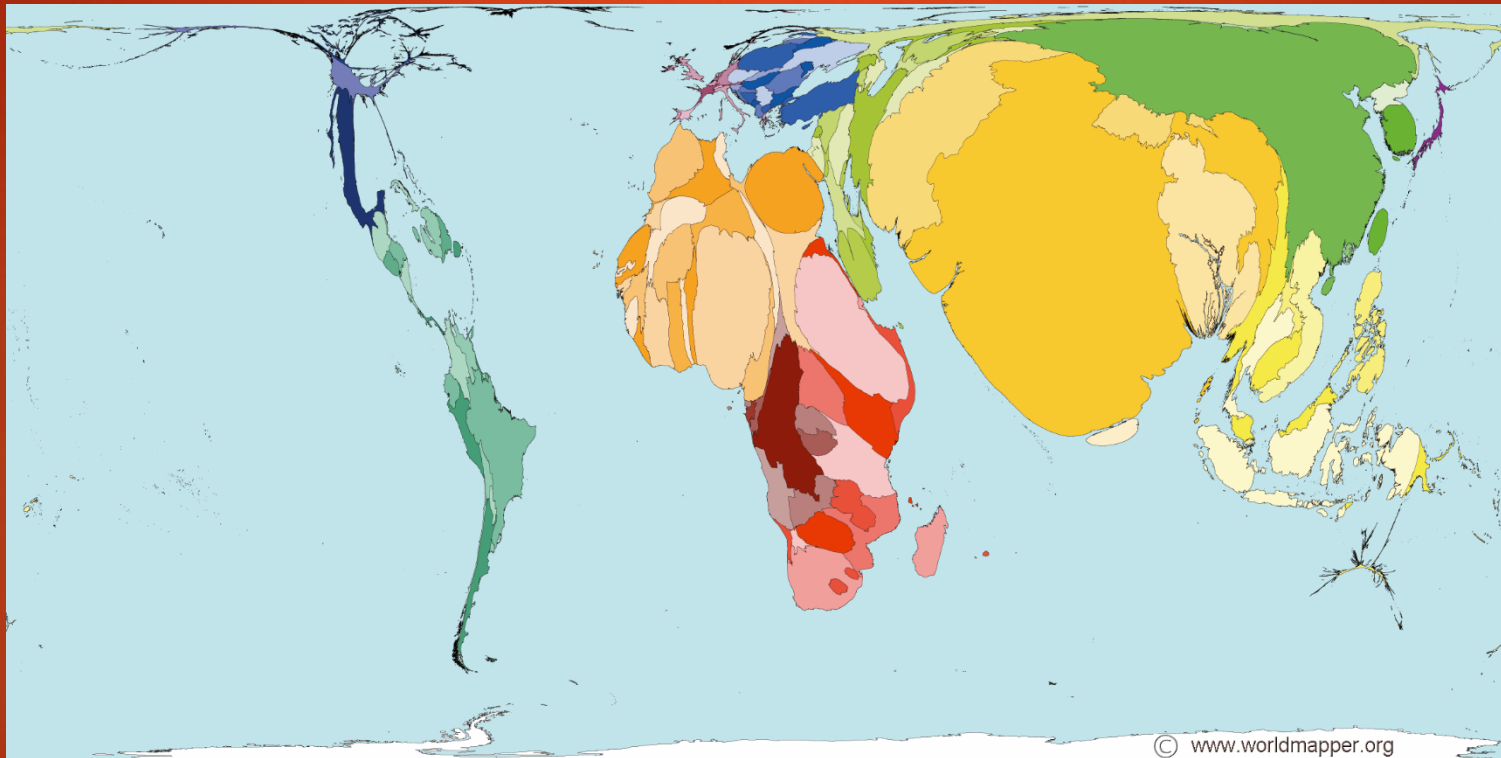
Michael Peck, MD

Arizona Burn Center, Phoenix, Arizona

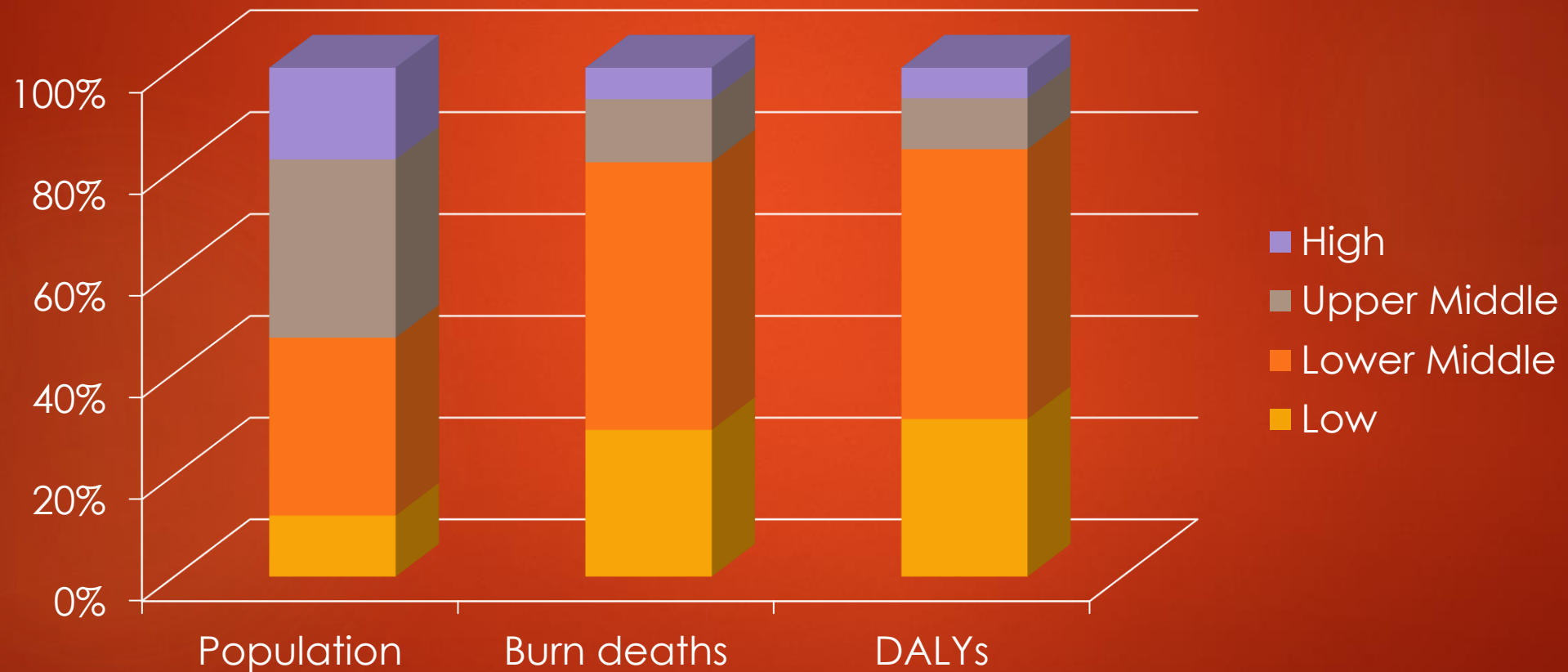
Territories are sized in proportion to the absolute number of people who died from fires in one year.



Territory size shows the proportion of the world population living in poverty residing there.



Burden of Burns by Country Income Level



The Best Treatment for Burns...

The challenge of burns lies not in the successful treatment of a 100% burn, but in the 100% prevention of all burn injuries.



Dr. M.H. Keswani, leader of burn care in India

Who is at risk?



Burn Injuries and Epidemiologic Data

Majority of existing data based on single institution retrospective chart reviews

Few multi-center or population-based studies

Few community surveys

Need for representative data for risk factor identification and public health interventions

The true incidence of burn deaths in India...



...is probably 6 x current estimates!

Design and evaluation of a system for improved surveillance and prevention programs in resource-limited settings using a hospital-based burn injury questionnaire

MICHAEL PECK, ISBI

DAVID MEDDINGS, WHO

SUMI MEHTA, GACC

HENRY FALK, CDC

DAVID SUGERMAN, CDC

MICHAEL SAGE, CDC

Summary

- ▶ The World Health Organization and a global network of epidemiologists and burn care practitioners have developed and piloted a new system for gathering burn-related data, which can be expected to be used in either resource-abundant or resource-limited settings.
- ▶ This system's data collection instrument (form) had three functions
 - to characterize the main risk factors and mechanisms for burns requiring inpatient care
 - to characterize the main risk groups for burns requiring inpatient care
 - be designed for use without modification and around the world
- ▶ After pilot testing, this form was shown to be simple, flexible, and acceptable to users.

Background

Collaborative effort involving the World Health Organization, the Global Alliance for Clean Cookstoves (GACC), the U.S. Centers for Disease Control and Prevention, and the International Society for Burn Injuries was undertaken to simplify and standardize inpatient burn data collection.

An expert panel of epidemiologists and burn care practitioners advised on the development of a new Global Burn Registry (GBR) form and online data entry system that can be expected to be used in resource-abundant or resource-limited settings.

Global Alliance for Clean Cookstoves Working Group

Rajeev Ahuja (India)

Alberto Bolgiani (Argentina)

Shobha Chamanian (India)

Scott Corlew (US)

Gopalakrishnam Gururaj (India)

Leila Kasrai (Canada)

Asad Latif (US)

Saidur Mashreky (Bangladesh)

Amr Moghazy (Egypt)

Michael Peck (chair; US)

Tom Potokar (UK)

David Sugerman (US)

Dehran Swart (South Africa)

Ashley van Niekerk (South Africa)

Brigitte Vilasco (Côte d'Ivoire)

Hilary Wallace (Australia)

Shahla Yekta (Canada)

Goals

Inclusion of core minimum data set (MDS) proposed in the WHO/CDC Injury Surveillance Guidelines

Long-term sustainability and suitability for resource-limited settings (RLS)

Standardization of data collection and analysis by ensuring the ability to collate and work with data across all settings, especially RLS, with non-ambiguous case definitions and instructions for use

Guidance and training

Proviso

Project was developed to provide a clearer characterization of the impact of burns and the circumstances in which burns are sustained so that there could be better targeting of primary prevention strategies, advocacy, and identification of long-term socioeconomic effects.

Intent was to ensure application in RLS, but not exclusive to RLS.

Methods

DataCol used as electronic platform for data entry

International burn organizations, CDC, and WHO solicited burn center participation to pilot test the GBR system.

Participants included 52 hospitals from 30 countries

- 5 HIC
- 7 HMIC
- 13 LMIC
- 5 LIC

Global Burn Registry Data Collection Form

Date electronically entered: _____
(To be completed only by staff entering data electronically)

1. Indicate the respondent (person providing the information) and fill out all relevant boxes providing information about the patient.

Respondent	Patient's date of birth:	If date of birth unknown:	If under 5 years of age was the patient:	Sex:	Date of admission:	Hour of day admission:
Patient <input type="checkbox"/> Husband <input type="checkbox"/> Wife <input type="checkbox"/> Parent <input type="checkbox"/> Sibling <input type="checkbox"/> Other <input type="checkbox"/>	____/____/____ <i>(Use dd/mm/yyyy format)</i>	Age in years: ____ <i>(Rounded to the nearest year)</i>	Alone <input type="checkbox"/> With other children (<18 years old) <input type="checkbox"/> With an adult but unsupervised <input type="checkbox"/> With an adult and supervised <input type="checkbox"/> Unknown <input type="checkbox"/>	Male <input type="checkbox"/> Female <input type="checkbox"/>	____/____/____ <i>(Use dd/mm/yyyy format)</i>	____:____ <i>(use 24 hour clock – e.g. 15h not 3 p.m.)</i>

2. Fill out all relevant boxes indicating general and clinical information about the burn.

Date burn occurred:	Hour of day burn occurred:	Village, neighbourhood or postal code where burn occurred:	Total body surface area of burn <i>(refer to body surface area diagrams)</i>	Associated smoke inhalation injury	Associated injuries (check all that apply)
____/____/____ <i>(Use dd/mm/yyyy format)</i>	____:____ <i>(use 24 hour clock – e.g. 15h not 3 p.m.)</i>	_____ <i>(Please use most specific locale. Postal code is best if available.)</i>	_____ <i>(To nearest 5% - e.g. 5%, 15%, 65%, etc.)</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>	No associated injuries <input type="checkbox"/> Long bone fracture <input type="checkbox"/> Abdominal trauma <input type="checkbox"/> Spinal cord injury <input type="checkbox"/> Chest trauma <input type="checkbox"/> Traumatic brain injury <input type="checkbox"/> Eye injury <input type="checkbox"/>

3. Fill out all relevant boxes indicating the anatomy of the burn (check all that apply).

Head and neck	Trunk	Arms	Hands and wrists	Legs
None <input type="checkbox"/> Scalp <input type="checkbox"/> Face <input type="checkbox"/> Eye <input type="checkbox"/> Neck <input type="checkbox"/>	None <input type="checkbox"/> Chest, abdomen, back or buttocks <input type="checkbox"/> Perineum or genitals <input type="checkbox"/>	None <input type="checkbox"/> Shoulder and/or axilla <input type="checkbox"/> Upper arm and/or forearm <input type="checkbox"/> Elbow <input type="checkbox"/>	None <input type="checkbox"/> Wrist <input type="checkbox"/> Back of hand <input type="checkbox"/> Palm <input type="checkbox"/> Fingers and/or thumb <input type="checkbox"/>	None <input type="checkbox"/> Thigh and/or lower leg <input type="checkbox"/> Knee <input type="checkbox"/> Ankle <input type="checkbox"/> Foot <input type="checkbox"/>

4. Tick the appropriate box in the top row indicating how the burn was caused and then fill out the appropriate column below:

Flame <input type="checkbox"/>			Hot surface <input type="checkbox"/>	Hot liquid, steam or gas <input type="checkbox"/>	Electrical <input type="checkbox"/>	Chemical <input type="checkbox"/>	Friction <input type="checkbox"/>	Inhalation <input type="checkbox"/>	Cooling <input type="checkbox"/>	Radiation <input type="checkbox"/>	Other <input type="checkbox"/>
Occurring in which setting:			Related to (select one best response from below):	Related to (select best response from below):	Occurring in which setting:	Occurring in which setting:					
Household <input type="checkbox"/>	Occupational <input type="checkbox"/>	Public <input type="checkbox"/>	Cooking <input type="checkbox"/> Household heating <input type="checkbox"/> Household appliance <input type="checkbox"/> Household lighting <input type="checkbox"/> Occupational activity <input type="checkbox"/> Other <input type="checkbox"/>	Cooking <input type="checkbox"/> Bathing/washing <input type="checkbox"/> Occupational activity <input type="checkbox"/> Other <input type="checkbox"/>	Household <input type="checkbox"/> Occupational <input type="checkbox"/> Public <input type="checkbox"/>	Household <input type="checkbox"/> Occupational <input type="checkbox"/> Public <input type="checkbox"/>					
Cooking <input type="checkbox"/> Heating <input type="checkbox"/> Lighting <input type="checkbox"/> House fire (single) <input type="checkbox"/> House fire (multiple) <input type="checkbox"/> Intentional flame burn <input type="checkbox"/> Playing with fire <input type="checkbox"/> Other <input type="checkbox"/>	Food preparation <input type="checkbox"/> Petrochemical <input type="checkbox"/> Textiles <input type="checkbox"/> Construction <input type="checkbox"/> Agricultural <input type="checkbox"/> Fireworks/related <input type="checkbox"/> General industry <input type="checkbox"/> Other <input type="checkbox"/>	Road traffic crash <input type="checkbox"/> Bonfires <input type="checkbox"/> Fireworks <input type="checkbox"/> Spilled liquids <input type="checkbox"/> Playing with fire <input type="checkbox"/> Assault <input type="checkbox"/> Terrorism or war <input type="checkbox"/> Other <input type="checkbox"/>			High voltage <input type="checkbox"/> Low voltage (<1,000 volts) <input type="checkbox"/> Lightning <input type="checkbox"/> Other <input type="checkbox"/>						

5. For burns involving either cooking/food preparation, household lighting, or household heating fill out all relevant boxes. For other burns, skip to question 6.			
Cooking/food preparation		Household lighting	Household heating
<i>Burn caused by contact with:</i>		<i>Burn caused by:</i>	
Cook stove <input type="checkbox"/>	Deliberate movement (e.g. deliberate touch) <input type="checkbox"/>	Lamp/lantern igniting surrounding material <input type="checkbox"/>	Heating source igniting surrounding material <input type="checkbox"/>
Cooking tool/vessel (pot, etc.) <input type="checkbox"/>	Accidental movement (e.g. fall/spill etc.) <input type="checkbox"/>	Deliberate movement touching lamp/lantern <input type="checkbox"/>	Deliberate movement touching heating source <input type="checkbox"/>
Burning fuel (wood, kerosene etc.) <input type="checkbox"/>	Explosion <input type="checkbox"/>	Accidental movement touching lamp/lantern <input type="checkbox"/>	Accidental movement touching heating source <input type="checkbox"/>
Cooked food or liquid <input type="checkbox"/>	Fire in cooking area <input type="checkbox"/>	Other <input type="checkbox"/>	Other <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>		
<i>Details of cooking area:</i>		<i>Energy source for heating:</i>	
<i>Fuel used for cooking:</i>		<i>Type of lamp/lantern:</i>	
<i>Cooking area height (to ground):</i>	Ethanol <input type="checkbox"/>	Candle <input type="checkbox"/>	Traditional biomass (wood, charcoal, dung) <input type="checkbox"/>
Under 0.9 m (3 feet) <input type="checkbox"/>	Wood <input type="checkbox"/>	Kerosene (Paraffin) <input type="checkbox"/>	Coal <input type="checkbox"/>
0.9 m (3 feet) or higher <input type="checkbox"/>	Kerosene (Paraffin) <input type="checkbox"/>	Electric <input type="checkbox"/>	Kerosene (Paraffin) <input type="checkbox"/>
Unknown <input type="checkbox"/>	Liquefied Petroleum Gas (LPG) <input type="checkbox"/>	Other <input type="checkbox"/>	Liquefied Petroleum Gas (LPG) <input type="checkbox"/>
<i>Cooking and living areas separate?</i>	Dung <input type="checkbox"/>		Natural gas <input type="checkbox"/>
Yes <input type="checkbox"/>	Solar power <input type="checkbox"/>		Electricity <input type="checkbox"/>
No <input type="checkbox"/>	Coal <input type="checkbox"/>		Other <input type="checkbox"/>
	Electricity <input type="checkbox"/>		

6. Burn caused intentionally? Intentional self-harm Assault Unintentional Undetermined intent

7. If the patient is 15 years or older, is the patient literate? Yes No Unknown

8. Contributing factors: None Alcohol Drug Epilepsy Dementia Psychiatric illness Physical or mental disability Other

9. Number of people burned in this incident: 1 person 2 people 3-5 people 6-9 people 10 and more people

10. Indicate the patients treatment and discharge.			
Surgery during this hospital stay?	Date of discharge:	Hour of day patient discharged:	Condition on discharge from facility:
Yes <input type="checkbox"/>	____/____/____	_____	Dead <input type="checkbox"/> Discharged home with disability <input type="checkbox"/>
No <input type="checkbox"/>	(Use dd/mm/yyyy format)	(use 24 hour clock – e.g. 15h not 3 p.m.)	Transferred to another facility <input type="checkbox"/> Discharged home without disability <input type="checkbox"/>
			Left against medical advice <input type="checkbox"/> Unknown <input type="checkbox"/>

Results



- ▶ During an 8-month period, 52 hospitals in 30 countries enrolled in the pilot and were provided the GBR instrument, guidance, and a data visualization tool.
- ▶ Evaluations were received from 29 hospitals (56%).
- ▶ Key findings:
 - Median time to upload completed forms was less than 10 minutes
 - Physicians most commonly entered data (64%), followed by nurses (25%)
 - Layout, clarity, accuracy, and relevance were all rated high
 - Vast majority (85%) considered the GBR “highly valuable” for prioritizing, developing, and monitoring burn prevention programs

Conclusions

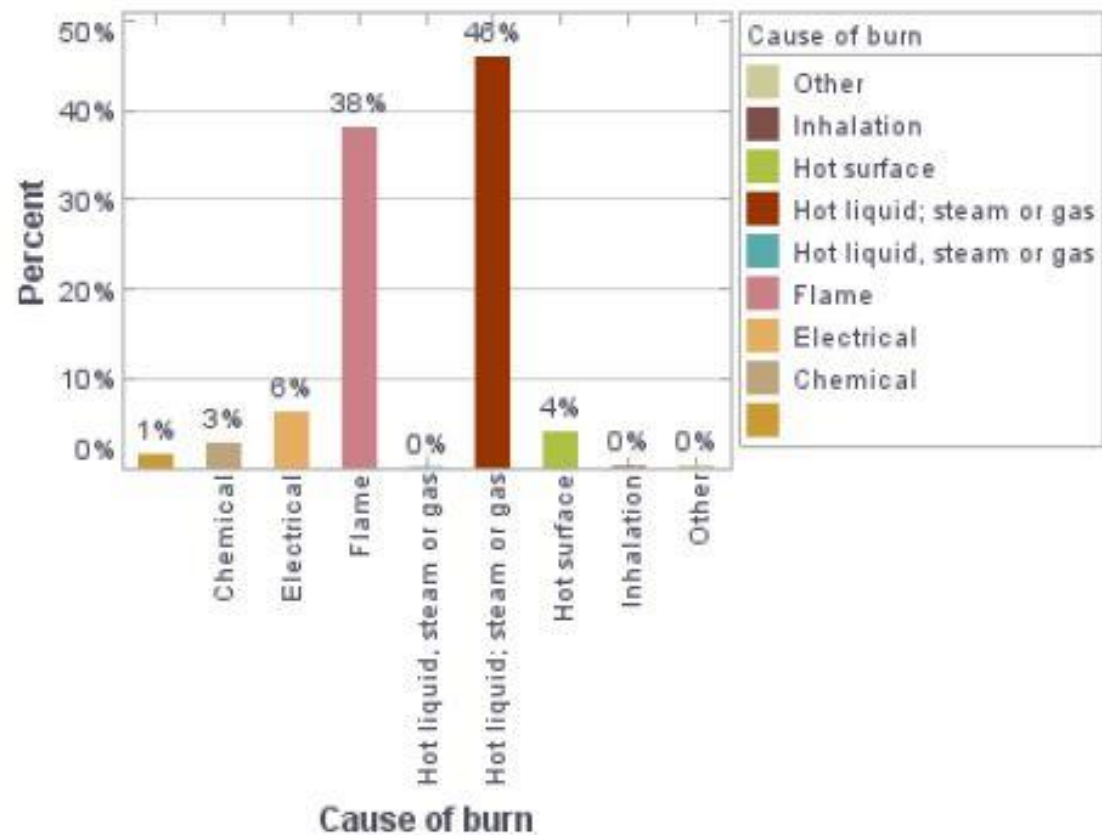
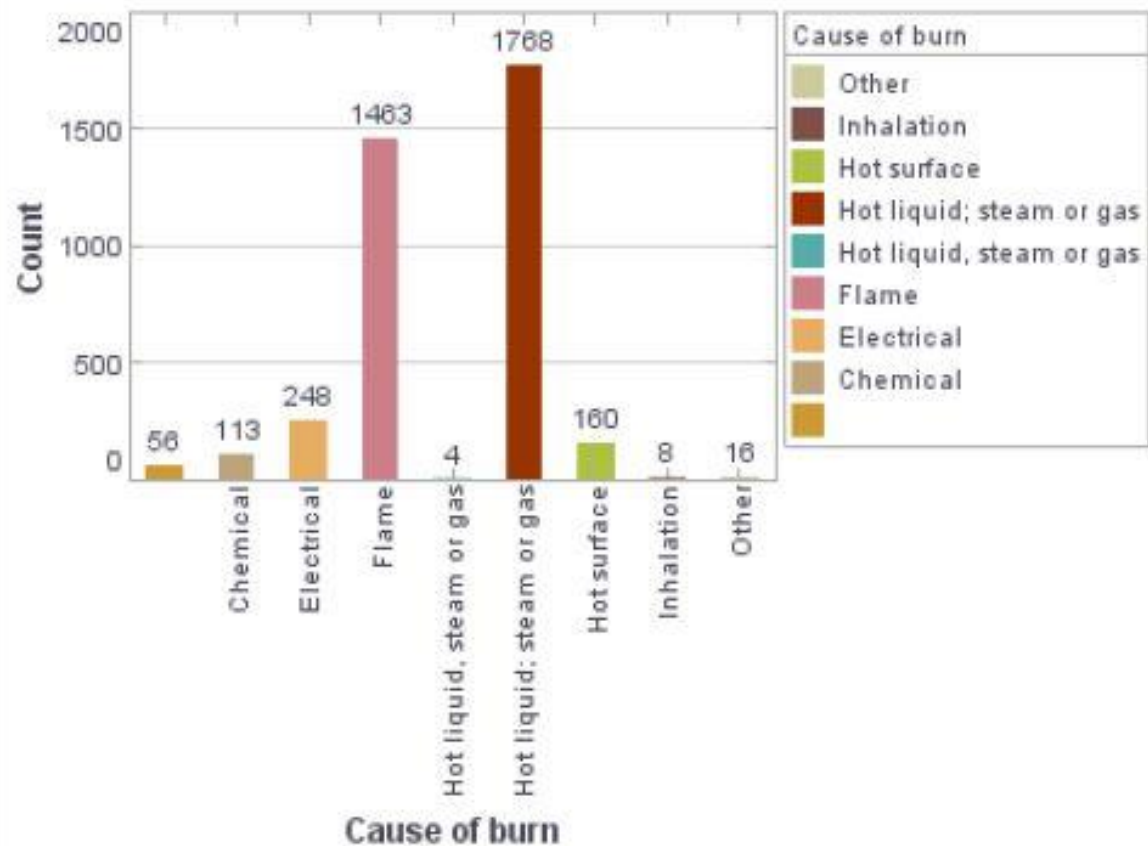
- ▶ The GBR was shown to be simple, adaptable, and acceptable to users.
- ▶ Both in terms of structure and ease of operation, this data collection system was straightforward, allowing first-time users access with minimal training.
- ▶ Although not pilot-tested over a long time period, this system demonstrates flexibility, supporting the modification of questions and paper based collection in countries unwilling to send data to WHO via the Internet.
- ▶ The system is timely, with data immediately available to facilities, automatically updated and re-tabulated.
- ▶ Finally, the system demonstrated high stability without corruption, hacking, or downtime for maintenance.

Launch of the Global Burn Registry

- ▶ After revisions based on feedback from the pilot study, the GBR in its current form was launched on January 18, 2018
- ▶ Data is collected in a short, paper form
 - ▶ Responses are simple checkboxes
 - ▶ Available in English, French or Spanish
 - ▶ Accompanied by user's manual (question-by-question instructions)
- ▶ Collected by clinical staff during hospitalization

Why Should Hospitals Participate?

- ▶ Collaborate in a global initiative lead by the WHO to reduce burn injuries
- ▶ Provides a clear picture of burn risk factors in your setting
- ▶ Data can be analyzed locally, and compared globally



Data is filtered! Viewing only: 3836/11518

You are using 1 filter

null Chest,abdomen,back or buttocks

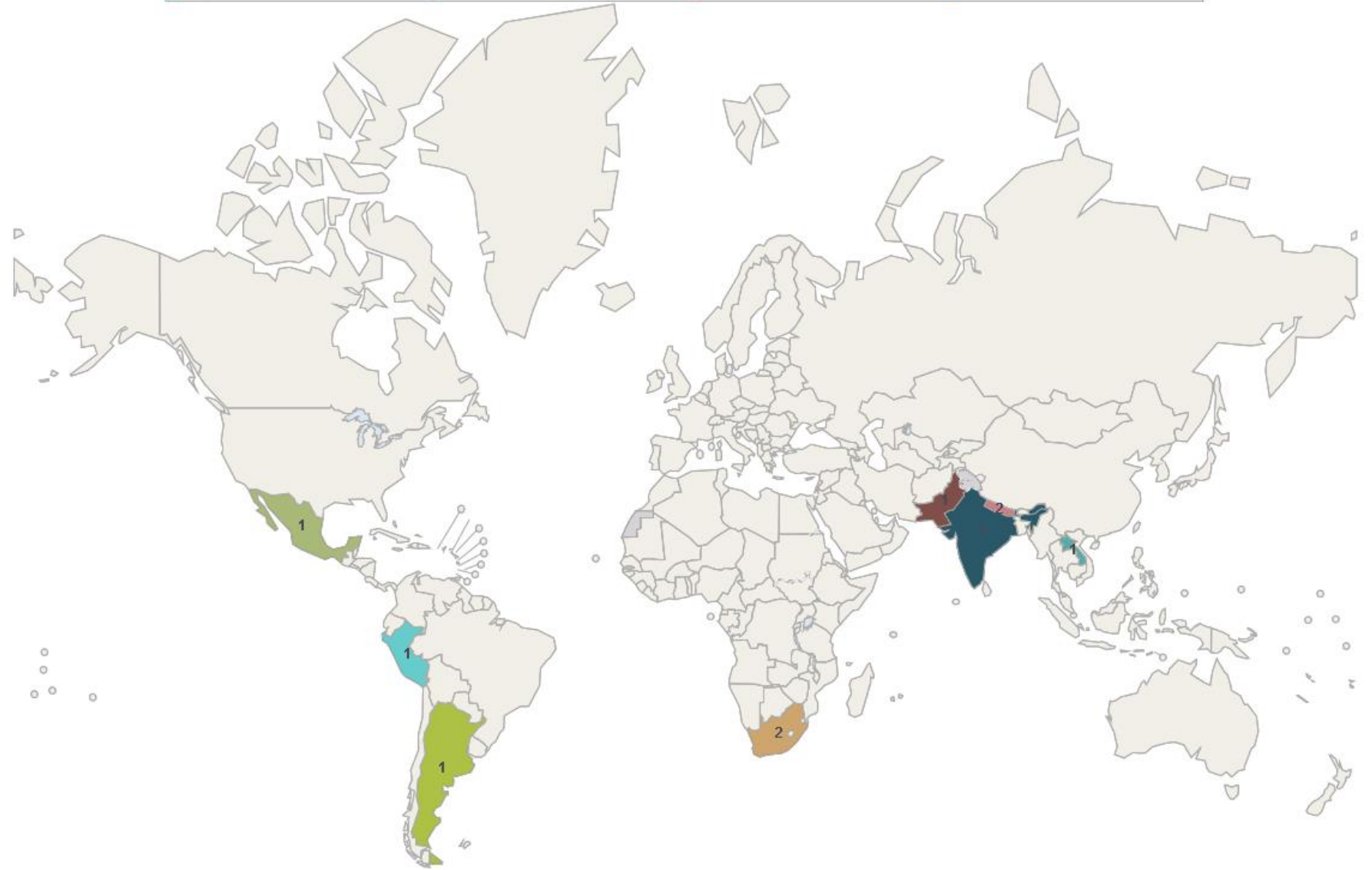
What Does GBR Registration Process Involve?

- ▶ Contact GBR by email at **gbr@who.int**
- ▶ Three steps:
 - ▶ Register hospital or facility
 - ▶ Complete paper form for each patient
 - ▶ Upload forms on-line to GBR in Geneva
- ▶ Website is http://www.who.int/violence_injury_prevention/burns/gbr

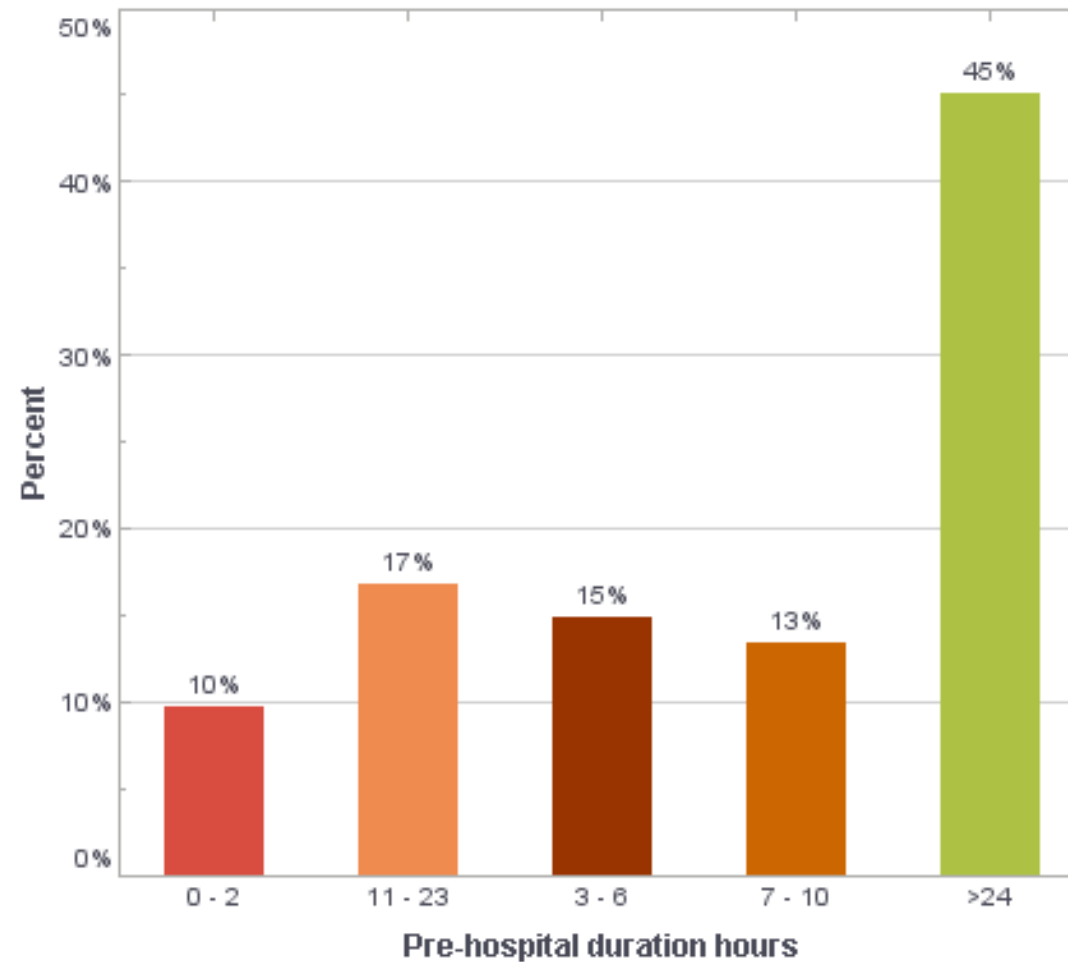
Global Burn Registry Preliminary Data

Countries participating in GBR showing number of participating Health Facilities

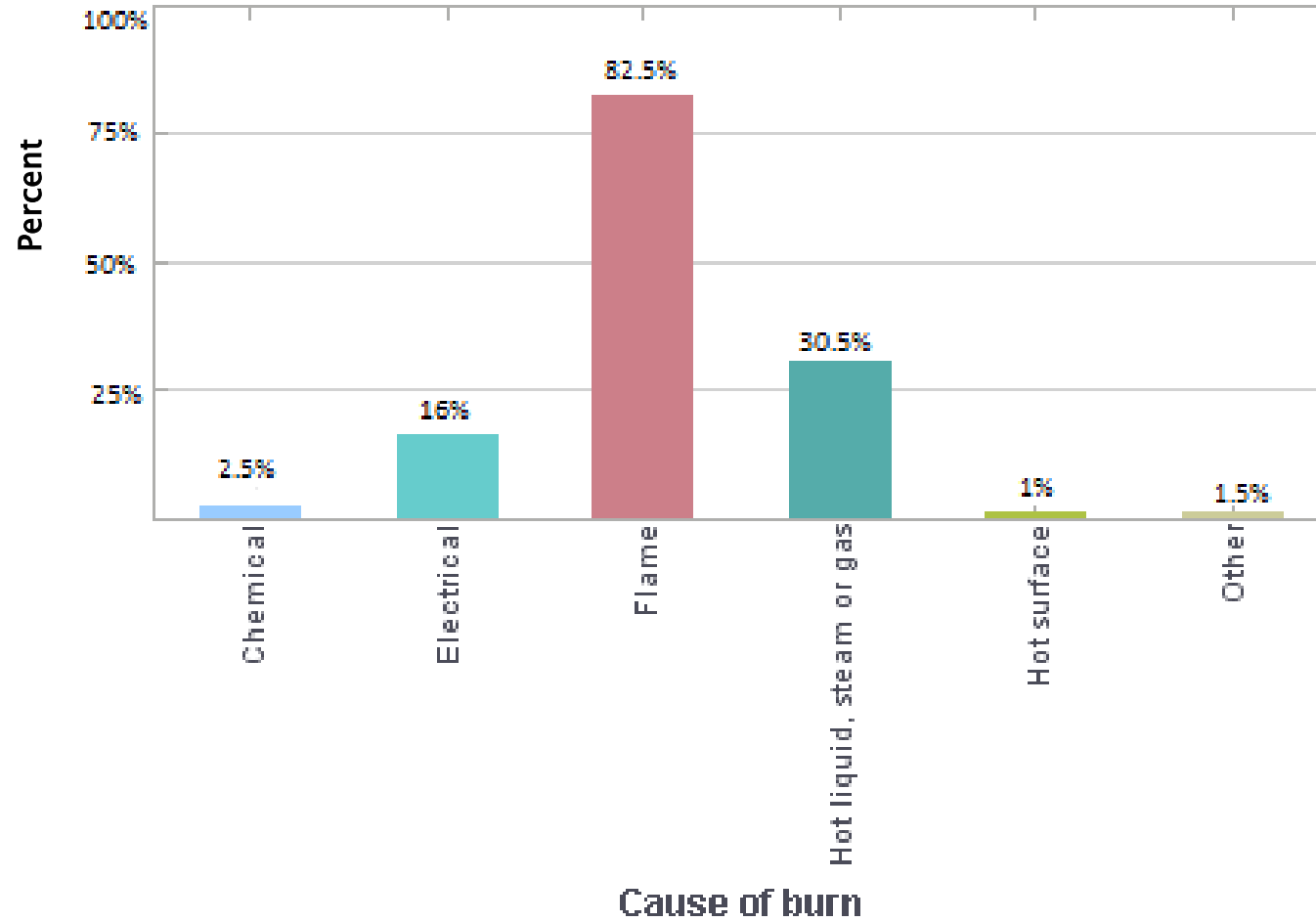
- | | | | |
|-----------|----------|----------------------------------|--------------|
| Argentina | India | Lao People's Democratic Republic | Mexico |
| Nepal | Pakistan | Peru | South Africa |



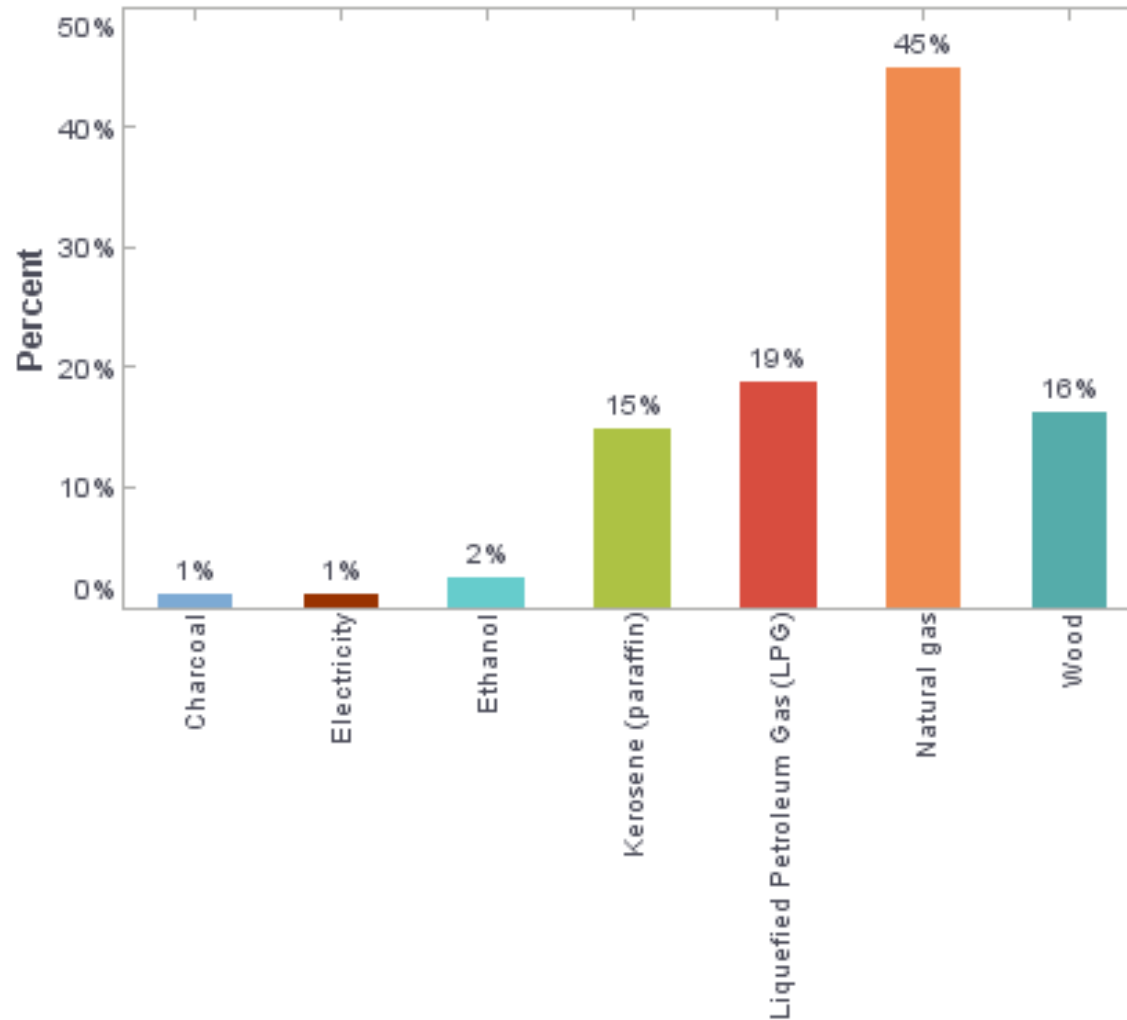
Pre-Hospital Transport Time



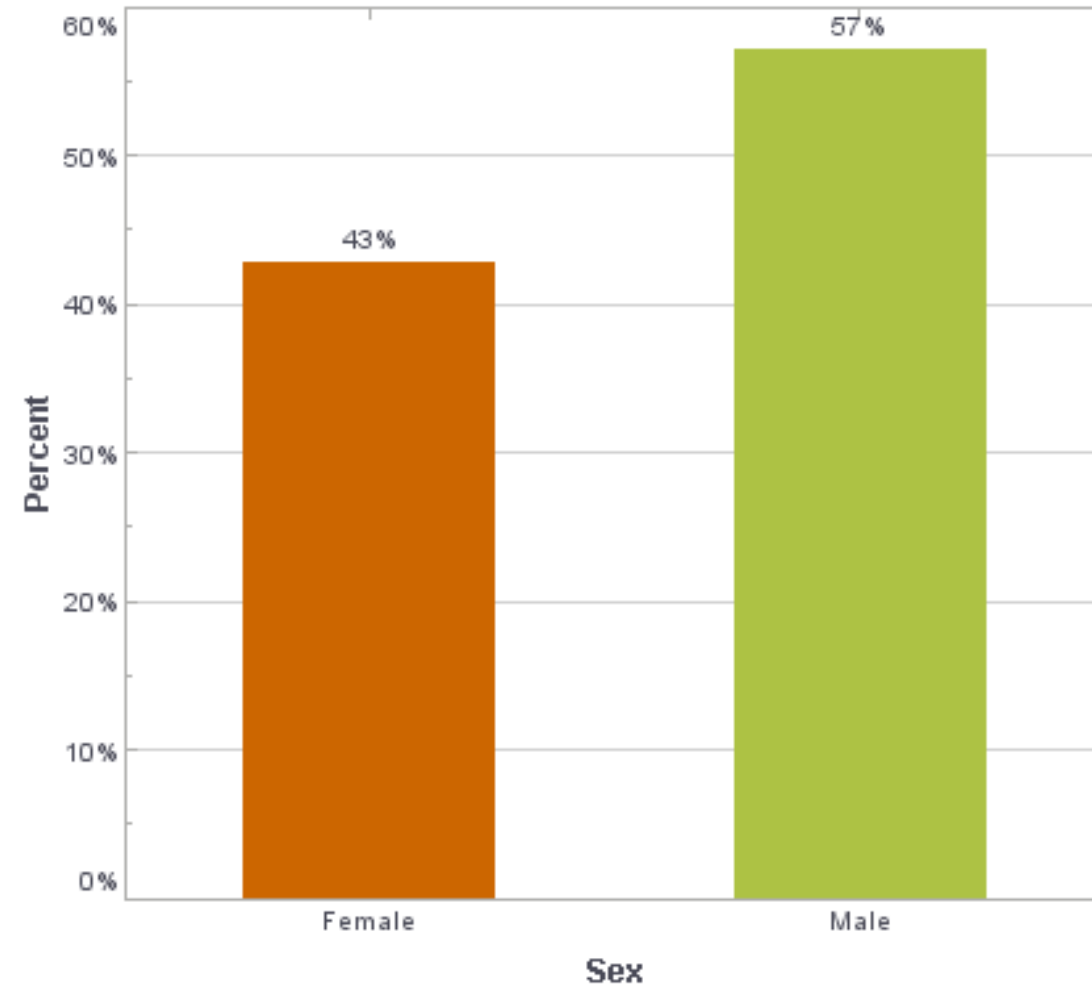
Cause of Burns



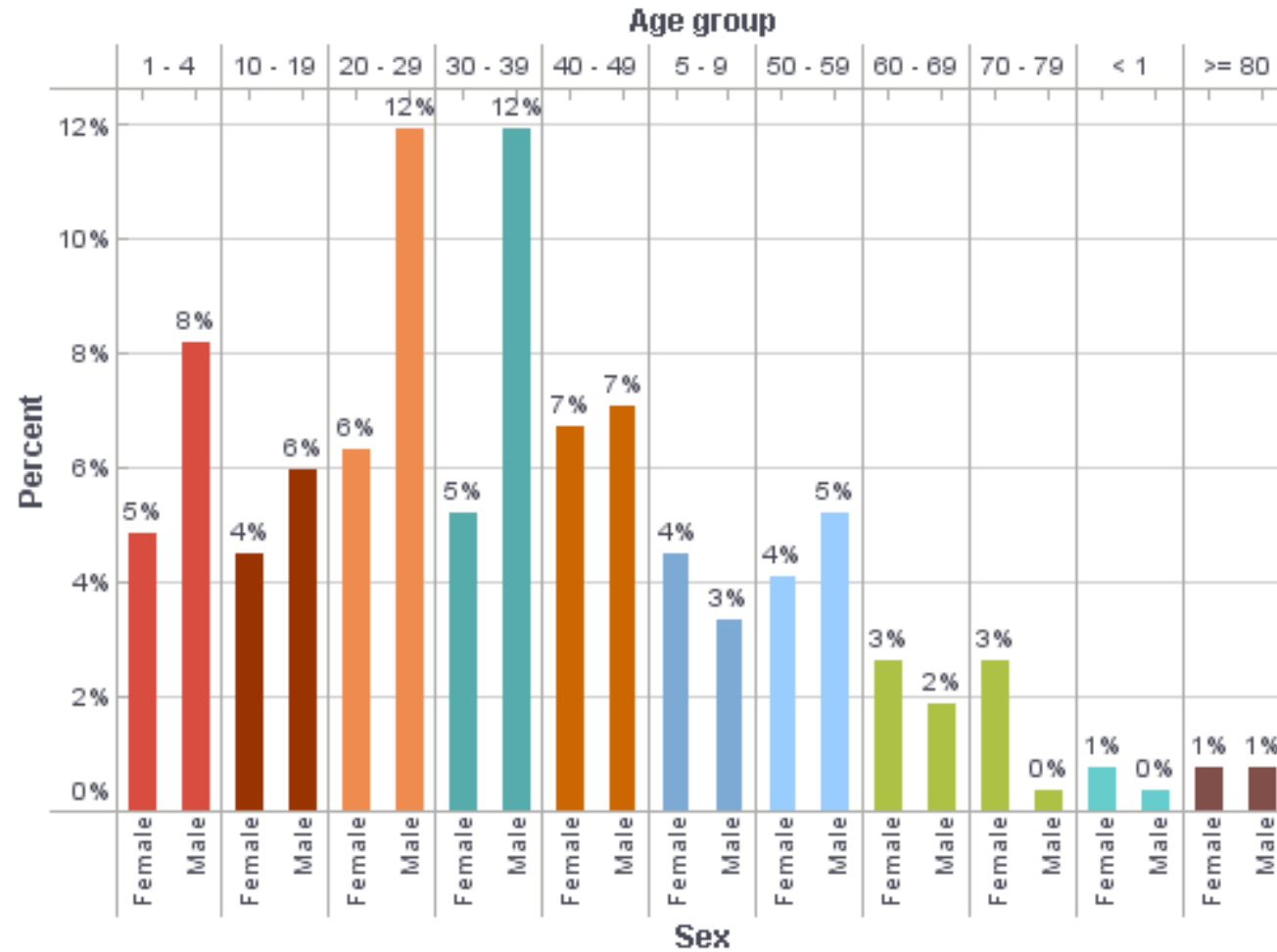
Cooking Related Burns—Fuel Used



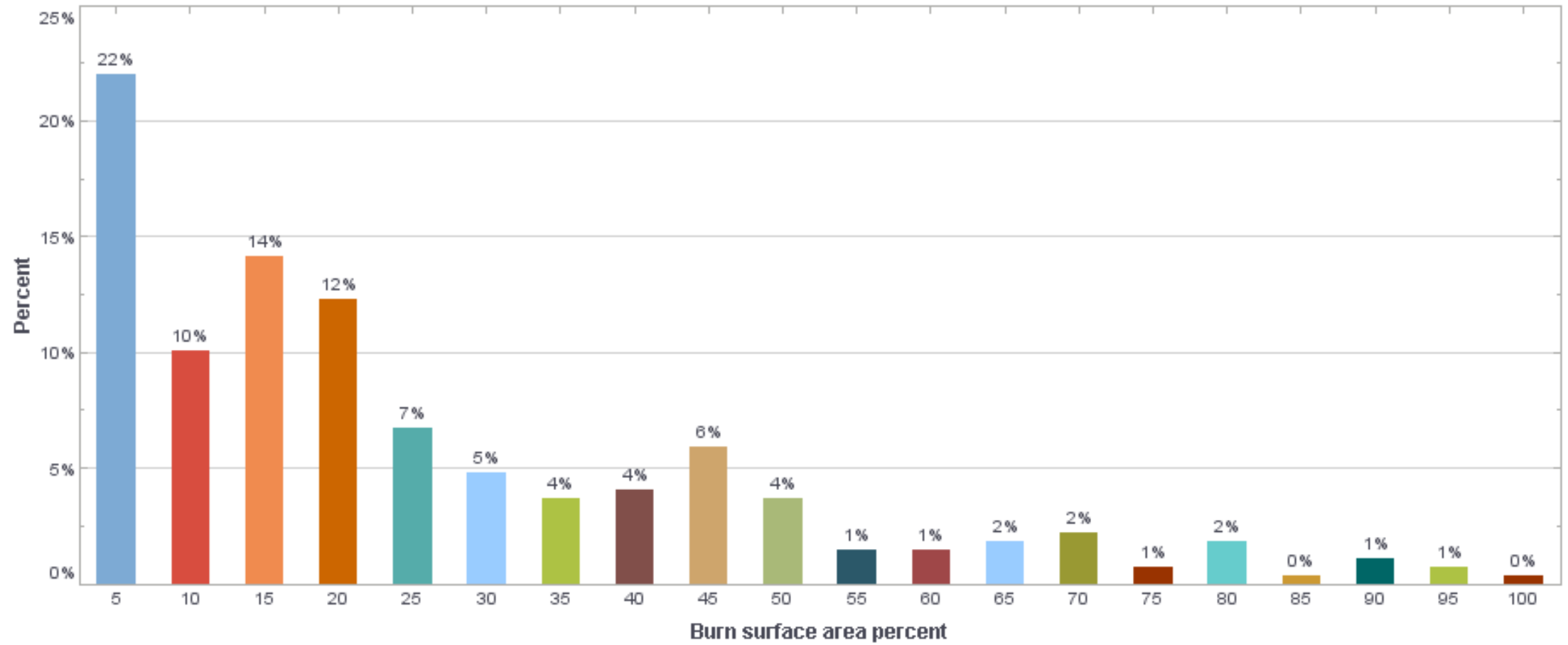
Demographics—Sex



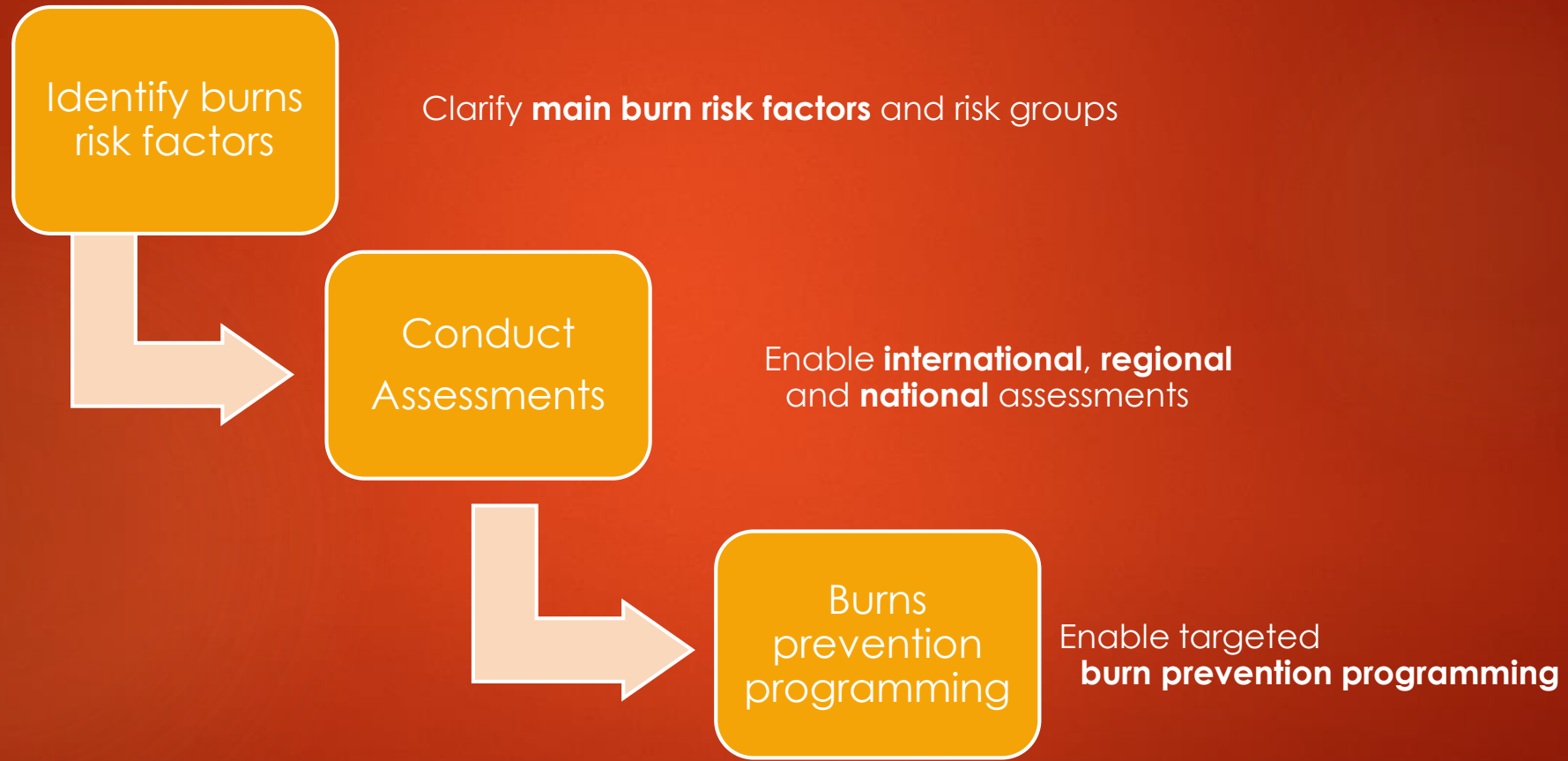
Demographics—Age



%TBSA



What is the WHO's aim?



How can my hospital participate?

Register to participate either via:

- Email: **gbr@who.int**
- **GBR website:** www.who.int/violence_injury_prevention/burns/gbr