Institute of Mountain Emergency Medicine, European Academy of Bozen and Department of Anaesthesia and Intensive Care Medicine, Medical University Innsbruck
prevent preclinical death
or irreversible secondary
organ injury by therapy

minimum delay of definite in-
hospital treatment and
surgical intervention
- few randomized data available from urban trauma care cannot be extrapolated to mountainous and wilderness environment

- advanced trauma life support may be more difficult in mountainous and wilderness terrain

- rapid evacuation to next trauma centre for early definite treatment is often no option in mountain/wilderness rescue
INTERNATIONAL ALPINE TRAUMA REGISTRY

Aim  
Collect data on preclinical trauma care and trauma outcome in patients admitted to hospital with severe and life-threatening injuries after a mountain or wilderness rescue mission.

Inclusion Criteria

NACA score ≥ IV or ISS ≥ 16 or BP < 90 mmHg or RR > 30/ minute and Mountain or wilderness rescue missions involving technical rescue or missions with a delay in hospital admission of more than 60 minutes due to the remoteness of the accident site.
## INTERNATIONAL ALPINE TRAUMA REGISTRY

<table>
<thead>
<tr>
<th>Category</th>
<th>Data Points</th>
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</thead>
<tbody>
<tr>
<td>Patient characteristics</td>
<td>n = 3</td>
</tr>
<tr>
<td>Accident characteristics/mechanism of injury</td>
<td>n = 3</td>
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<tr>
<td>Rescue mission characteristics</td>
<td>n = 7</td>
</tr>
<tr>
<td>Preclinical time, terrestrial or helicopter rescue</td>
<td></td>
</tr>
<tr>
<td>Patient condition at scene</td>
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<tr>
<td>Suspected pattern of injury, GCS, RR, BP</td>
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<tr>
<td>Data on prehospital trauma care</td>
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<tr>
<td>Patient outcome</td>
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<tr>
<td>Pattern of injury</td>
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<tr>
<td>Early</td>
<td>n = 9</td>
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<tr>
<td>Laboratory parameters, respiration, circulation</td>
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<tr>
<td>Late</td>
<td>n = 2</td>
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</tbody>
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INTERNATIONAL ALPINE TRAUMA REGISTRY

Start January 1\textsuperscript{st} 2011

Scotland/ Great Britain

Canada

Tyrol

Switzerland

South Tyrol
Statistics

Considering the variability in treatment approaches and rescue systems as well as the way of data collection a total of about 750 patients must be included in the registry to detect 10% differences in clinically important outcome variables with statistical significance. Conclusions concerning other questions like common pattern of injury, diagnostic performance and missed injuries will be possible earlier.
Is there a role for registries in evidence based medicine?

**Prospective randomized trials** are considered the **highest level of evidence** available and they are the **gold standard for scientific evidence**.

So why not **start prospective randomized clinical trials** on particular questions of preclinical trauma care in mountainous or wilderness terrain as this may be the **best way to get evidence beyond any scientific doubt**?
BUT

There is **little low level scientific evidence** (e.g. retrospective clinical data) that it is **difficult to extract the most important fields of controversy** and the **most important questions for high quality prospective studies**. Perhaps it is reasonable to do some more basic work first.

Prospective, randomized trials – although all of high scientific quality – render **opposing results**. This clearly points out that the **results** of prospective randomized trials **apply only to an environment** that is **absolutely identical** to the study environment.

**Extrapolation** of study results to **non study centers** may be **difficult**, in particular for trials involving only university or level one institutions.

In some fields of medicine there are **factors** that decisively **influence patient outcome** but simply **cannot be randomized or standardized**.
Arguments for a Registry

Data collection for a registry will be possible within a reasonable period of time with an acceptable low logistic burden.

Compare outcome data in a registry does not dependent that much on study details and study environment. A factor that is important when considering the wide variability of mountain and wilderness rescue systems. A registry allows a comparison of outcome for different treatment strategies with acceptable high scientific evidence in the poorly controlled environment of mountain rescue.

A registry eliminates most of the problems associated with trying to standardize and randomize an accident scenario in the mountains.
INTERNATIONAL ALPINE TRAUMA REGISTRY

- platform for trauma care in mountainous and wilderness terrain
- overview on the rescue strategies used worldwide
- compare advantages and disadvantages of different rescue approaches
- compare patient outcome
- statistical and scientific analysis of data
THANK YOU FOR YOUR ATTENTION!