TAPE-a web based tool (software) for injury monitoring in elderly care

Ilona Nurmi-Lüthje, PhD
adjunct professor (public health)

Centre for Injury and Violence prevention (Start)
Kouvola, Finland
www.tapaturmahanke.fi

Safety 2010, London
Kouvola (90 000 inhabitants) is situated in South-East of Finland
The effects of injury prevention are measurable: changes in prevalence, incidence and injury profiles
Idea

Use of continuous, prospective injury data for injury prevention
TAPE – accident log

• is developed in cooperation with a software company

• accidents are recorded prospectively by the staffs of the facilities

• recording as near as possible to the scene

• all accidents are recorded whether or not they lead to an injury
Two different data bases for elderly care

• **TAPE** for hospital and nursing home care
• **TAPE** for home care, residential care and other assisted living
Variables (detailed information)

- sex, age, time of injury, type of injury, falls: direction of fall, hip protectors, place of injury, indoors/outdoors, work shift, activity at the time of injury, intrinsic factors, extrinsic factors, definition of the patient or resident (long-term, short term etc..), did the person get an injury, if yes: location and type of injury, further examinations, place of care, was the patient alone or with someone, how did the person get help, how long did the person wait for help, was the injury caused by another person
Use of TAPE data

• **TAPE** is in real time: all the recorded injury data can be viewed immediately as graphs (numbers or percentages)

• **TAPE** - viewing period can be chosen

• **TAPE** - data are used in everyday practice as well as in research
TAPE® Accident log

Username: [blank]
Password: [blank]

Login »

SSL (Secure Sockets Layer) - protection
## Add new accident:
Form: [home and residential care](#)  

## Printable form:
Printable form (Word-file): [Download](#)  

### Open accidents: (5 newest)

<table>
<thead>
<tr>
<th>Nro</th>
<th>Date</th>
<th>Weekday</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11857</td>
<td>7.6.2010</td>
<td>Mon</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>11105</td>
<td>24.3.2010</td>
<td>Wed</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>11081</td>
<td>23.3.2010</td>
<td>Tue</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>10782</td>
<td>17.2.2010</td>
<td>Wed</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>10726</td>
<td>11.2.2010</td>
<td>Thu</td>
<td>Edit</td>
<td>Delete</td>
</tr>
</tbody>
</table>

### Closed accidents: (5 newest)

<table>
<thead>
<tr>
<th>Nro</th>
<th>Date</th>
<th>Weekday</th>
</tr>
</thead>
<tbody>
<tr>
<td>5518</td>
<td>8.4.2008</td>
<td>Tue</td>
</tr>
<tr>
<td>1303</td>
<td>27.9.2006</td>
<td>Wed</td>
</tr>
</tbody>
</table>
Basic information of accident

Gender: Female

Age: 89 y.

Description of accident:
The patient was getting up from bed in the middle of the night to go to the toilet. The room was dark and no assistance was available. Only one nurse was in duty and she was in another room helping another patient. The patient did not take the cane along. She had taken sleeping pill four hours before the fall etc...

Date: September 2010

Time: 02:00
New Accident
2/10

**Work shift**
- morning (07:00-14:59)
- evening (15:00-21:59)
- night (22:00-06:59)

**Injury type**
- fall on the same level
- collapsing or slumping
- tripping
- colliding
- slipping
- someone else pushed or made fall
- falling from bed
- falling from a chair/wheelchair
- falling from a toilet seat
- stumbling when getting up
- found on the floor/ground
- lifting or reaching accident
- burn accident
- frostbite accident
- getting pressed, squeezed
- other accident
- not known

« Previous  Save and proceed »
Internal cause of injury. Max 2 options

- attack
- vertigo
- losing balance, losing strength
- forgetfulness
- other confusion
- carelessness, hurry
- medication
- worsened eyesight
- worsened hearing
- intoxicants
- other internal
- no internal cause

External cause of injury (connected to environment). Max 2 options

- bad lighting
- slippery or uneven base ground or floor
- carpet
- improper footwear
- not a fitting aid device / improper use of aid device
- broken aid device
- aid device was not with / was forgotten
- broken piece of furniture or fitting
- barriers (thresholds, furniture, electric wires or like)
- tightness of space
- pet
- smoking
- stove
- sauna stove
- (other) electronic device
- other external reason
- no external cause
New Accident
7/10

Resident / person was in the accident situation
- alone
- a relative was present
- staff were present
- other residents/staff were present
- both staff and others were present

Resident / person is in a unit, in home health care or home care
- long-term
- short-term or temporarily
- because of acute illness
- because of an act
- interval care
- because of the caretaker's vacation or acute illness
- other reason
Location of the injury
- facial area
- neck, throat
- head (except for face, neck and throat)
- chest
- rib
- shoulder, upper arm
- elbow, forearm
- wrist
- fingers
- palm
- stomach
- back/backbone
- pelvis
- hip
- behind
- thigh area
- knee
- leg
- ankle
- foot, toes
- injury related to many body parts
- other

Type of injury
- bruise, bump
- superficial cut, skin cut
- bruise, open wound
- tooth injury
- eye injury
- burn injury
- electric shock
- frostbite
- concussion
- unconsciousness
- fracture
- dislocation
- strain
- pain
- other

Saved injuries
- rib
- fracture
- yes
  - the injury required hospital care

Determining the injury requires further examinations
- yes
- no

Place of care
- the injury did not need care
- by home (health) care
- the injury required a doctor's visit
- the injury required hospital care
- other
New Accident

10/10

How did the resident / person get help?
- did not need help
- called the ambulance themselves
- through the help of a relative living in the same household or through another relative
- with the help of a neighbor or a friend
- through a safety bracelet
- along with a normal service visit
- through a normal home care visit
- with the aid of a nurse
- another way

Resident / person waited for help
- under 1/2 hours
- 1/2-1 hours
- 1-6 hours
- 6-12 hours
- 12-24 hours
- over 24 hours
- no information

Was the accident caused by another resident / person?
- no
- yes, caused intentionally
- yes, caused unintentionally
- not known

« Previous  Save and proceed »
<table>
<thead>
<tr>
<th><strong>Basic information:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accident ID</strong></td>
<td>12810</td>
</tr>
<tr>
<td><strong>Time of accident</strong></td>
<td>15.9.2010 wed 00:00</td>
</tr>
<tr>
<td><strong>Person</strong></td>
<td>89 y. female</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work shift</strong></td>
<td>night (22:00-06:59)</td>
</tr>
<tr>
<td><strong>Injury type</strong></td>
<td>fall on the same level</td>
</tr>
<tr>
<td><strong>Manner of fall</strong></td>
<td>forward or forward sideways</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>The accident happened</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scene of the accident</strong></td>
<td>indoors</td>
</tr>
<tr>
<td><strong>Situation when the accident happened</strong></td>
<td>bedroom</td>
</tr>
</tbody>
</table>

| **Resident / person was wearing a hip protector when the accident happened** | yes |

<table>
<thead>
<tr>
<th><strong>Internal cause of injury. Max 2 options</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External cause of injury (connected to environment). Max 2 options</strong></td>
<td></td>
</tr>
<tr>
<td>losing balance, losing strength medication</td>
<td></td>
</tr>
<tr>
<td>bad lighting</td>
<td>aid device was not with / was forgotten</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Resident / person was in the accident situation</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Did the accident cause an injury or pain?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Injury:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Location of the injury</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Type of injury</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Determining the injury requires further examinations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Place of care</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Injury:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Location of the injury</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Type of injury</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Determining the injury requires further examinations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Place of care</strong></td>
<td></td>
</tr>
</tbody>
</table>
### TAPE© Accident log

#### Choose units to reporting

<table>
<thead>
<tr>
<th>Units to Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kotihaito</td>
</tr>
<tr>
<td>Ksh A-alue</td>
</tr>
<tr>
<td>Ksh B-alue</td>
</tr>
<tr>
<td>Ksh C-alue</td>
</tr>
<tr>
<td>KLA Viitakumpu kotihaito</td>
</tr>
<tr>
<td>Ksh Kuusankoski</td>
</tr>
<tr>
<td>Ksh Anjalanthsoski</td>
</tr>
<tr>
<td>Ksh Jaala</td>
</tr>
<tr>
<td>Ksh Kouvola</td>
</tr>
<tr>
<td>Ksh Valkeala</td>
</tr>
<tr>
<td>Kotihaito Jokela</td>
</tr>
<tr>
<td>Kotihaito Vuohijävi</td>
</tr>
<tr>
<td>Kotihaito Anjala</td>
</tr>
<tr>
<td>Kotihaito Myllykoski-Sippola</td>
</tr>
<tr>
<td>Kotihaito Viiala</td>
</tr>
<tr>
<td>Kotihaito Inkeroinen vanha</td>
</tr>
<tr>
<td>Kotihaito Yöpartio Ak</td>
</tr>
<tr>
<td>Yöpartio Kla</td>
</tr>
<tr>
<td>Kotihaito Elimäki</td>
</tr>
<tr>
<td>Kotihaito Kuusa 1 ja 2</td>
</tr>
<tr>
<td>Kotihaito Kuusa 3 ja 4</td>
</tr>
<tr>
<td>Kotihaito Yöpartio Ksnk</td>
</tr>
<tr>
<td>Kotihaito Inkeroinen</td>
</tr>
<tr>
<td>Kotihaito Inkeroisten pk</td>
</tr>
<tr>
<td>Kotihaito Koria</td>
</tr>
<tr>
<td>Kotihaito Valkeala</td>
</tr>
<tr>
<td>Tukipalvelut</td>
</tr>
</tbody>
</table>

#### Choose all

| Choose all                                  |

#### Target of report

<table>
<thead>
<tr>
<th>Target of report</th>
<th>Begin</th>
<th>End</th>
<th>Gender</th>
<th>Graph headers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents by month</td>
<td>1</td>
<td>9</td>
<td>Both</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Injury type 1/2006 - 9/2010 Both

- Not known: 1.5%
- Other accident: 2.8%
- Getting pressed/squeezed: 0.1%
- Frostbite accident: 0.1%
- Burn accident: 0.1%
- Lifting or reaching accident: 0.0%
- Found on the floor/ground: 4.4%
- Stumbling when getting up: 7.9%
- Falling from a toilet seat: 1.8%
- Falling from a chair/wheelchair: 5.5%
- Falling from bed: 0.9%
- Someone else pushed or made fall: 0.9%
- Slipping: 1.8%
- Colliding: 0.0%
- Tripping: 5.5%
- Collapsing or slumping: 7.6%
- Fall on the same level: 46.7%

Accidents in selected timespan
All: 1033
Men: 251
Women: 782
Accidents in selected timespan
All: 1033
Men: 251
Women: 782
Accidents in selected timespan
All: 1033
Men: 251
Accidents in selected timespan
All: 1033
Men: 251
Women: 782
Accidents in selected timespan
All: 1033
Men: 251
Women: 782
Conclusion

• **TAPE**- is used for injury prevention and for the evaluation of the effectiveness of prevention actions

• **TAPE**- is a tool for safety management at several levels - viewing rights have been created for those who are responsible for elderly care in the municipality
### Add new accident:

Form: [home and residential care ➔](#)

### Printable form:

Printable form (Word-file): [Download ➔](#)

### Open accidents: (5 newest)

<table>
<thead>
<tr>
<th>Nro</th>
<th>Date</th>
<th>Weekday</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>11857</td>
<td>7.6.2010</td>
<td>Mon</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>11105</td>
<td>24.3.2010</td>
<td>Wed</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>11081</td>
<td>23.3.2010</td>
<td>Tue</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>10782</td>
<td>17.2.2010</td>
<td>Wed</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>10726</td>
<td>11.2.2010</td>
<td>Thu</td>
<td>Edit</td>
<td>Delete</td>
</tr>
</tbody>
</table>

### Closed accidents: (5 newest)

<table>
<thead>
<tr>
<th>Nro</th>
<th>Date</th>
<th>Weekday</th>
</tr>
</thead>
<tbody>
<tr>
<td>5518</td>
<td>8.4.2008</td>
<td>Tue</td>
</tr>
<tr>
<td>1303</td>
<td>27.9.2006</td>
<td>Wed</td>
</tr>
</tbody>
</table>
Two more variables are under development

- time-related variable for measuring the actions that have been performed in the facilities (e.g. increased the number of staff, reduced the medication, removed the thresholds, refurnished the room etc…)

- staff-patient ratio at the time of accident by work shift
Thank you for your attention

Funding:
Finnish Ministry of Social Affairs and Health (75%)
Kouvola City (25%)

Contact information:
ilona.nurmi-luthje@kouvola.fi