Digital "Mind your step" weather warning for people of advanced age

Preventing Weather-Related Falling Accidents

Pilot Project in Vorarlberg, Austria
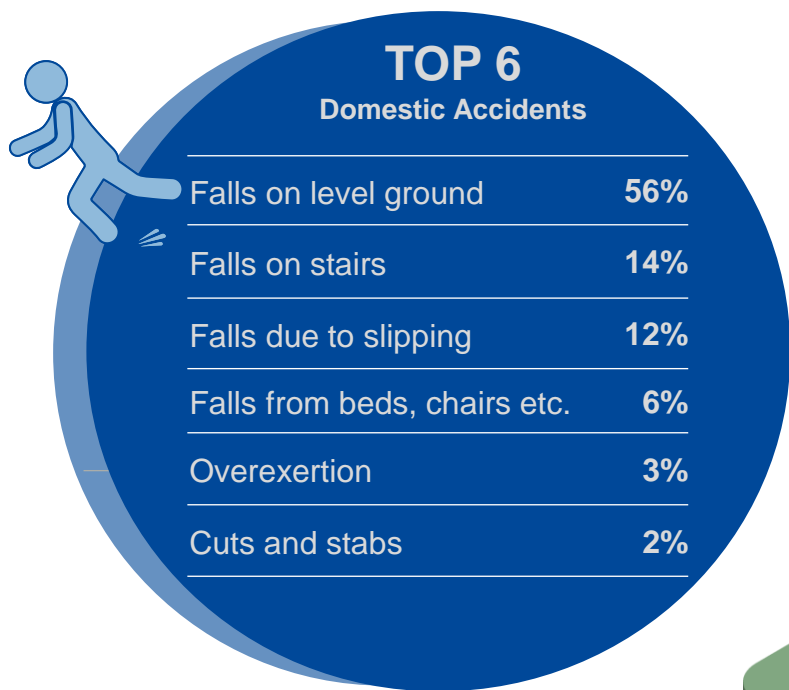
Mag. Martin Pfanner / Michael Mochart, MSc MSc | 23 & 24 June 2022 | EU-SAFETY 2022 – Vienna

65-plus domestic accidents

UBIMET — WEATHER MATTERS

KFV

45 out of 100 accidents of the 65-plus generation occur in private homes (2020: 90,000 accidents), another 36,000 accidents happen in the near surroundings of the residences.
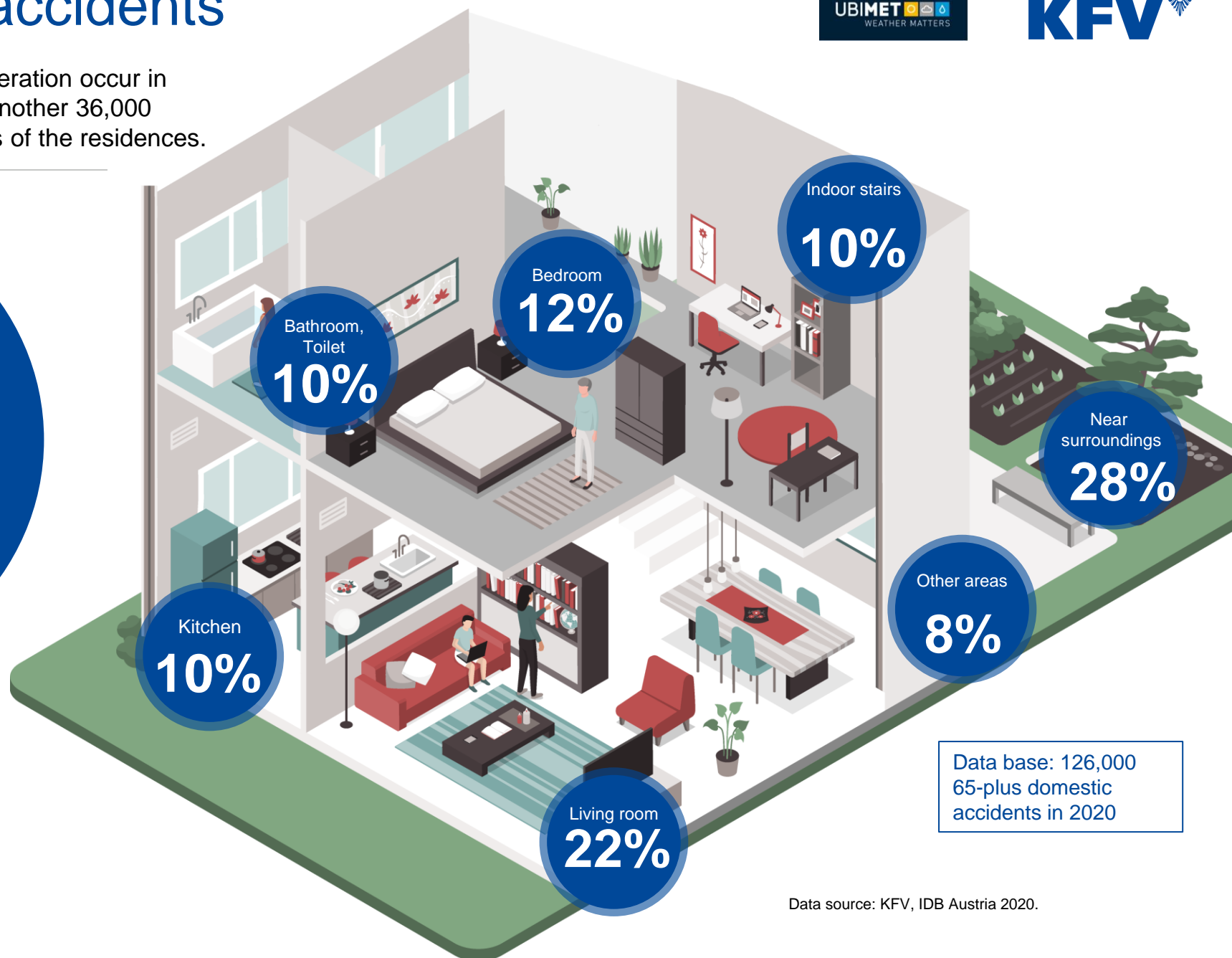
TOP 6
Domestic Accidents

Falls on level ground	56%
Falls on stairs	14%
Falls due to slipping	12%
Falls from beds, chairs etc.	6%
Overexertion	3%
Cuts and stabs	2%

74% of all 65-plus domestic accidents involve **women**

90% of all persons who die in domestic accidents are **older than 64 years**

Indoor stairs **10%**

Bedroom **12%**

Bathroom, Toilet **10%**

Near surroundings **28%**

Other areas **8%**

Kitchen **10%**

Living room **22%**

Data base: 126,000 65-plus domestic accidents in 2020

Data source: KFV, IDB Austria 2020.

About UBIMET

Innovation leader in Europe
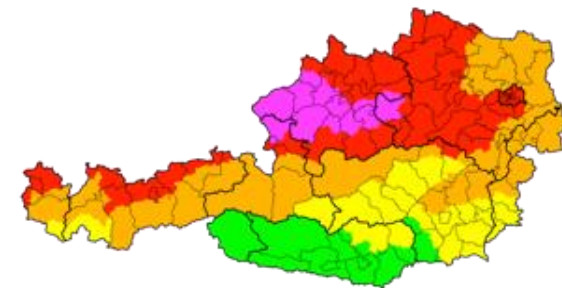
Market leader in meteorological safety services

Mission: make 8 billion people safer and wealthier

Headquarter in Vienna, Austria

Pioneering AI-Technologies

Project phase 1
Is there a correlation between weather and accidents?

Situation

UBIMET

- High precision weather data
- 100 Terrabytes of data
- Past 30 years

KFV

- 30.000 accidents of people >65 years
- 13 hospitals from 11 Austrian cities
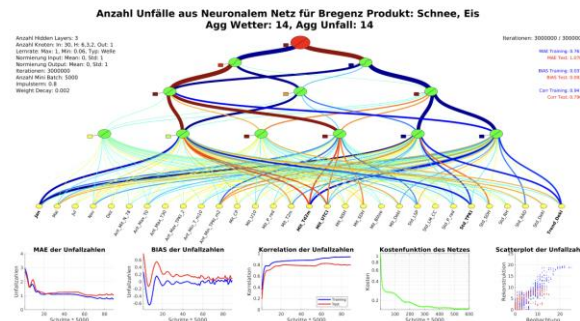- Between 2012 – 2019

Approach

Statistical methods

- Linear regression
- Random Forests
- Neuronal networks

Anzahl Unfälle aus Neuronalem Netz für Bregenz Produkt: Schnee, Eis
Agg Wetter: 14, Agg Unfall: 14

Results

- **Significant correlation** between weather parameters and accidents
- **Parameters:** Snow, Storm, precipitation & temperature, but also Föhn and changes in air pressure
- **Women** are significantly more sensitive to weather
- **UBIMET neuronal networks** can predict accidents with high accuracy
- Up to **22% of all accidents** of people older 65y are caused by weather

Project phase 2
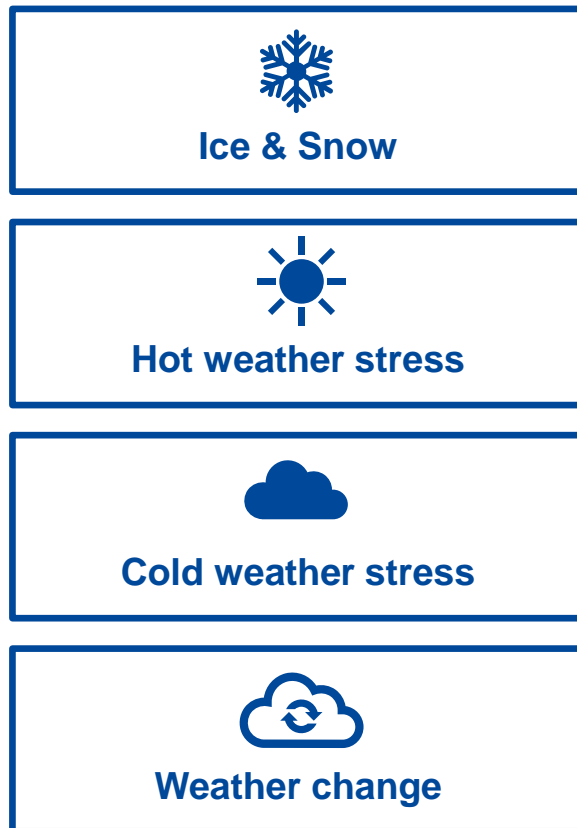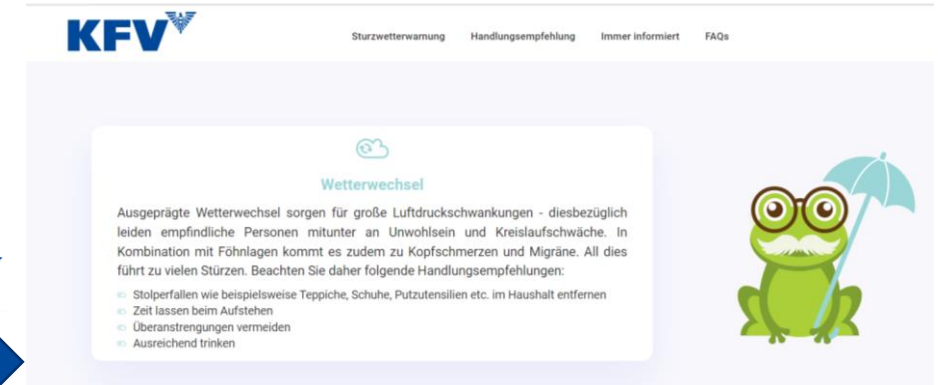## The alerting system "Sturzwetterwarnung"

Parameter

- Ice & Snow
- Hot weather stress
- Cold weather stress
- Weather change

SMS

07:51

Warning ⚠️

Ausgeprägte **Wetterwechsel** sorgen für große Luftdruck-schwankungen, Plz 6840, 24.06.2022 Kreislaufschwäche und Kopfschmerzen möglich

Maßnahmenvorschläge

KFV UBIMET

Landing Page

Example: Weather Change

KFV — Sturzwetterwarnung   Handlungsempfehlung   Immer informiert   FAQs

Wetterwechsel

Ausgeprägte Wetterwechsel sorgen für große Luftdruckschwankungen - diesbezüglich leiden empfindliche Personen mitunter an Unwohlsein und Kreislaufschwäche. In Kombination mit Föhnlagen kommt es zudem zu Kopfschmerzen und Migräne. All dies führt zu vielen Stürzen. Beachten Sie daher folgende Handlungsempfehlungen:

- Stolperfallen wie beispielsweise Teppiche, Schuhe, Putzutensilien etc. im Haushalt entfernen
- Zeit lassen beim Aufstehen
- Überanstrengungen vermeiden
- Ausreichend trinken

Measures recommended

- Remove tripping hazards
- Take time when getting up
- Avoid overexertion
- Drink plenty of fluids

The Target Groups

Step 1:   Institutions with multiplier effects

⊕   Rotes Kreuz (Red Cross)

⊕   Samariterbund

🤝   Hauskrankenpflegeverband

🚑   ARGE Mobiler Hilfsdienst

Step 2:   All people of advanced age

👥   Owners of smartphones

→ 3,800 employees
→ voluntary registration on
    www.sturzwetterwarnung.at

The Benefit

The info service makes a valuable contribution to **reducing the number of accidents**

🚶 prevents a lot of human suffering and

€ reduces the high costs of accidents in the leisure sector:

💊 medical treatment costs

🩺 care costs

➕ administrative costs

🚑 insurance costs

📁 organisational efforts

Weather warning

KFV UBIMET WEATHER MATTERS

www.sturzwetterwarnung.at

Thank you for your attention!

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