Measuring Sucess in Prevention Programs

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ICAR PREVENTION WORKGROUP

About the Prevention Work Group

The Prevention Workgroup of ICAR was founded in 2011. The host for the working group is Swedish EPA / Mountain Safety Council

About participating

Participating in the working group is voluntary and it is a completely open group that mainly consists of ICAR delegates from member organizations

Aims and purposes

The purpose and aim for the work is to provide an efficient exchange of ideas as well as launching common studies and projects related to preventive safety. It is also about sharing experiences and to jointly monitor and support research and development work on preventive safety in mountainous areas.

The decision on how, if and when integration of the discussed strategies on the national level should take place fully remains in the hand of the respective country.

The group try to meet 4-5 times/year, mostly via video meetings, at least 1-2 workmeetings, focusing on arranging workshops/conference/seminars in mountain safety related issues

Some examples of themes and tasks during the years

→ Workshop in Innsbruck 2012 - Import/Export of avalanche fatalities /first approach regarding measuring success in prevention programs

→ Creation of a web service 1: discussion forum and sharing information. (Finished)

--> Creation of a web service 2: Creation of a web service with useful national mountain safety related information for international travelers (ongoing)

--> Arrange of a workshop on ATES – which is now applied in several European countries such as Canada, USA, Norway, Sweden, Spain (Catalonia), Switzerland (Jura) (Finished)

--> Networking: use the experience of other ICAR members to bring things forward in the home country. One of the examples the past year is Swedens invitation of experts to a workshop regarding establishing a future avalanche warning service in Sweden. (Finished)

→ Collecting accident data , creation of an recommendation of what data every country should try to collect and report. (ongoing)

→ Creation of the ICAR Mountain Safety Foundation (under preparation)

→ Best practise in accident prevention (Human factors/ Decision tools-ICAR recommendation in 2015)

ICAR Recommendation 20151017-AVA-REC0012 Accident Prevention

Recommendation Code

To help prevent incidents and accidents in the mountains, it is highly recommended to follow these principles:

- Seek appropriate training
- Use relevant decision-making tools/checklists
- Prior to departure plan alternatives to your main objective
- Constantly re-evaluate conditions and adapt decisions as necessary
- Establish an open communication culture within the group

Whereas these principles are equally valid for organized mountain rescue, refer to all ICAR recommendations for specific topics of mountain rescue.

Decision tools - an overview

Generic Guidelines
ISO 31000

Checklists

Main Target Groups
Guiding, mountaineering, skiing

Some examples
3 x 3 (W. Munter)
NivoTest (METEORISK)
5-step Approach (M. Wiegele)

Main Target Group
Organized rescue

Some examples
Rescue compass (SLF)
RADeMS (BC SAR)

Decision Support Systems

Main Target Groups
General purpose risk-based decision support; guiding, mountaineering, skiing

Some examples
Reduction method (W. Munter)
ERM, GRM
Stop or Go (M. Larcher, OeAV)
SnowCard (Engler and Mersch)
NivoTest (Bolognesi)
Avaluator (Avalanche Canada)
Obvious Clues (Mcammon with others)
SnowSense(Australia
White Risk (SLF/CH)

Measuring Sucess in Prevention Programs

What is a prevention program? (Education, Forecasting, Communication products, Desicion tools, Guidelines, Guiding and so on.)

Why measure ?

How can we measure sucess ? (some examples)

A possible setup of a workshop in spring 2017

Some results to be presented at ICAR Congress in 2018- Recommendation/Best Practice/Toolbox in how to measure Sucess in Prevention Programs

Measuring Prevention

"Rigorous evaluation of the effectiveness of prevention activities is essential to the wide acceptance of preventive interventions and the willingness to pay for them."
Thacker, 1994

Measuring Sucess in Prevention Programs

Measuring Prevention

- The problem – investment in prevention usually comes out of tragedy, successful programs hopefully mean lower fatalities but is that a true picture?
- Its much easier to track effort expended (i.e. how much you spent), its much more complex to track IMPACT.
- How can we track impact of a prevention program?
- Inconsistencies in how prevention programs are tracked translates into the inability to benchmark and contrast impact/effectiveness against other approaches and/or initiatives.

Measuring Sucess in Prevention Programs

Some ideas presented in the past regarding how to measure success in prevention programs

- Usage (accident rates), # of persons trained in avalanche awarness, # of forecast views?
- All prevention program managers need statistics training
- Standardize methods of data collection and analysis
- Qualitative is equally important as quantitative
- Evaluation is equally important as program development
- System dynamics is probably a key to success (causal loop diagrams)
- Osborne and Gaebler (1992) revealed that “the simple act of defining measures is extremely enlightening to many organizations

. . . . People then begin to ask the right questions, to redefine the problem they are trying to solve, and to diagnose that problem in a new light..

Measuring Sucess in Prevention Programs

Some thoughts picked up from a panel discussion at ISSW in Breckenridge 2016

Many request some kind of an International standardization or at least try to achieve an common method and agree upon what should be measured.

How much use, where , when and so on. Developing of an toolbox with a matrix to use.

More realtime data, developing of different kind of models, verification of forecasts. Measure the target gro of understanding of the forecasts.

Measuring Sucess in Prevention Programs

Some signs that Prevention Programs may works… and it is a fact that..

- Sales of ski touring equipment have risen steadily.
- Mountain snowmobile sales have climbed rapidly.
- Isolated surveys indicate significant increases in slopeusing in recent years.
- Anecdotal evidence says there are far more people in the mountains now than 10 years ago.
- If backcountry use is increasing while the average annual fatalities are declining or does not increase that much, then the fatality rate is likely undergoing a significant decrease, so maybe prevention programs then works?

Measuring Sucess in Prevention Programs

Important factors that could increase the accident rate in the future.

- The exposure is increasing steady and more and more people than before is…..
- practising skitouring, snowshoeing, snowmobiling during a longer season than was the case before
- experiencing new mountains and new variants of tours.
- skiing and snomobiling in steeper and more complex terrain than ever before, what was extreme for 5 years ago has now been normalized.
- skis offpist in clos connection to skiareas.
- goes freeriding on snowmobiles, often in steep and complex terrain.

Measuring Sucess in Prevention Programs

A measuring model presented and used by Norwegian Avalanche Center (NVE- (Engeseth, Trondheim 2015)

The Norwegian Avalanche Center at NVE which is responsible for Avalanche Forecasts in Norway, has together with other actors developed a model which can be used to measure sucess in their program.

Question in their annual websurvey conducted at www.varsom.no

- Have you been able to avoid an avalanche accident by using the avalanche bulletin?

Measuring Sucess in Prevention Programs

A measuring model presented and used by Norwegian Avalanche Center (NVE- (Engeseth, Trondheim 2015)

In season of **2014/2015, 341** respondents answered that they had avoided an avalanche accident by using the Avalanche bulletin issued at the time when they were planning to ski.

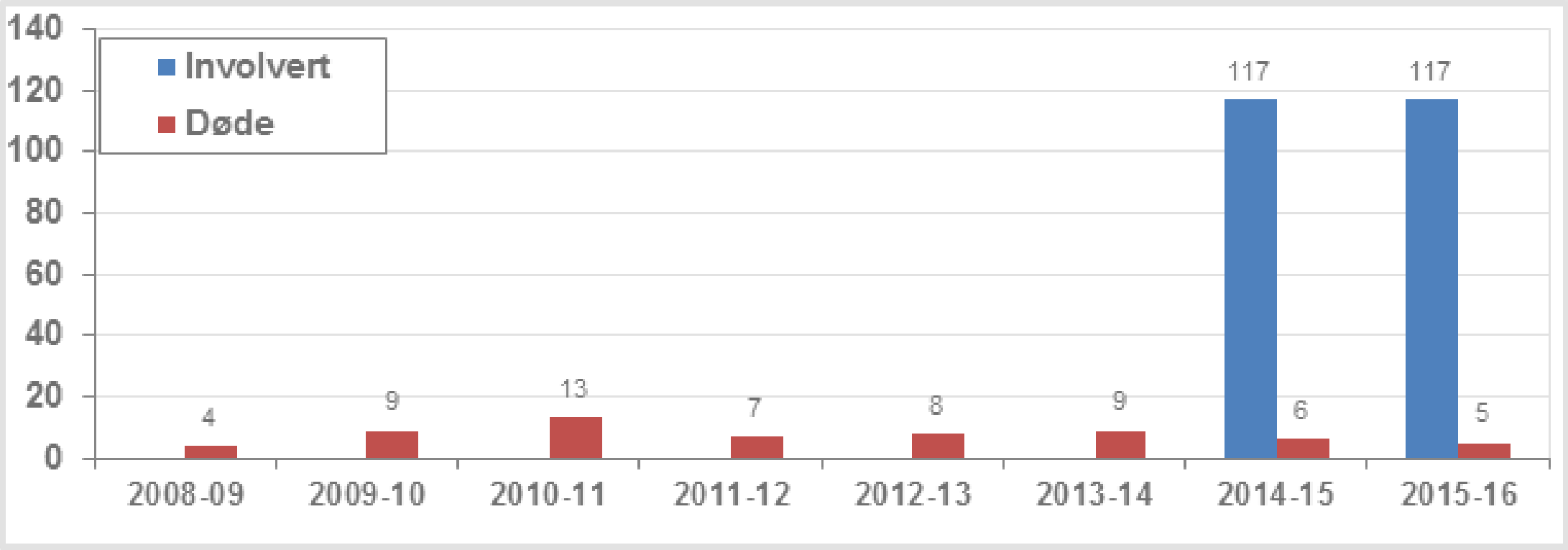
If we can assume that **25 % were right**, which means that **85 persons** had avoided an avalanche accident by using the avalanche bulletin av Varsom.no

Due to the incident reports (NVE/Norwegian Red Cross), **58 avalanches** with **117 people** involved had been registred**, were 6 fatalaties** was reported.

If we can assume that **10 %** of the people involved in an avalanche accident is killed, then they can assume that **9 lives has been saved** due to the forecasts 2014/2015 **(85 *0,1)**

In 2015/2016, 67 avalanches incidents with 117 people involved in Norway were reported, 5 fatalities

A measuring model presented and used by Norwegian Avalanche Center (NVE- (Engeseth, Trondheim 2015)



Measuring Sucess in Prevention Programs

Proposal from a majority of the organizations within the ICAR Prevention Workgroup

Arranging a workshop with the theme of ”How to measure Sucess in Prevention Programs” in connection and in cooperation with the EAWS-meeting in Munich 13-14/6 2017.

The aim for the workshop is to collect the worlds best experts in the area and during 2 days, present, discuss and produce a collection of best practises and to develop a toolbox of the best examples that can be used by any organisation when it comes to measure sucess in prevention programs.

Other agencys and organizations including researchers from other fields than mountain safety will be invited to contribute, among them the Swedish Road administration which will present their Zero Vision strategy and how they are measuring sucess

The results will be published in a written report and presented to ICAR together with a proposal to a new recommendation including a tooolbox at next years congress in Andorra in 2017.

~~ICAR PREVENTION WORKGROUP~~ (closing in October the 20th 2016)

Starting up- ICAR Avalanche Rescue Commission
(Workgroup for Prevention?)

Or, a part of Mountain Safety Knowledgebase Organization