

Research Center for Childhood Accidents

Ski Resorts: Safety Management based on Local and Hospital Data



Peter Spitzer

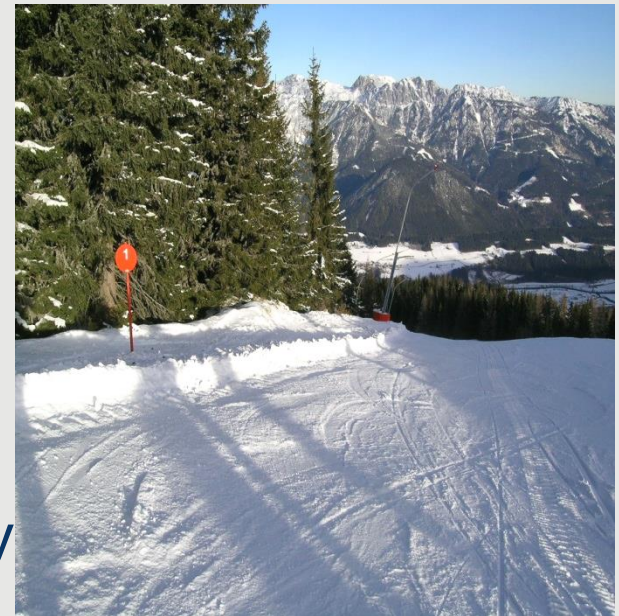
Safety-QM of Ski Resorts

History



Indicators

- Safety standards for ski slopes and lifts (preparing of slopes, closure, continual check and service)
- Information (weather, snow, rescue facilities, FIS-rules)
- Orientation (panorama boards of slopes, guidance of skiers)
- Documentation (rescue team, first aid facilities, standardized recording, safety expert group)



Timeline

- Primary inspection of the ski area:
 - Member of the Styrian government
 - Technician (lift expert)
 - Approved expert for ski slopes (FIS)
 - Employee of Safe Kids Austria
- Obtain the certificate
 - for 3 years
- Site visits
 - unannounced
- Analysis of accident data
 - Annually
 - During and after the season
- Regular inspection (after 3 years)
 - for renewing the certificate



Recording of Accidents

- Carried out by the rescue team
- Visitor who was rescued from the slope

Unfallerefassungsbogen Schigebiet _____ Lauf.Nr. _____

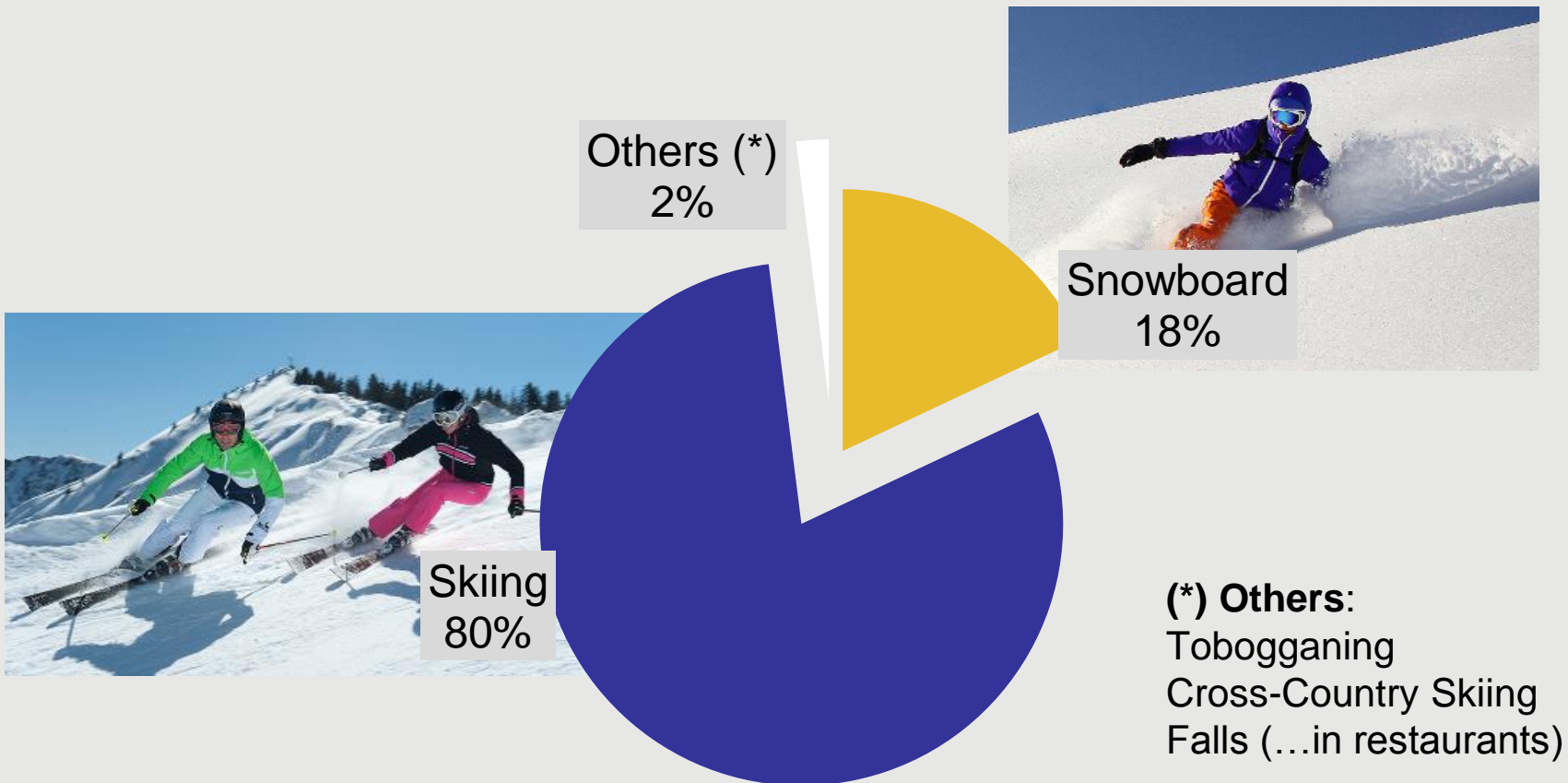
Personendaten		Geburtsdatum	
Name		Unfalldatum	
Wohnadresse		Unfall-Uhrzeit	
Telefonnummer		Nationalität	
Urlaubadresse		Geschlecht <input type="checkbox"/> M <input type="checkbox"/> W	
Tagesgast	Schiurlauber	Wievielter Urlaubstag	
Wintersportart	Unfallstelle	Unfallort	
Schifahren	Piste	Auf Plan einzeichnen!	
Snowboarden	Pistenrand	Schwierigkeitsgrad	
Rodeln	Luftanstieg / -ausstieg	Blau	
Langlaufen	Lift / Lifttrasse	Rot	
Tourengeher	Freies Gelände	Schwarz	
Anderes...	Schiroute		
	Rodelbahn/Schwieg		
	Fuwpark		
	Anderes:		
Abtransport von der Piste	Übergabe an	Übergabe an	
Akja	Rettungsauto (RTW)	Anderes...	
Skidoo	Notarztwagen (NAW)	Zielkrankenhaus	
Seilbahn	Hubschrauber		
Hubschrauber	Arzt		
Anderes...	Privat		
Unfallursache	Verletzungsregion	Verdacht auf...	
Einzelsturz	Kopf	Wunde	
Zusammenstoß mit ...	Nacken / Hals	Prellung / Zerrung	
Schifahrer	Brustkorb	Luxation	
Snowboarder	Schulter	Fraktur	
Anderer Person...	Oberarm	Anderes	
Wie viele Personen gleichzeitig betroffen	Unterarm	Bewusstseinslage	
Verletzt als Unfallverursacher	Hand	normal	
Unfallopfer	Bauch	benommen	
Anprall an festes Hindernis	Becken	bewusstlos	
	Rücken	Schutzausrüstung	
	Wirbelsäule	Schulhelm	
Unfallursache Zusatz	Oberschenkel	Rückenpanzer	
Verdacht Alkoholisierung	Knie	Wetter / Sicht	
Verdacht auf Raserei einzeln	Unterschenkel	Sonnen	
Verdacht Raserei/Werfahrl mehrere	Fuß	Bewölkt	
		Niederschlag	
Pistenverhältnisse am Unfallort	Schneezusammensetzung	Nebel	
Griff	Naturschnee	Sichtbehinderung	
Eisig	Kunstschnee		
Weich	Mehr Naturschnee		
Neuschnee	Mehr Kunstschnee		
Tiefschnee			
Schneearme Stelle			
Sonstiges: ...			
	Anmerkungen		

Name (leserlich!) _____

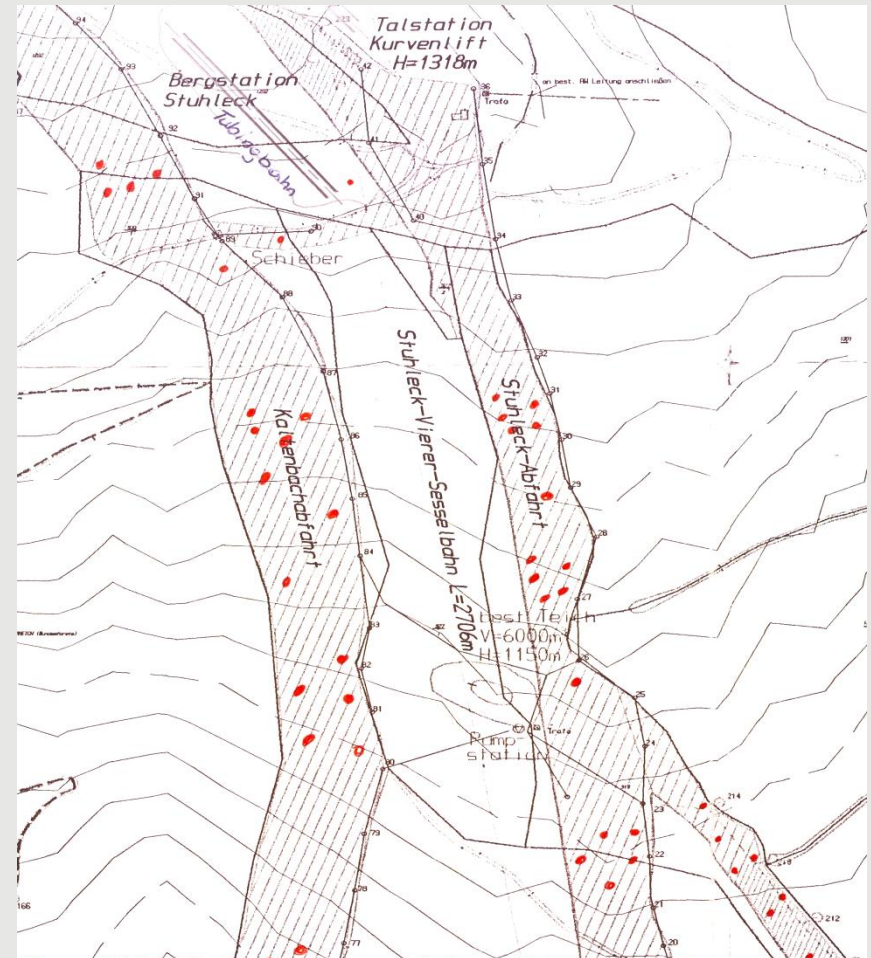
Steirisches Pistengütesiegel Unfallerefassungsbogen gültig Saison 2010/2011

<i>Personal data</i>	<i>Location, altitude</i>	<i>Date, time</i>	<i>slope name</i>
<i>Activity</i>	<i>Cause of accident</i>	<i>Consciousness:</i>	
Ski, Snowboard	fall, collision	normal - unconsciousness	
<i>Transport:</i>	<i>Slope:</i>	<i>Body part</i>	
Akja, Skidoo, Heli	normal, icy, deep snow	Head, Chest, etc.	
<i>Further transport:</i>	<i>Weather</i>		
RKW, NAW	sunny, cloudy, fog, snowing		
<i>Injury</i>	<i>Hospital</i>	<i>Location of accident</i>	
fracture, brain conc. etc.	transferred	slope, boarder line, free area route	

Mode of Accident (n=1.927)



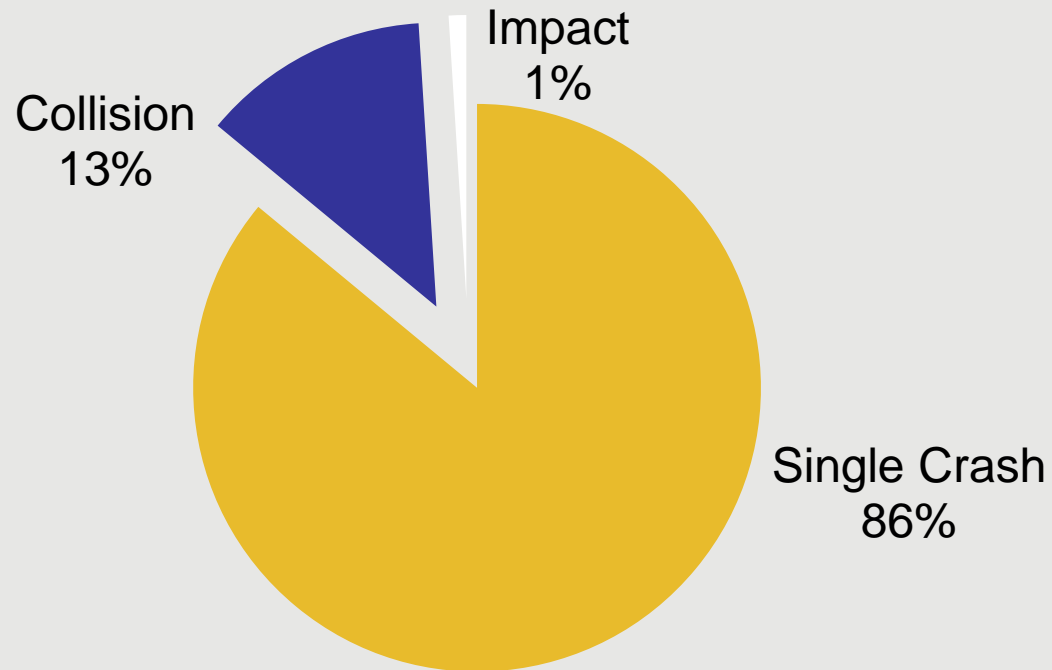
Documentation



Rescue teams

- First aid --- definite treatment
- Accident documentation
- Safety expert team

Type of Accident (n=1.927)



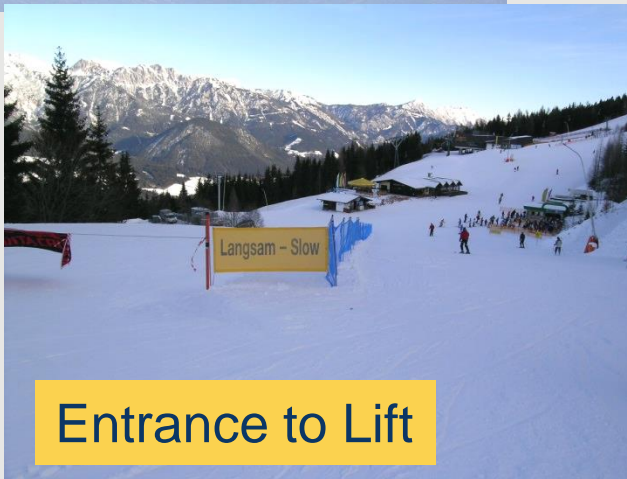
Safety Facilities



Cushioning



Securing of Snow Guns

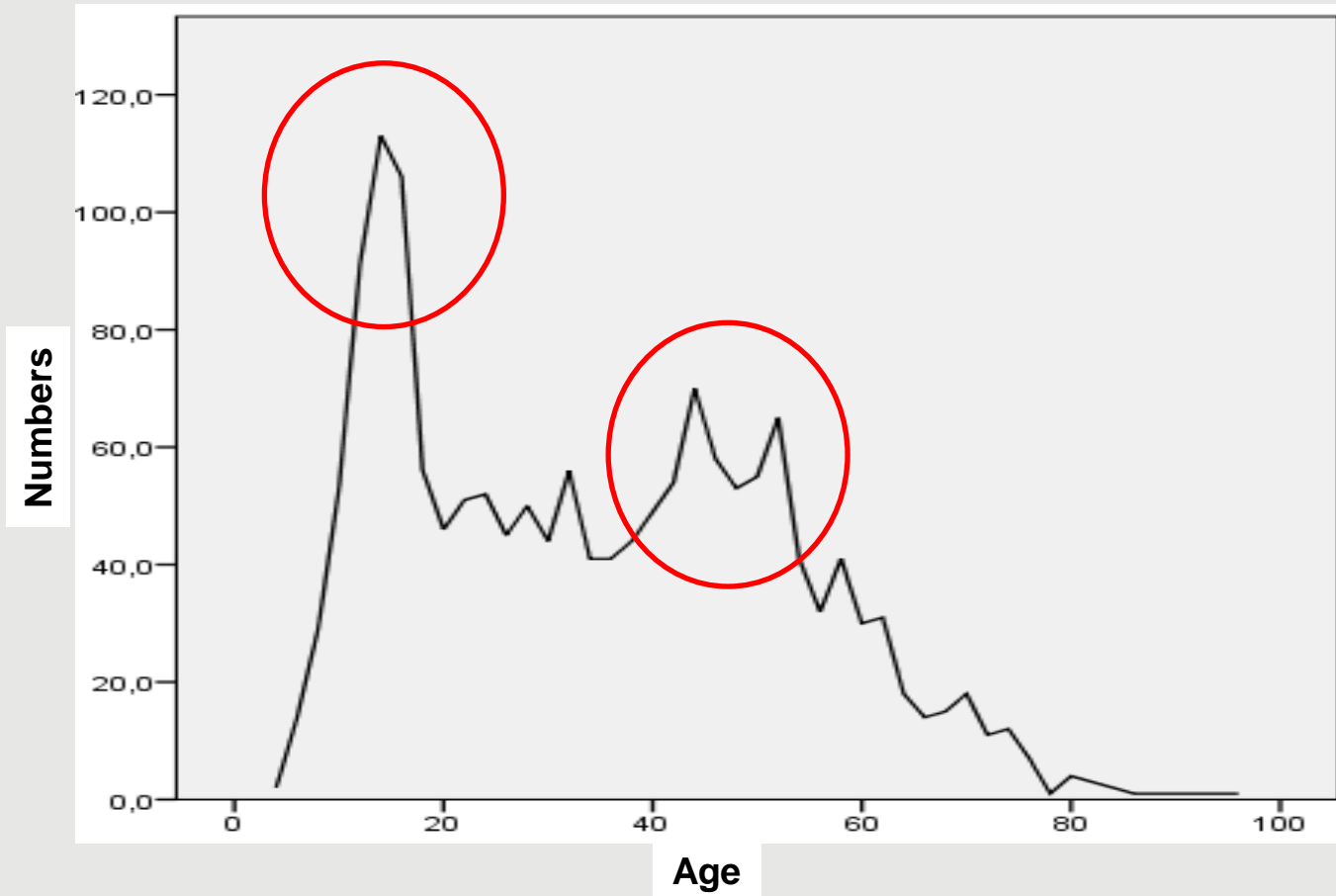


Entrance to Lift



Safety Nets

Age of Injured Skiers (n=1.927)



Safe Winter Sports



Mode of Visit (n=1.927)



Nationality (n=1.927)



Information

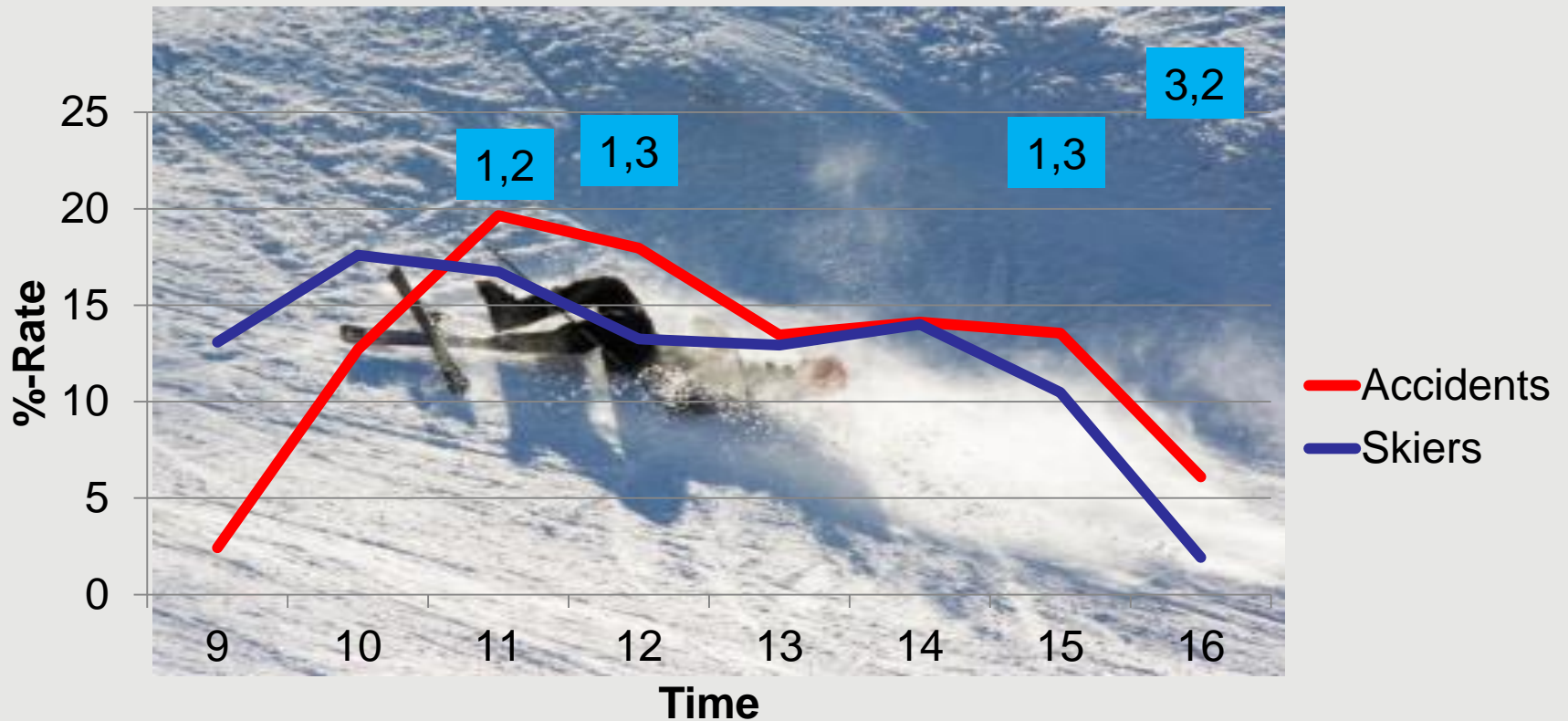


Information

- Weather
- Snow condition
- Live Cam
- Several languages

Accident Ratio per Hour

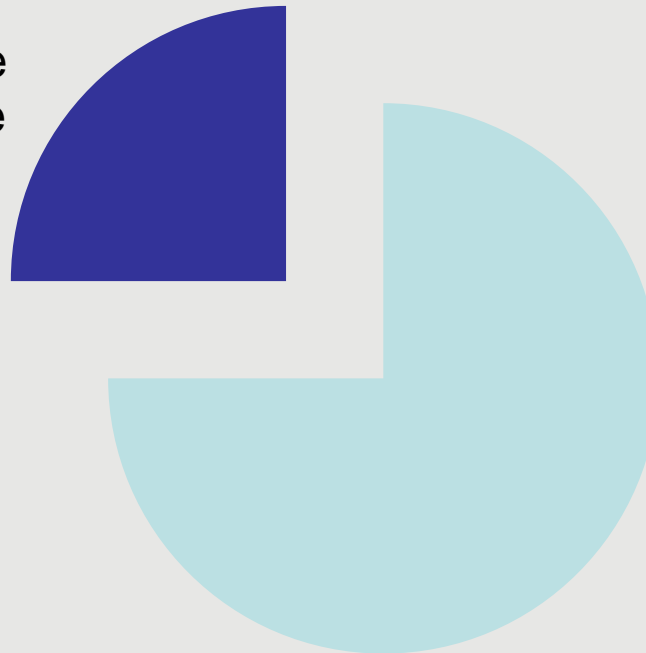
%-Accidents / %-Skier



Scope of Accidents

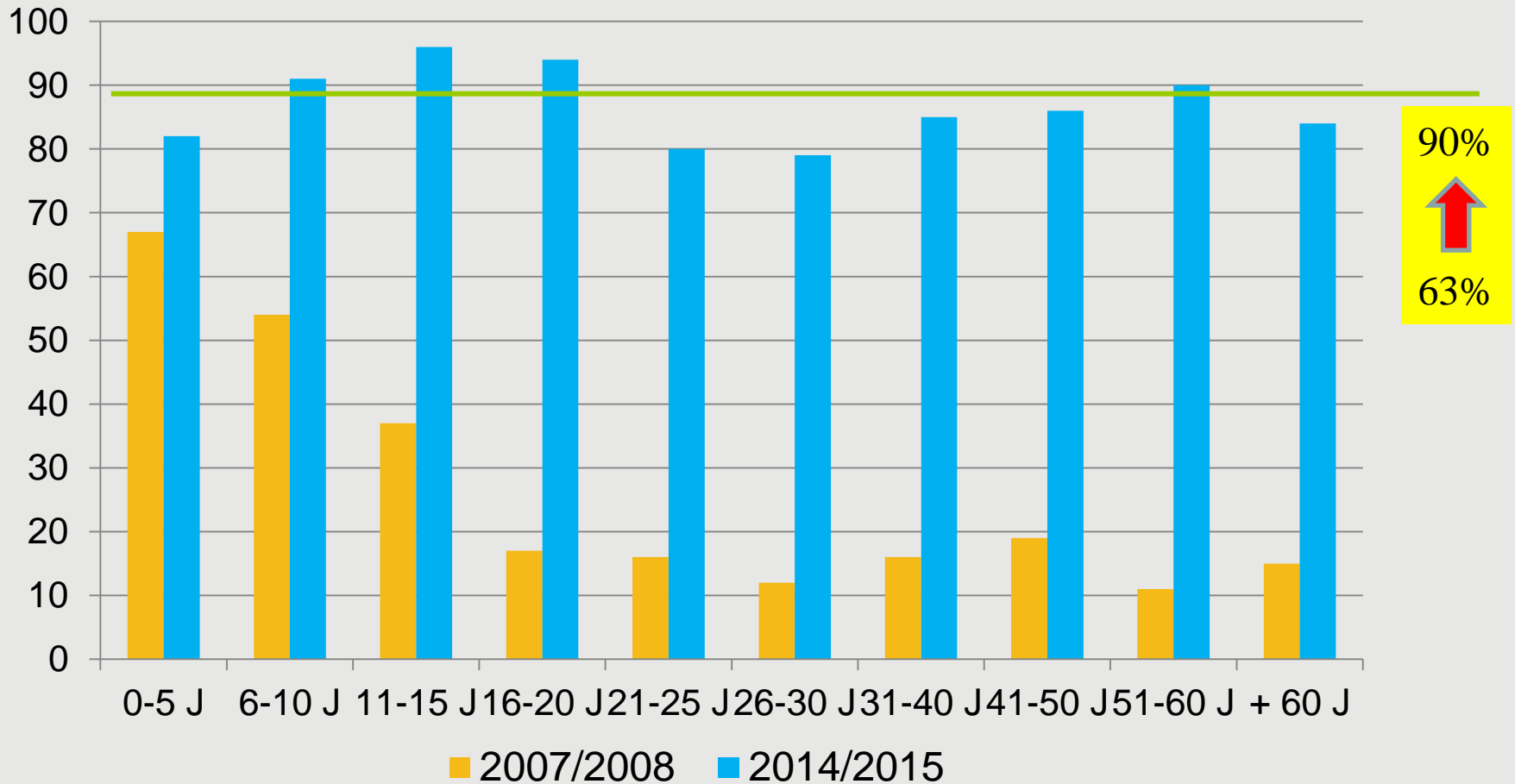
Mode of Rescue

Rescue
Service
25%

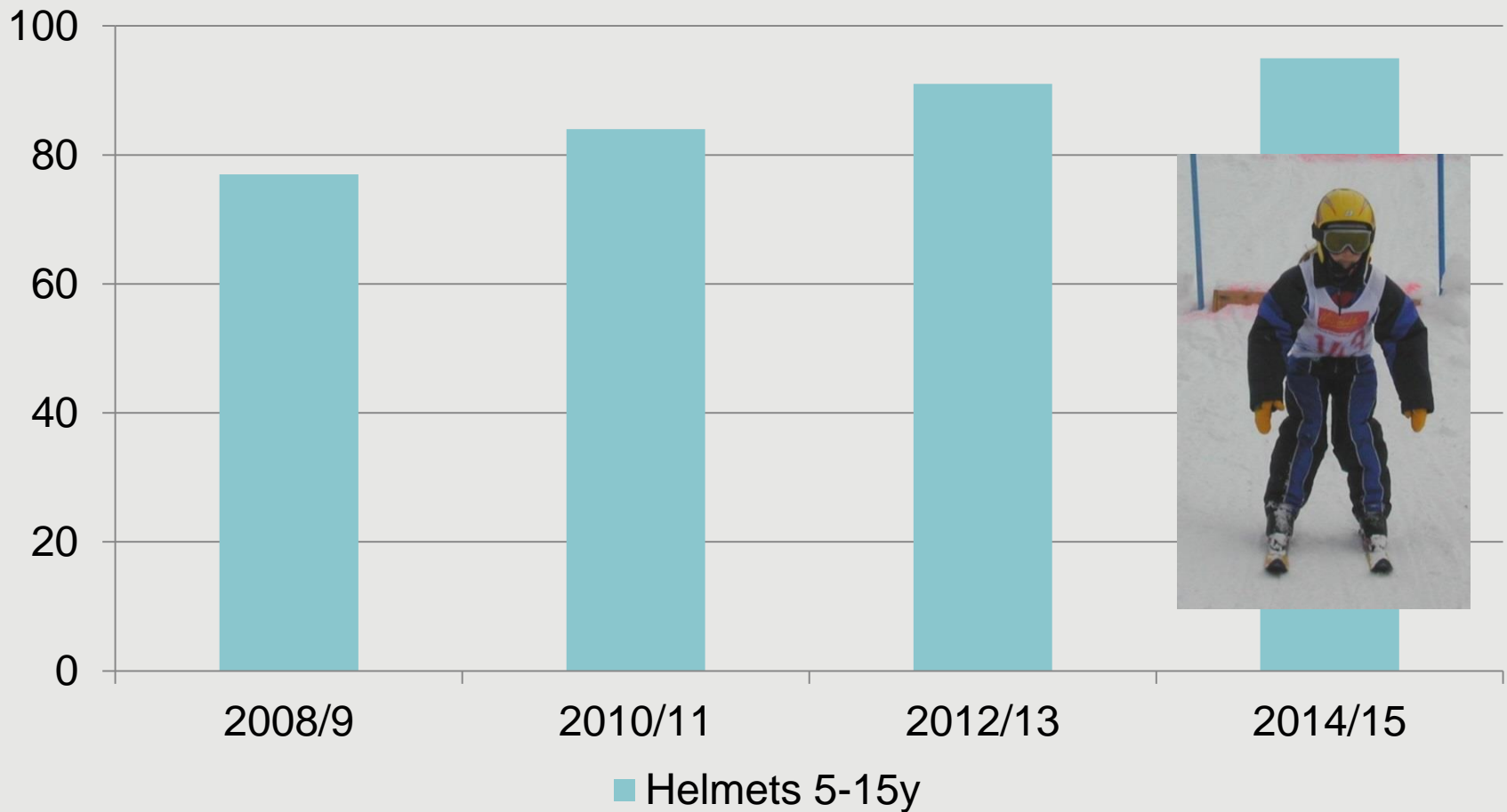


Hospital
Self Visit
75%

Helmet Wearing Rate



Helmet Wearing Rate Children



Results after 10 Years

Analysis of 4 Ski Resorts

(Change in Accident Rate per Skier Days)

	Season Start	Season Last	Effect
Resort 1:	since 2000/01	2009/10	-40%
Resort 2:	since 2000/01	2009/10	-21%
Resort 3:	since 2002/03	2009/10	- 3%
Resort 4:	since 2002/03	2009/10	-11%



Winter is coming!