



Congresso Nazionale IRC

2019

11 • 12 OTTOBRE

Centro Congressi Veronafiere



Italian  
Resuscitation  
Council

# Conflitto d'interesse

Sviluppo concettuale del prodotto commerciale MOMENTUM®. Nessun ritorno finanziario

**HOCKEY CLUB AMBRÌ PIOTTA**





# Cantone Ticino: densità popolazione

## • Area

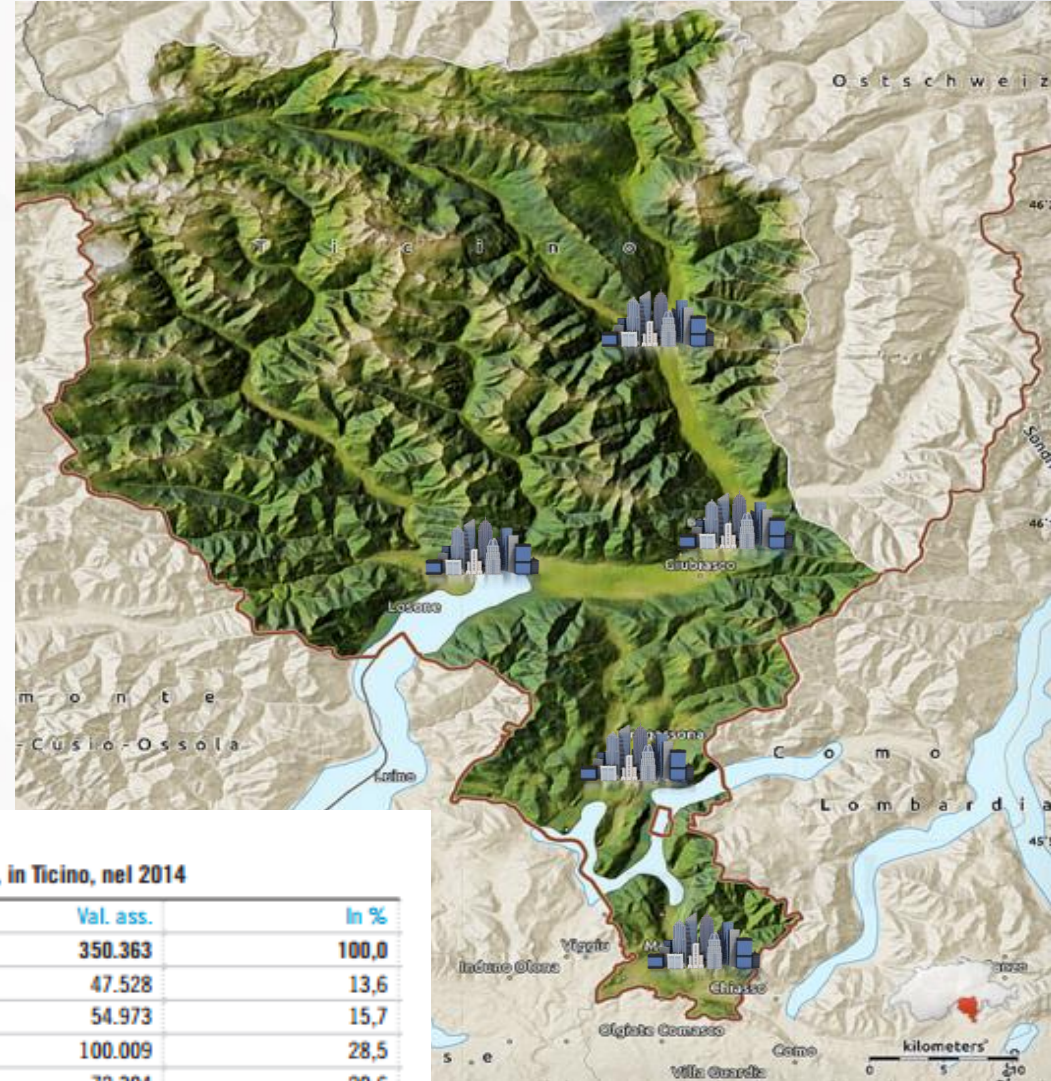
2'812 km<sup>2</sup> (1, 085 sq/mi)

## • Population

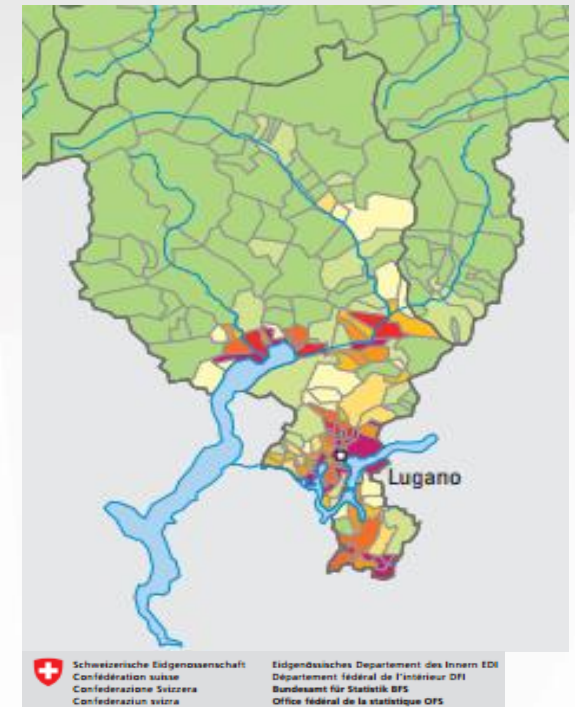
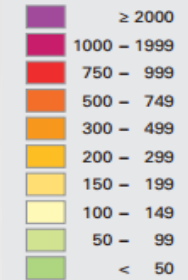
≈ 350'000 inhabitants

## • Density

120/km<sup>2</sup> (320/sq mi)



Einwohner pro km<sup>2</sup> Gesamtfläche  
Habitants par km<sup>2</sup> de surface totale

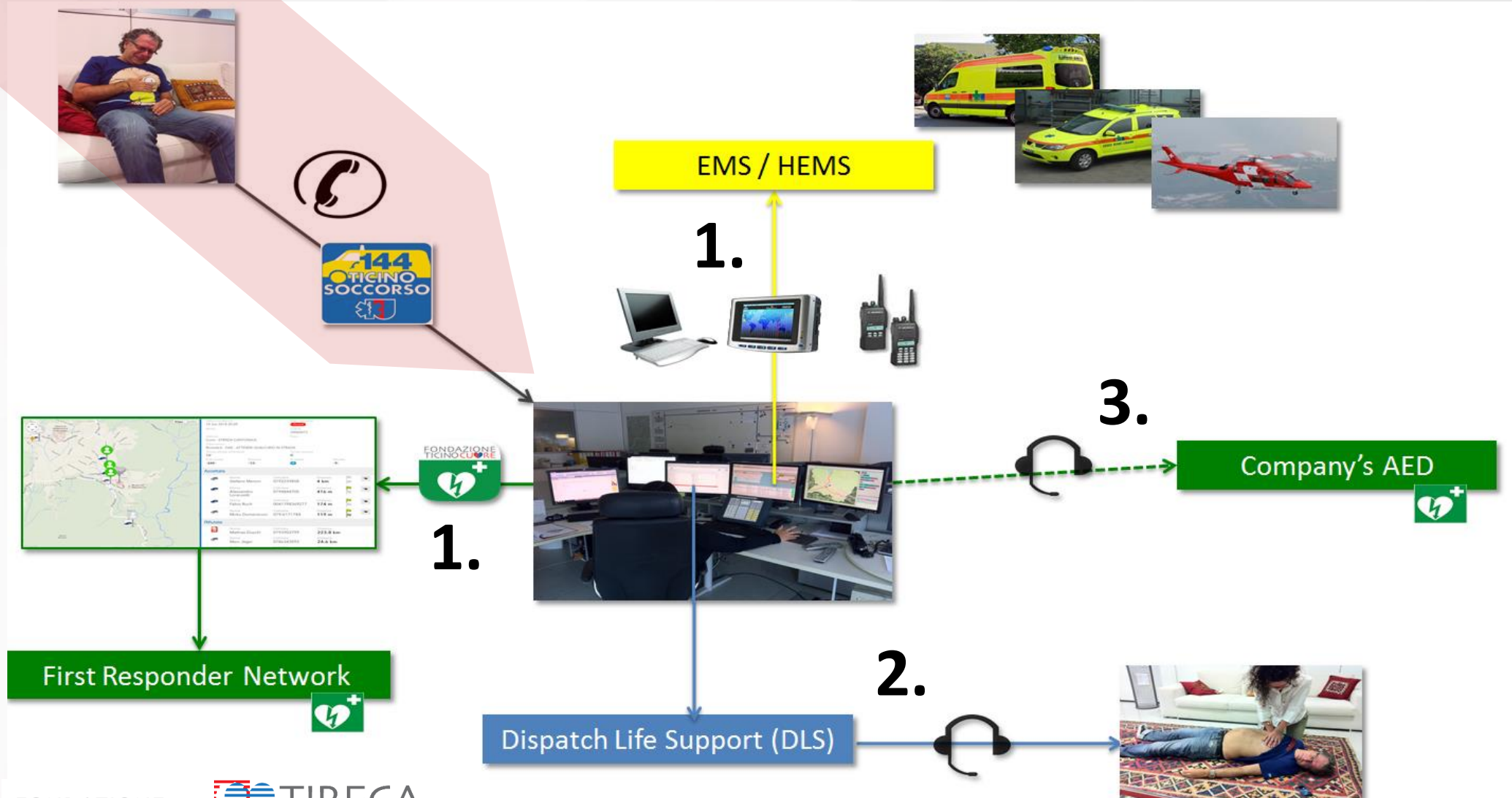


**T.3**  
Popolazione residente permanente al 31.12, secondo la classe d'età, in Ticino, nel 2014

|               | Val. ass.      | In %         |
|---------------|----------------|--------------|
| <b>Totale</b> | <b>350.363</b> | <b>100,0</b> |
| 0-14          | 47.528         | 13,6         |
| 15-29         | 54.973         | 15,7         |
| 30-49         | 100.009        | 28,5         |
| 50-64         | 72.304         | 20,6         |
| 65 e più      | 75.549         | 21,6         |

Fonte: Statistica della popolazione e delle economie domestiche (STATPOP), Ufficio federale di statistica, Neuchâtel;  
elaborazione Ustat, Giubiasco

# Attività CeOp *Ticino Soccorso* 144 in caso di OHCA





# Cantone Ticino: Soccorso preH

## • Ambulance

ALS Units  
Paramedic

## • Doctor car

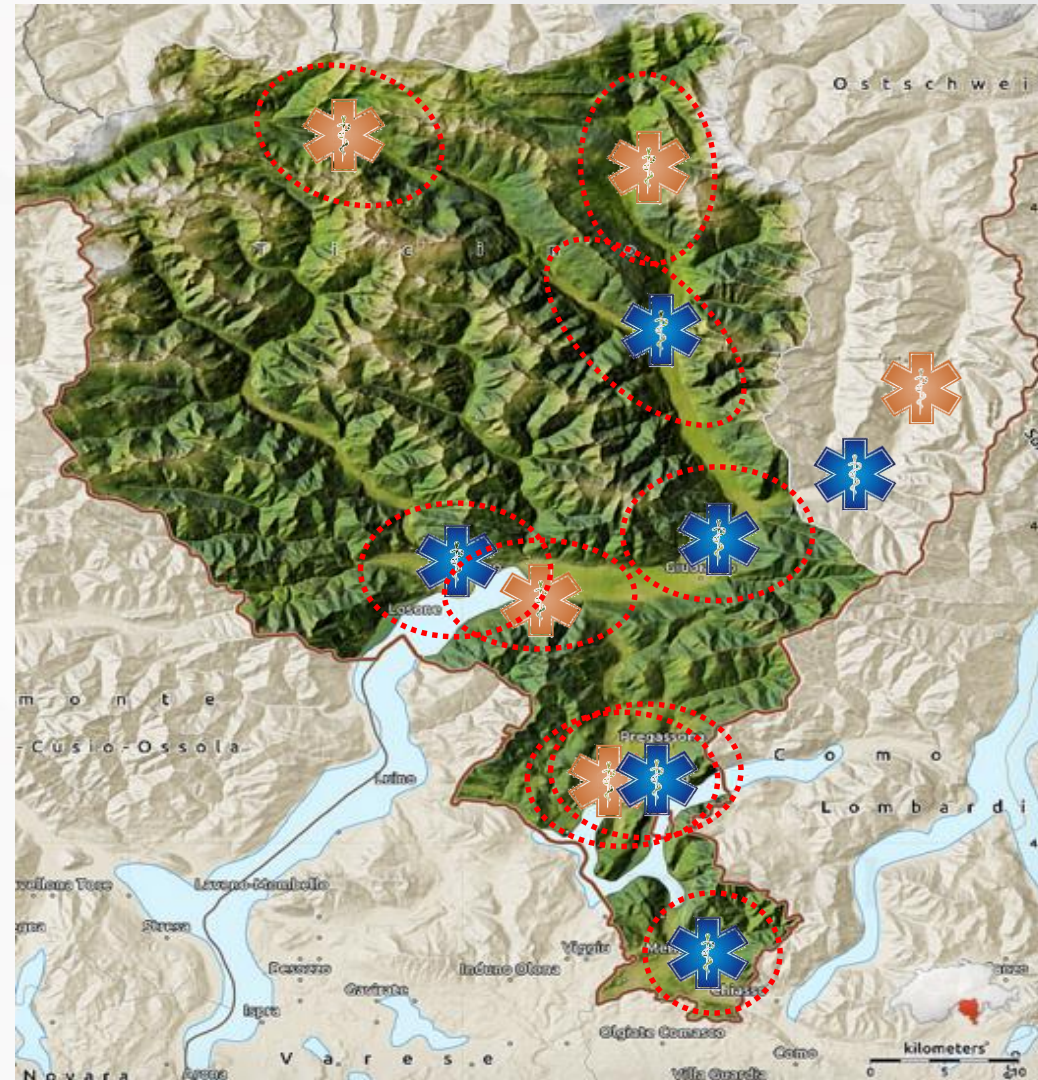
Emergency Physician  
Specialized Nurse  
(Anesthesia / ICU)

## • HEMS

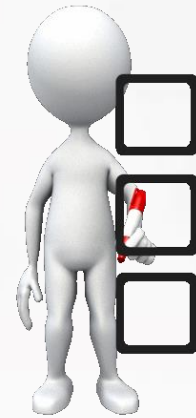
Emergency Physician  
24H/7

## • EMCC

MPDS  
EMT / Paramedic  
3 (2) dispatcher on shift  
T-CPR



# I nostri First Responder



**Enti di primo intervento** (Forze dell'ordine, Pompieri)

**Samaritani** (laici formati primi soccorsi, organizzati in gruppi)

**Sanitari** (Medici, Infermieri, Soccorritori, ...)

**Cittadino** (laici formati in BLSD)



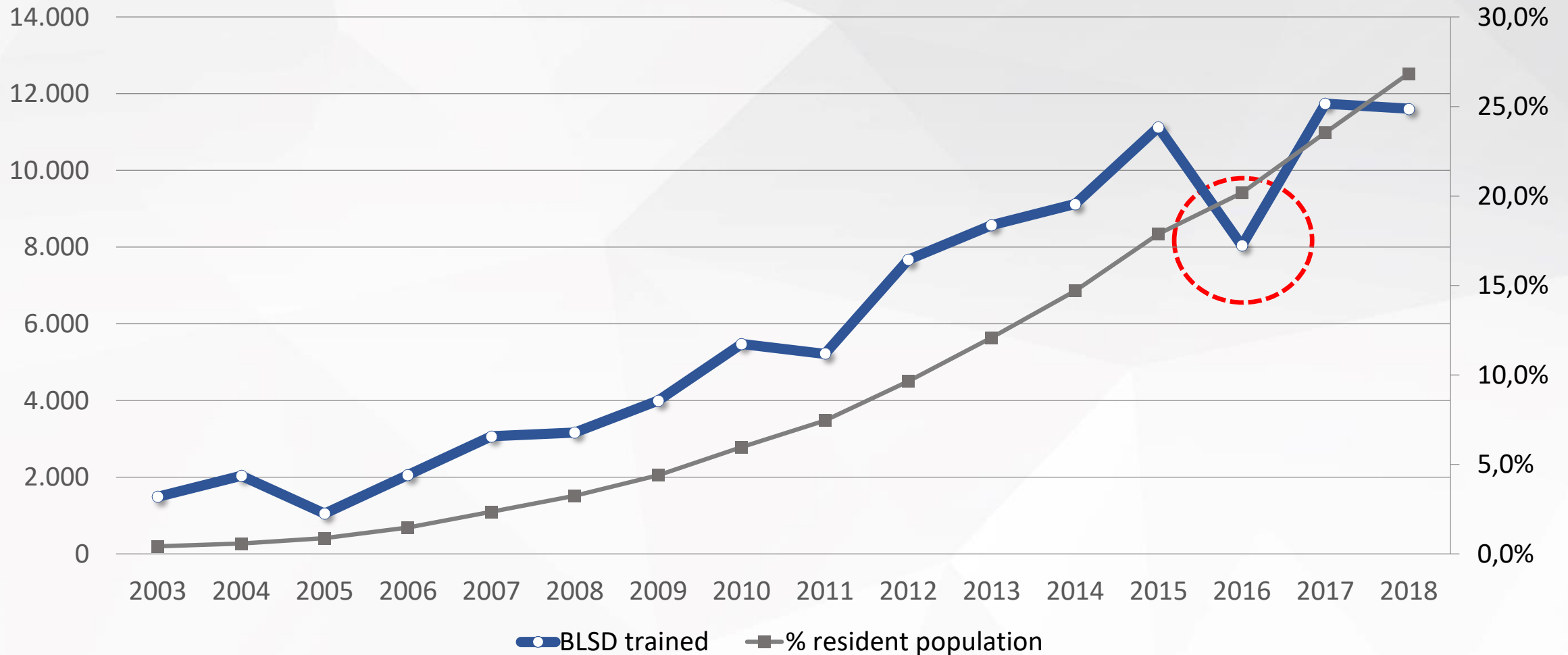
**3'000 – 3'500 first responders**

Allerta via applicazione smartphone *MOMENTUM*,  
in modalità broadcast

La risposta all'allerta smartphone (push) è basata  
sull'**aiuto spontaneo** e la **casualità** di trovarsi in  
prossimità dell'evento

(nessuno è di picchetto, nessuno è obbligato)

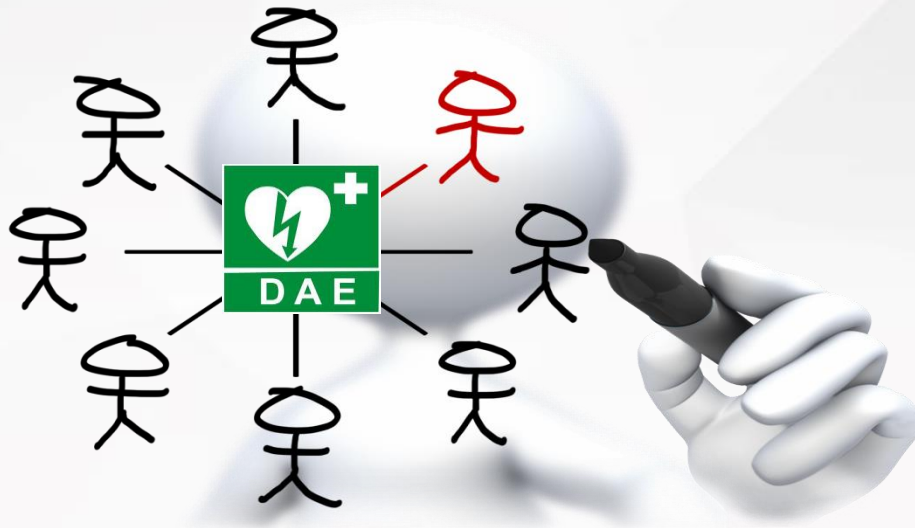
# Formazione BLSD alla comunità ticinese



Persone formate BLSD ad oggi 93'956



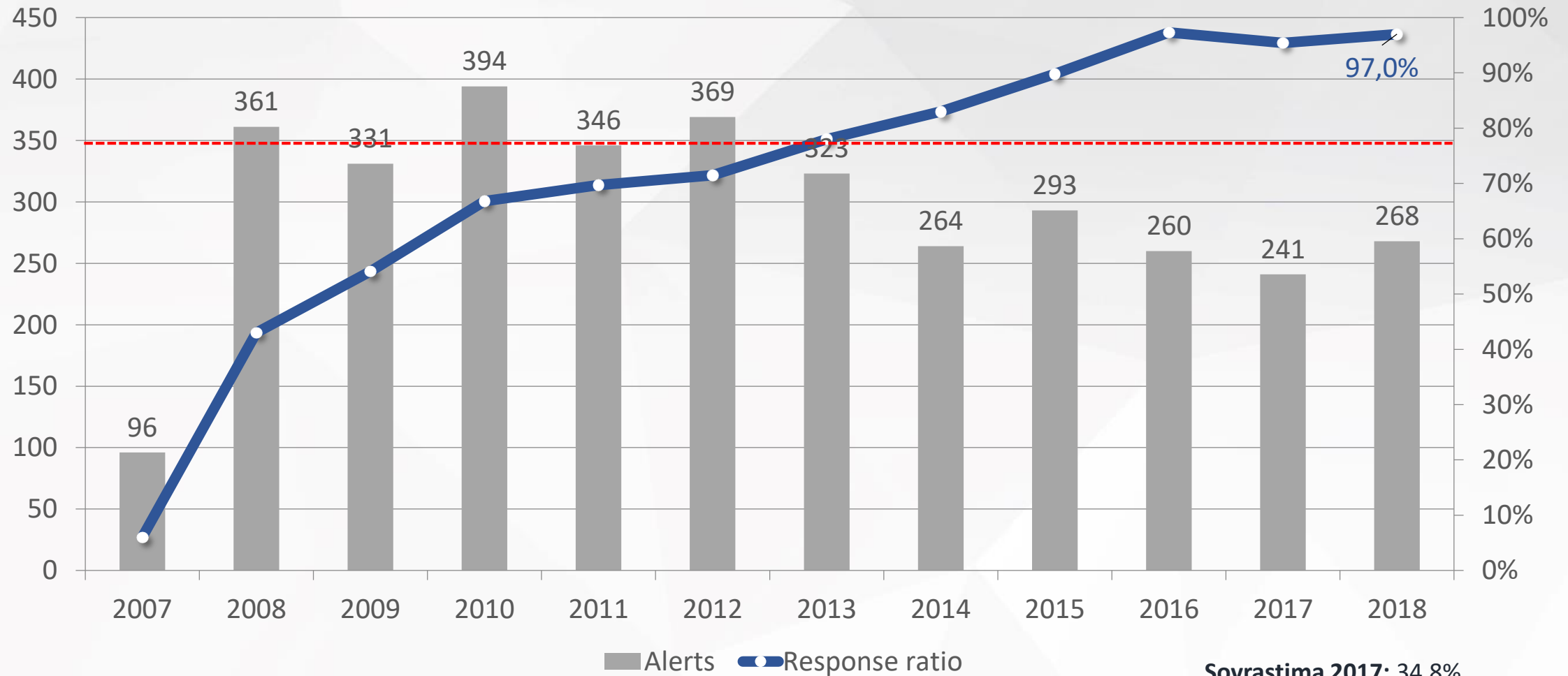
# Obiettivo: 1 PAED = 10 First Responder



## Efficienza PAD:

- Informazione / Sensibilizzazione
- Accessibilità ai corsi BLSD
- First Responder (1:10)

# Allarmi Momentum® e tassi di risposta FR



**Sovrastima 2017: 34.8%**



ELSEVIER



EUROPEAN  
RESUSCITATION  
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Clinical paper

Lay persons alerted by mobile application system initiate earlier cardio-pulmonary resuscitation: A comparison with SMS-based system notification<sup>☆</sup>



Maria Luce Caputo<sup>a,\*</sup>, Sandro Muschietti<sup>b</sup>, Roman Burkart<sup>c</sup>, Claudio Benvenuti<sup>c</sup>,  
Giulio Conte<sup>a</sup>, François Regoli<sup>a</sup>, Romano Mauri<sup>c</sup>, Catherine Klersy<sup>d</sup>, Tiziano Moccetti<sup>a</sup>,  
Angelo Auricchio<sup>a</sup>

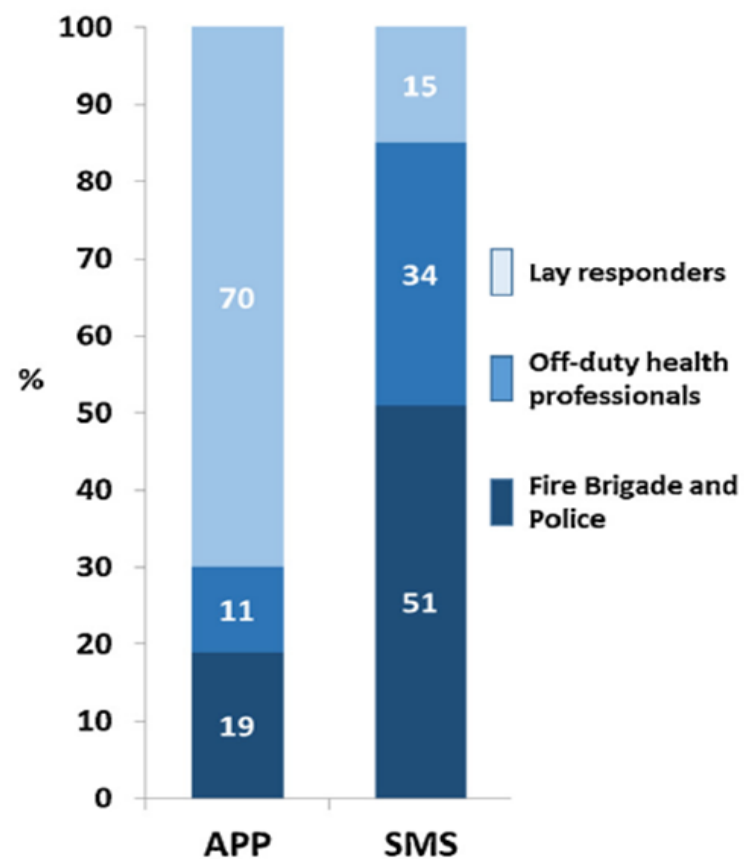
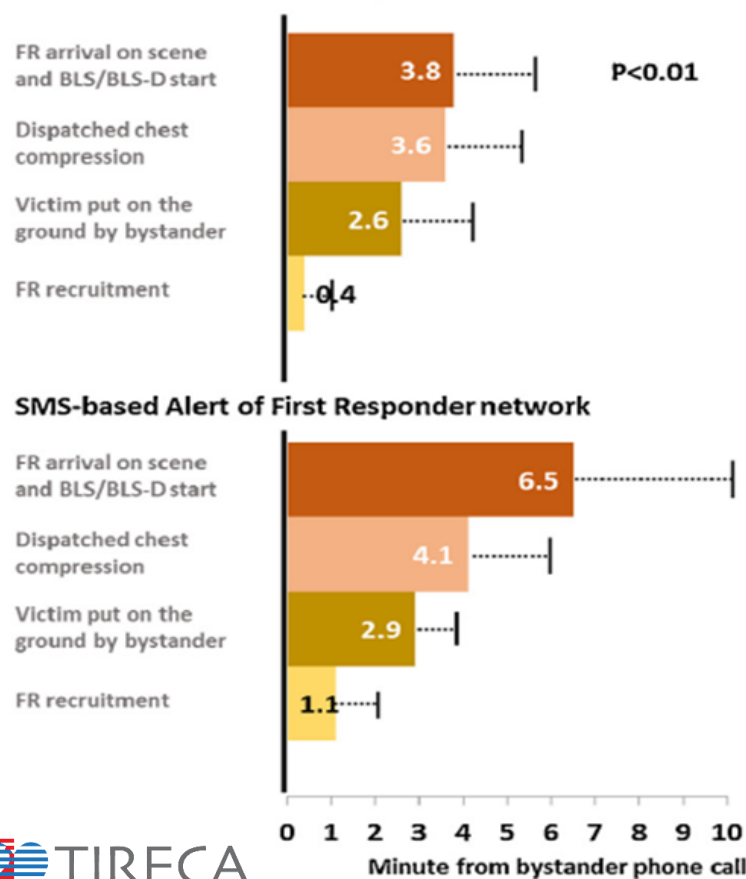
<sup>a</sup> Division of Cardiology, Fondazione Cardiocentro Ticino, Lugano, Switzerland

<sup>b</sup> Federazione Cantonale Ticinese Servizi Autoambulanza, Lugano, Switzerland

<sup>c</sup> Fondazione Ticino Cuore, Breganzona, Switzerland

<sup>d</sup> Service of Biometry and Clinical Epidemiology, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy

**APP-based Alert of First Responder network**





# First Responder: dotazione DAE



**280 AEDs + 423 PAEDs**



**Enti di primo intervento**

**Samaritani**

**Sanitari**

**Cittadino)**

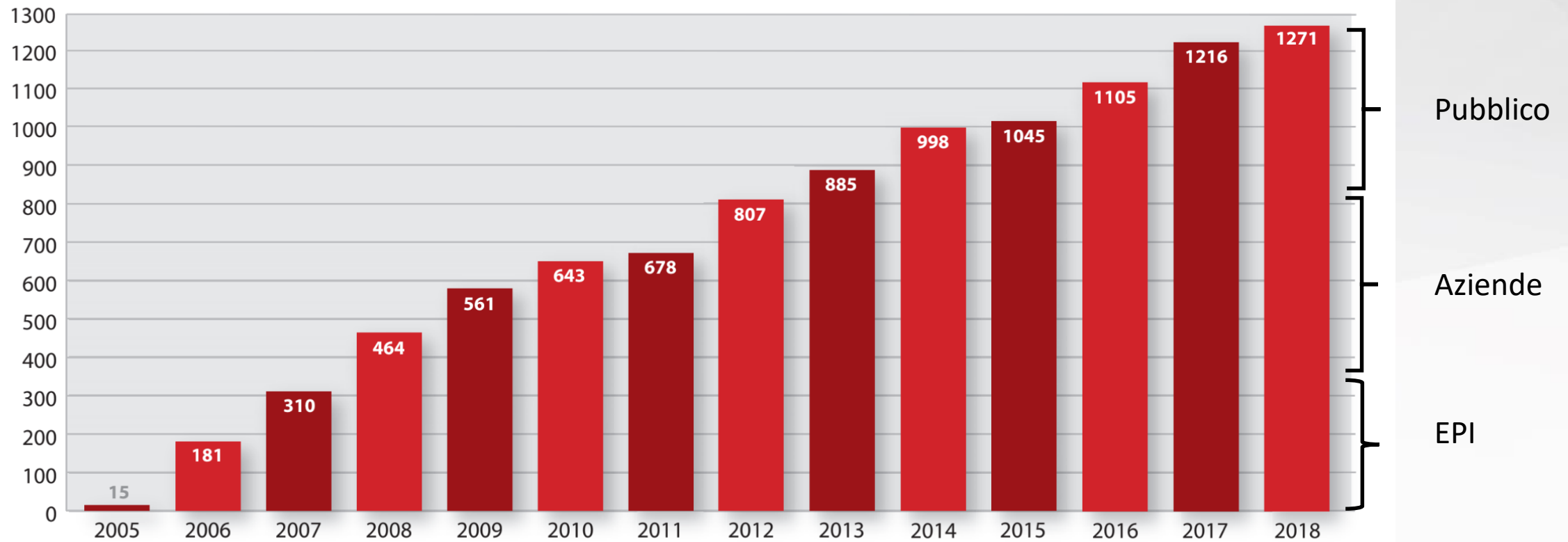
Il nostro obiettivo principale:

- **Permettere la defibrillazione entro 5 minuti dall'arresto cardiaco**

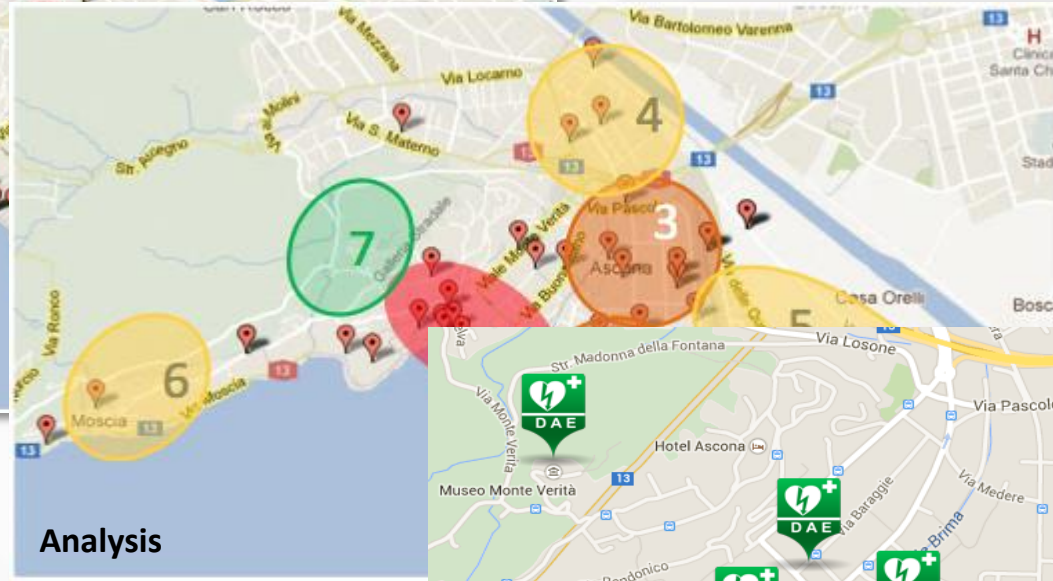
Debolezza

- **Soltanto poche persone sono equipaggiate di DAE**

# Canton Ticino: disponibilità DAE



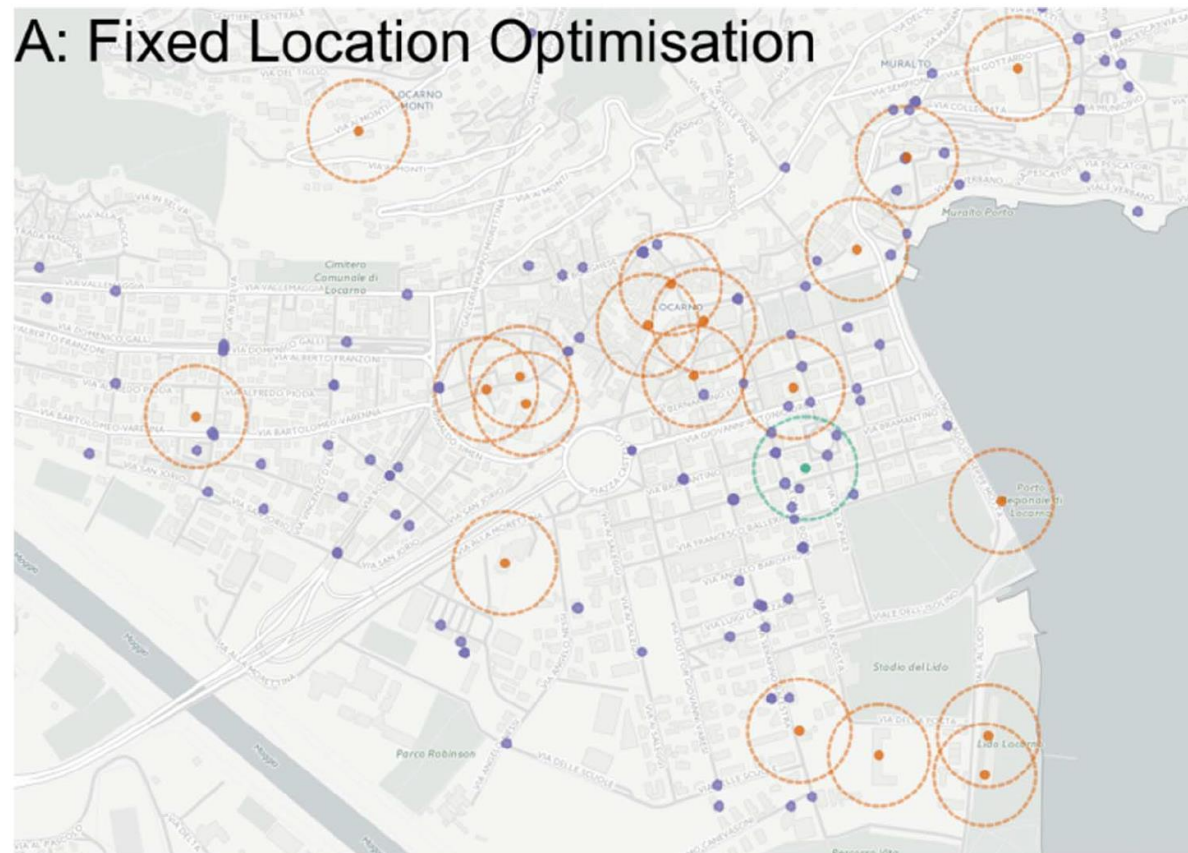
# Posizionamento strategico PDAE



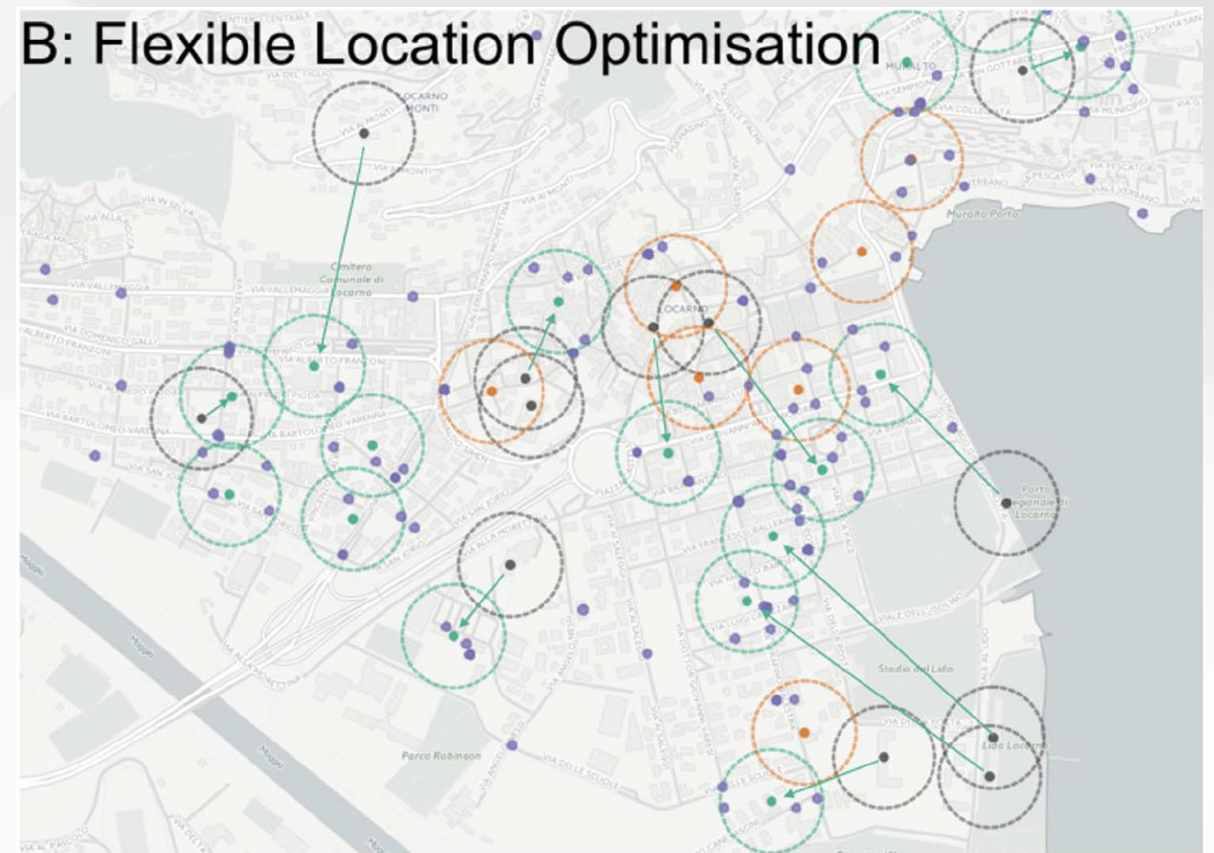
Efficacia PAED: 23% copertura reali OHCA



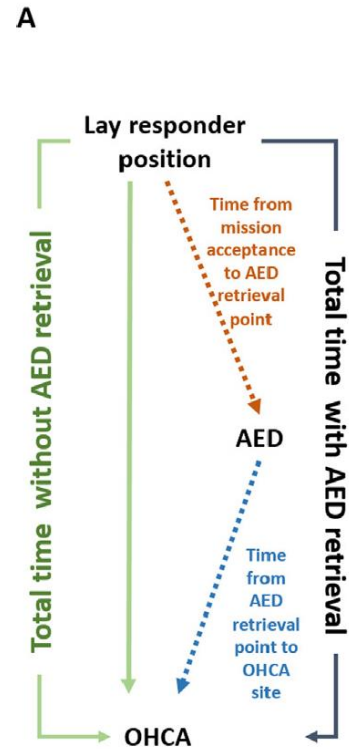
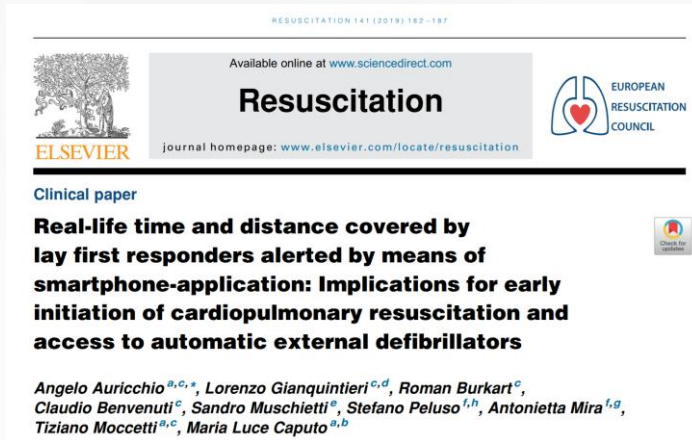
## A: Fixed Location Optimisation



## B: Flexible Location Optimisation



Riposizionamento die DAE secondo modello matematico – copertura OHCA 45%

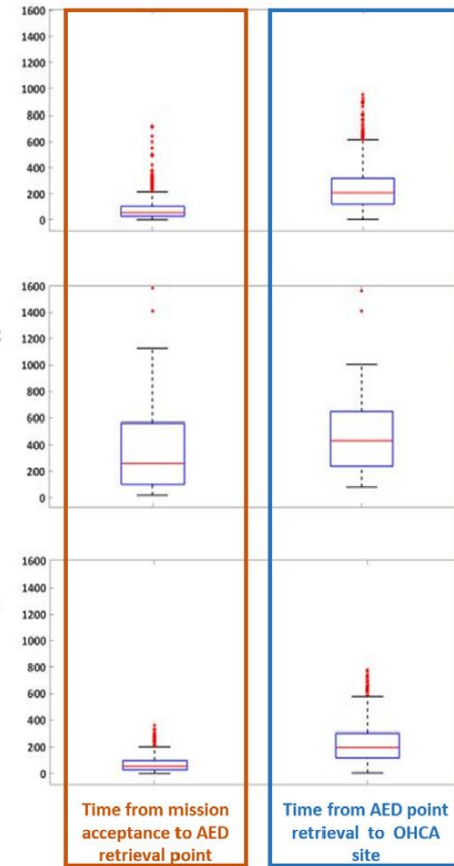


All lay first responders  
 (n=710)

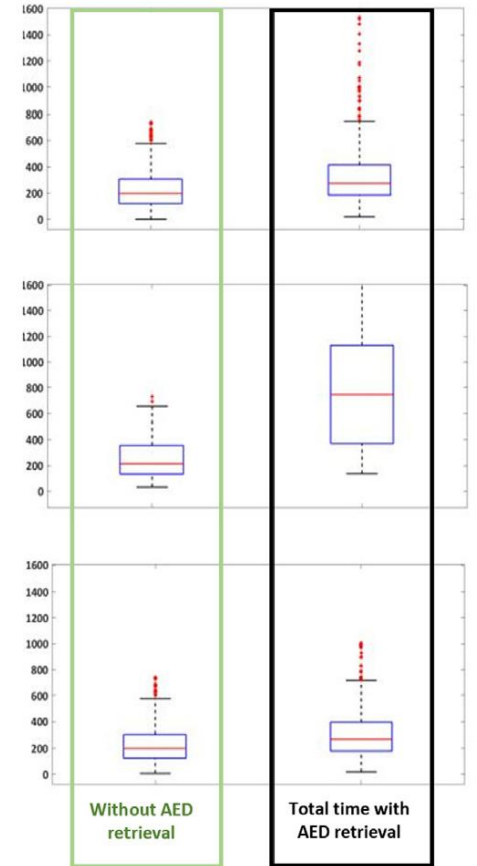
Lay first responders  
 with speed  $\leq 1.5$  m/sec  
 (n=34)

Lay first responders  
 with speed  $> 1.5$  m/sec  
 (n=676)

**B Intervention time (sec)**

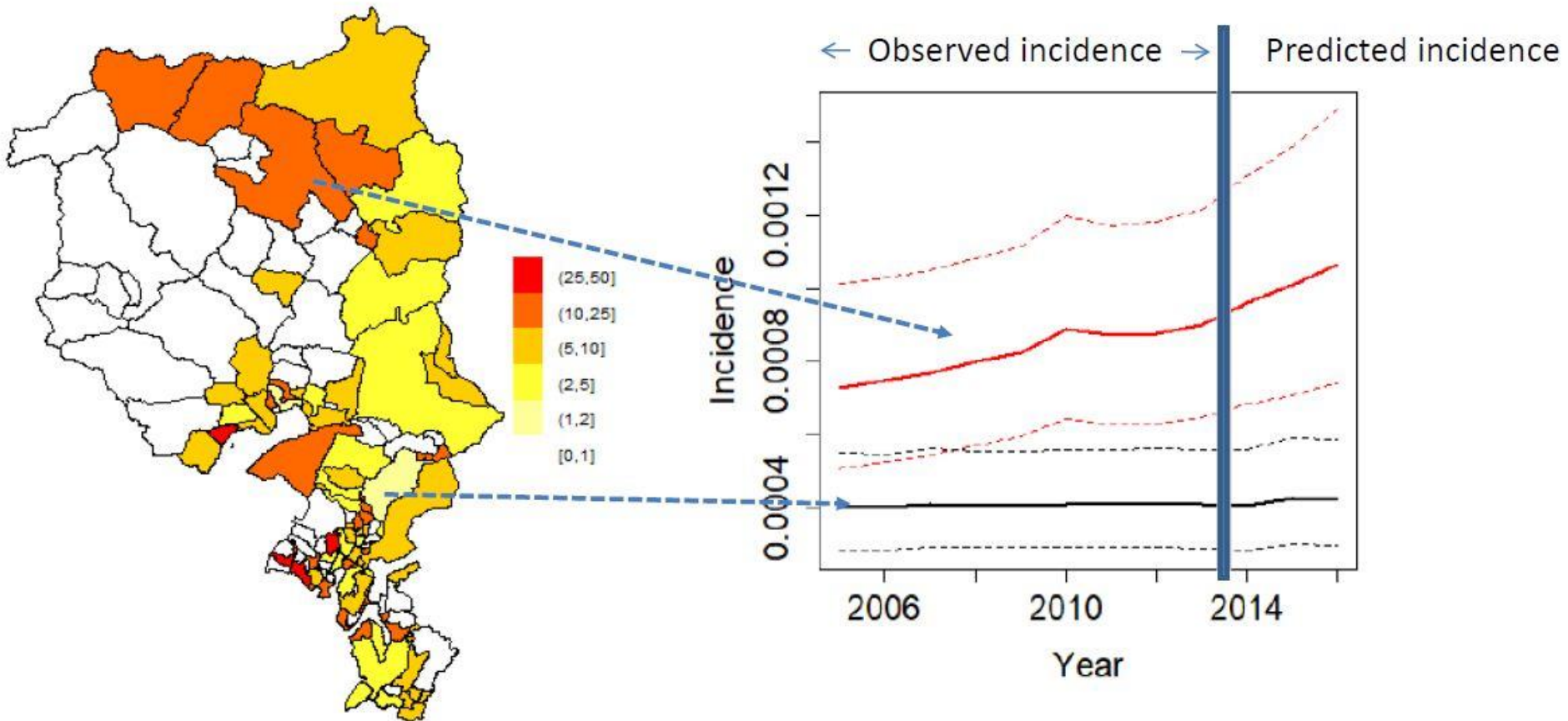


**C Intervention time (sec)**





## Change over time of OHCA incidence at municipality level





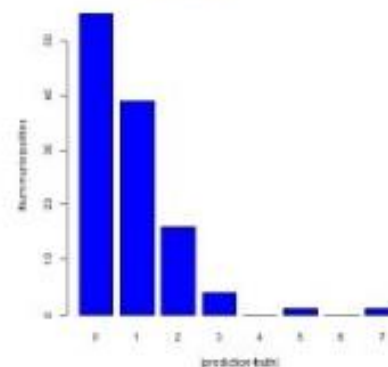
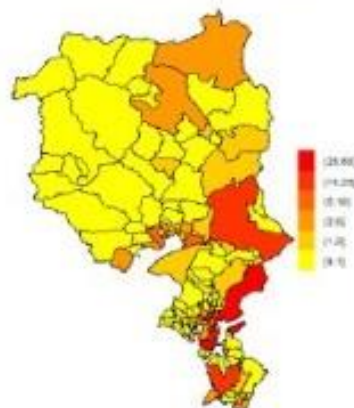
# Predicted, observed OHCA events (absolute number), and prediction error

Predicted OHCA

Observed OHCA

Prediction Error  
OHCA

2016



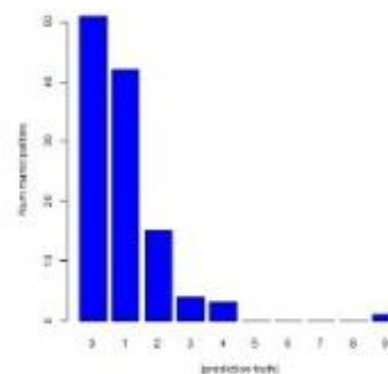
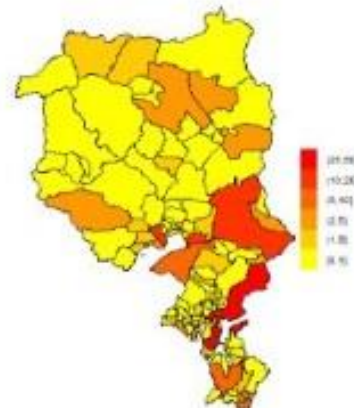
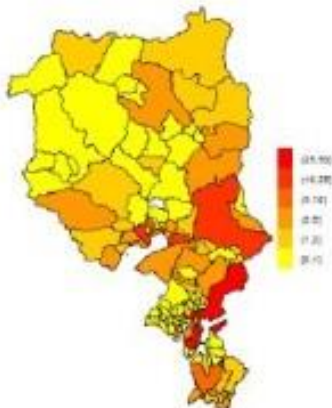
**OHCA is not a random event !**

- Population characteristics (mostly age and gender)

**The developed model reliably predicts absolute number of events**

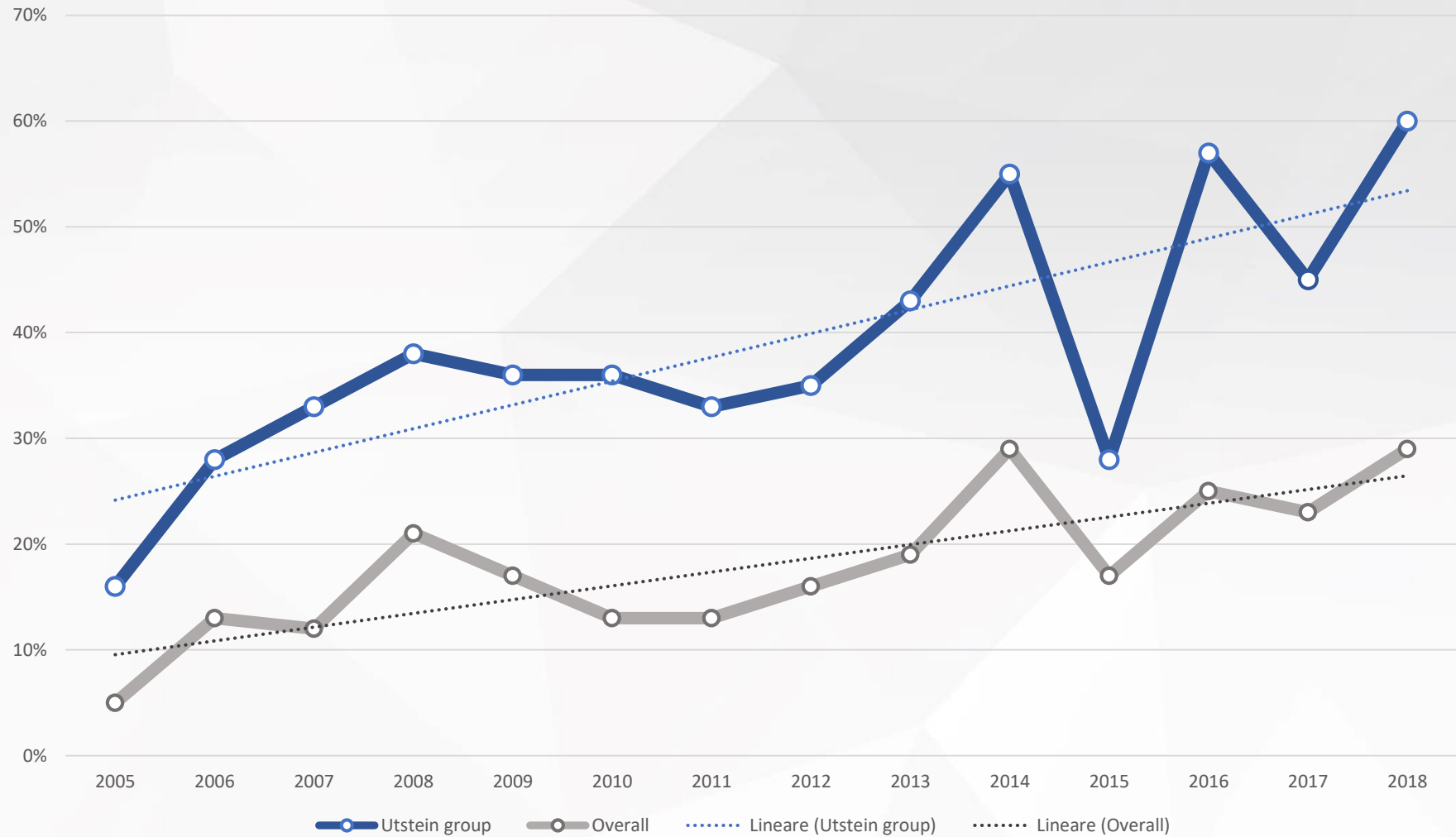
- OHCA forecast is possible
- Resource allocation planning

2017





## Outcome OHCA Cantone Ticino 2005-2018 - Vivo alla dimissione dall'ospedale





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Thank you



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