

Transformative Innovation in Swedish Healthcare

Jeanette Tuval

Karolinska University Hospital
Region Stockholm



Using drones in Swedish Healthcare

Magnus Kristiansson

Innovation Platform
Region Västra Götaland



Four projects in Region Västra Götaland using drone technology



2018

Initiated by a small start-up
Need assessment and testflight
with autonomous drones for
blood and lab samples.

2019

Research project
Safety and feasibility studie.
Delivering defibrillators i
Region Västra Götaland with
autonomous drones.

2020

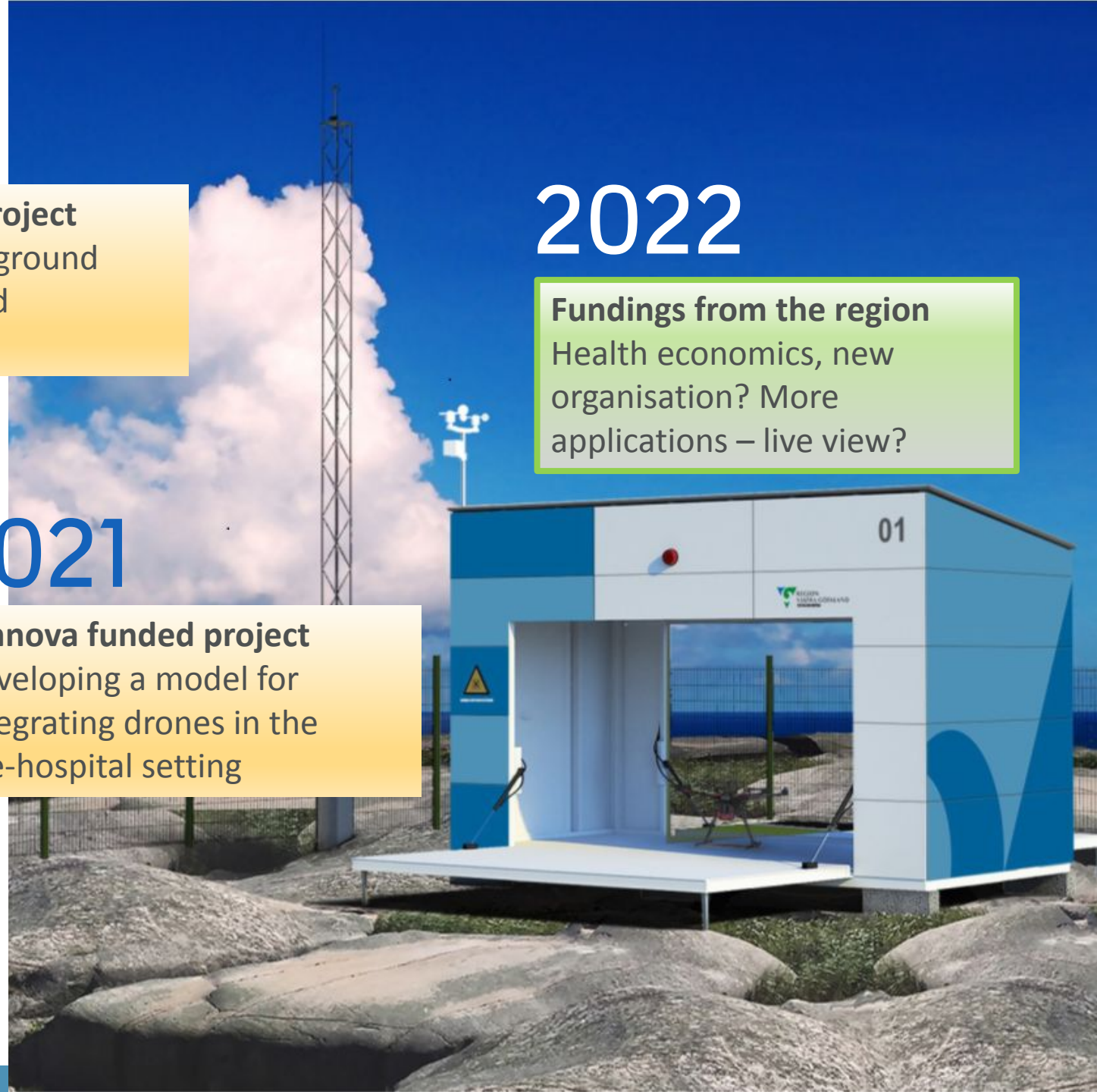
Vinnova funded project
Developing a new ground
station. Mobile and
autonomous.

2021

Vinnova funded project
Developing a model for
integrating drones in the
pre-hospital setting

2022

Fundings from the region
Health economics, new
organisation? More
applications – live view?



Innovation project

Developing a model for integrating drones in the prehospital setting

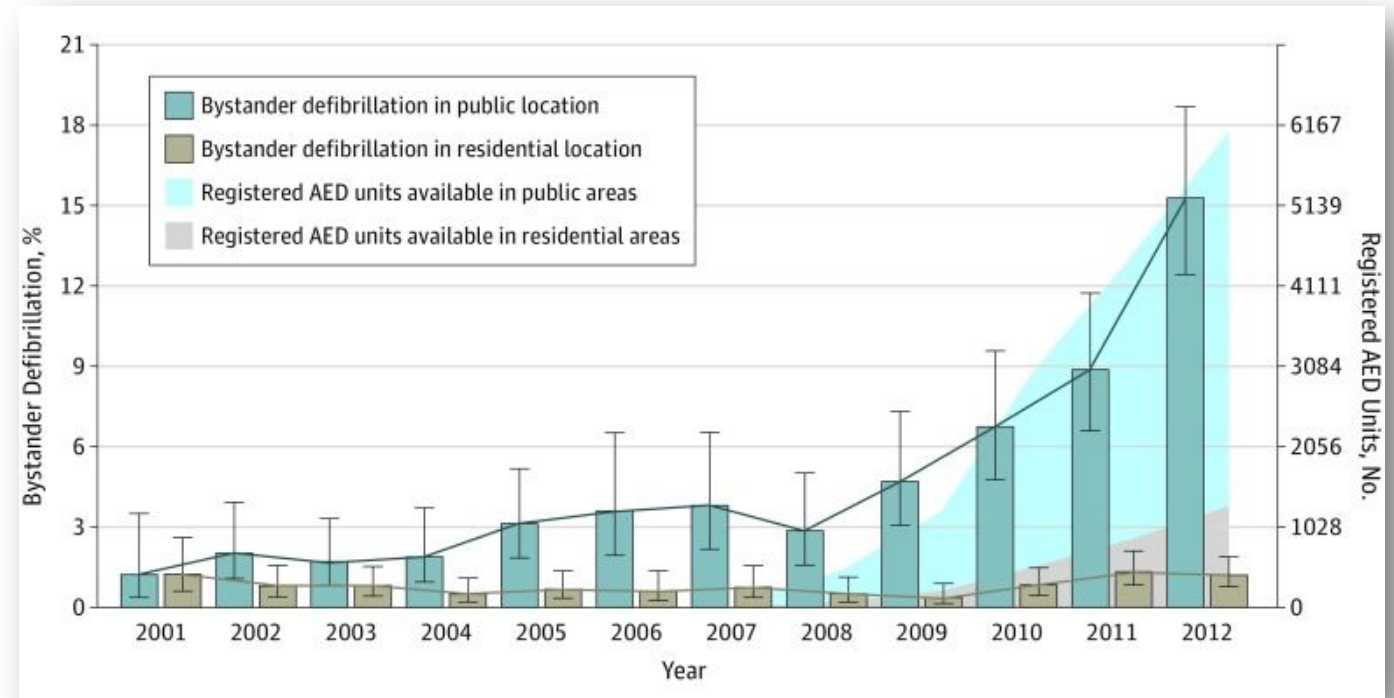
Funding: Regional Innovation Fund and Vinnova

Project members:

- **Everdrone:** technological and regulatory perspective
- **Center for Resuscitation science:** Research project – the perspective of the end-user.
- **Region Västra Götaland:** Innovation process – the perspective of the caregiver

Bystander Defibrillation for Out-of-Hospital Cardiac Arrest in Public vs Residential Locations

Hansen SM et al. JAMA Cardiol. 2017 May; 2(5): 507–514.





Summary

– what has happened so far?

- **5 drone systems installed, covering about 190 000 habitants**
- About **200 flights** since start
- Around **70 succesful deliveries** of defibrillators
- **12 km total flight distance** in daylight, darkness and dry weather
- Preliminary data
 - More than **50% ahead of ambulance**
 - Median time before- **about 4 min**
- Fully operational system, **seamlessly integrated in the alarm chain**
- **Globally unique**– no equivalent in the world today
- **Developed, tested and commisioned i Region Västra Götaland**



University Hospital of Umeå

Örebro University Hospital

Uppsala University Hospital

Karolinska University Hospital

Linköping University Hospital

Sahlgrenska University Hospital

Skåne University Hospital

Västerbotten without borders

Virginia Zazo, MD (video)

Hälsodigitalen

Region Västerbotten





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How to understand the benefits of new digital working methods

A systematic way to make smart decisions about new technology

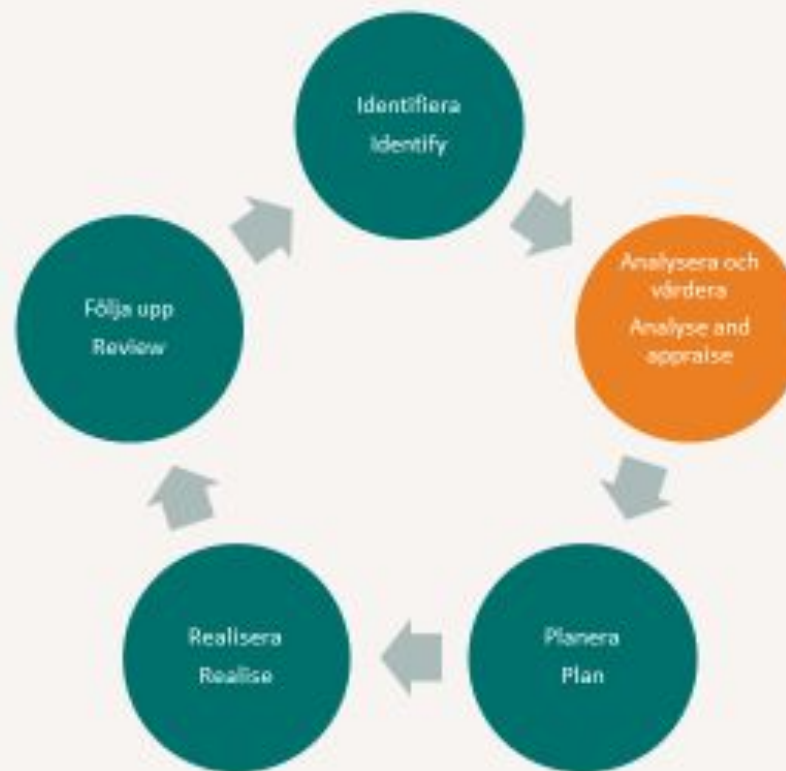
Åsa Hedin Karlsson
Strategic Digitalization
Region Östergötland





What is benefit analysis?

Increasing the likelihood that you achieve the potential benefit from your investments in digital working methods.





What are the advantages of benefit analysis?

- Increases our understanding of how we can utilize new technology and digital methods in a better way..
- Benefit analysis helps us:
 - prioritize the right initiative
 - make a common picture of what is required to complete the work
 - clarify what needs to be followed up.



What is benefit analysis?

- Make realistic and relevant path choices.
- See a more complete chain of effects (both desired and unwanted effects).
- Evaluate financial, redistribution or quality benefits.
- Follow up what benefits are achieved.



Example from one section in X-ray

Before

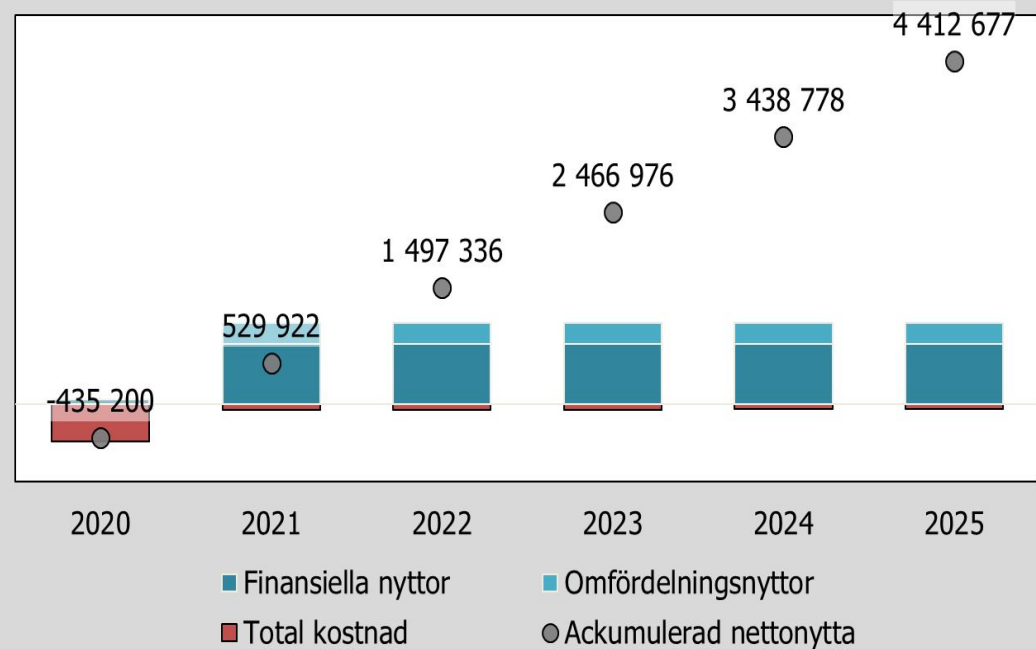
- manned reception
- written summons
- manual arrival registration

After

- unmanned reception
 - digital summons
 - digital arrival registration
- ✓ No costs for receptionist
 - ✓ No cost for room for reception aswell
 - ✓ No cost for envelope and postage

Cumulative
netbenefit

Benefits and costs – total benefit





How to succeed?



Benefit analysis is not enough to succeed, but it can help to clarify:

- **Common target**
- **Common path forward**
- **Help with perseverance**
- **What is required from management to supports the work**

Panel Discussion

Moderator:

- Jeanette Tuval, Karolinska University Hospital, Region Stockholm

Speakers and panel:

- Magnus Kristiansson, Innovation Platform, Region Västra Götaland
- Åsa Hedin Karlsson, Strategic Digitalization, Region Östergötland
- Lina Strand Backman, Innovation Platform, Region Västra Götaland



Thank you for listening!

Örjan Norberg (Region Västerbotten)
orjan.norberg@regionvasterbotten.se

Peter Stålberg (Region Uppsala)
peter.stalberg@akademiska.se

Anneli Eriksson (Region Örebro)
anneli.eriksson@regionorebrolan.se

Jeanette Tuval (Region Stockholm)
jeanette.tuval@regionstockholm.se

Magnus Stridsman (Region Östergötland)
magnus.stridsman@regionostergotland.se

Lina Strand Backman (Region Västra Götaland)
lina.strand.backman@vgregion.se

Per Ola Kimblad (Region Skåne)
perola.kimblad@skane.se

