



TrygFonden

REGION

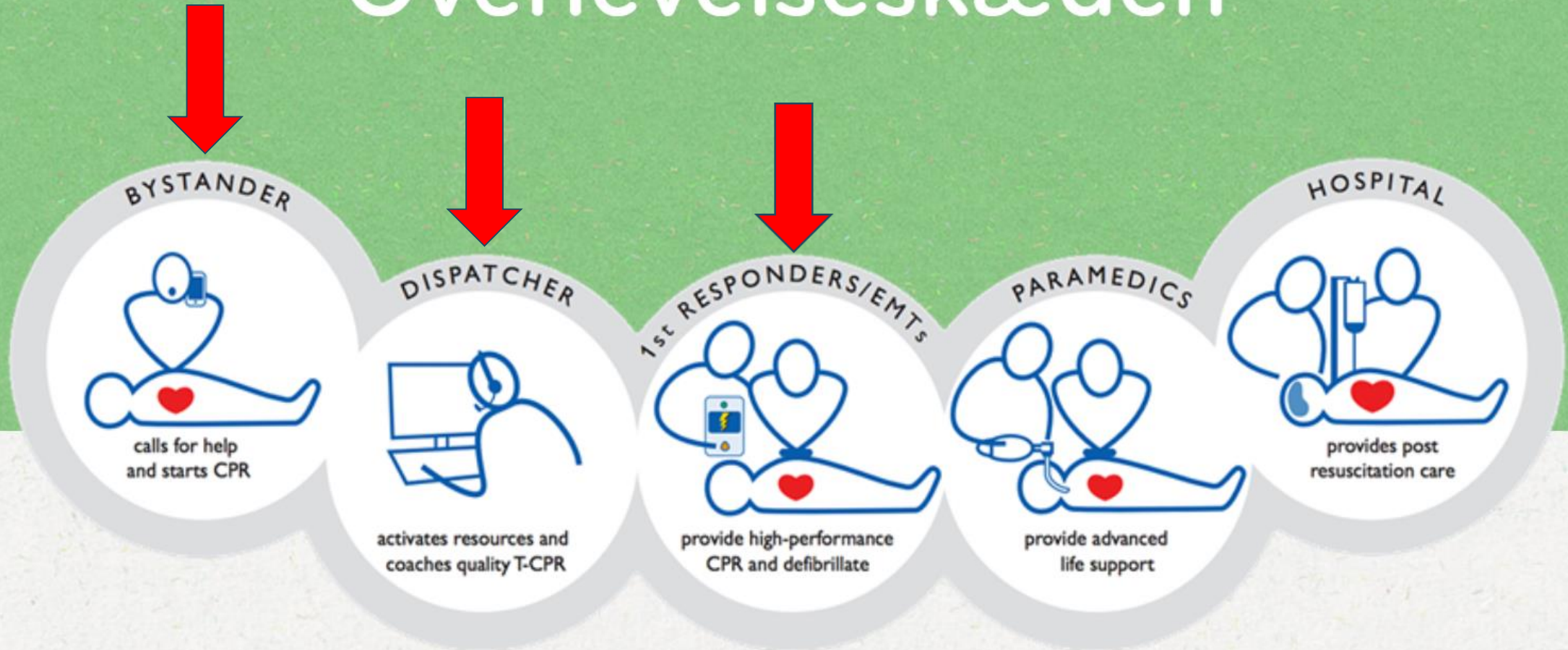
Livestreaming fra smartphones til den sundhedsfaglige ved 1-1-2

Gitte Linderoth



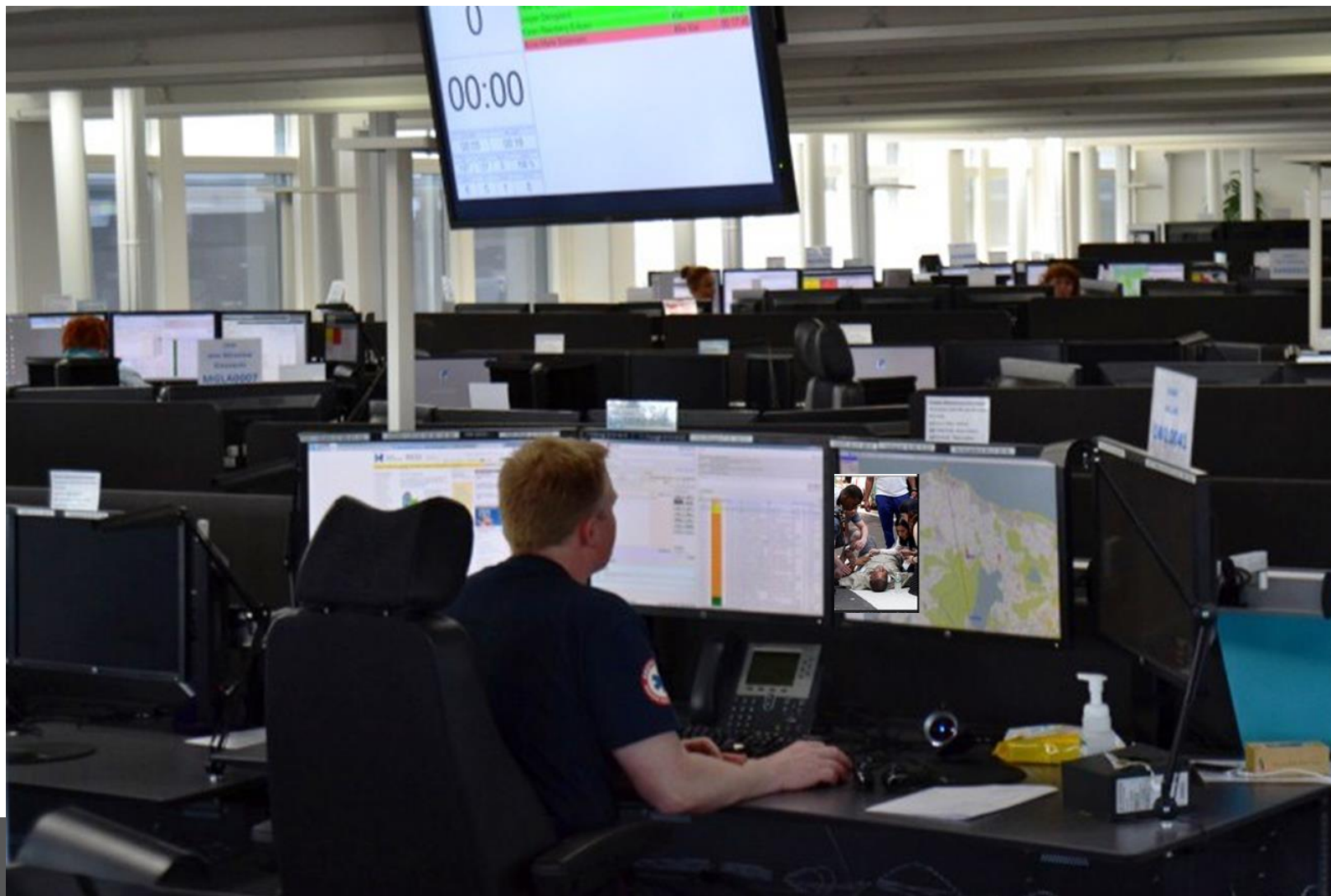


Overlevelseskæden





Første sundhedsfaglige “ved” patienten





Clinical Paper

Challenges in out-of-hospital cardiac arrest – A study combining closed-circuit television (CCTV) and medical emergency calls[✉]Gitte Linderoth^{a,*}, Peter Hallas^c, Freddy K. Lippert^a, Ida Wibrandt^a, Søren Lour Thea Palsgaard Møller^a, Doris Østergaard^b^a Emergency Medical Services Copenhagen, University of Copenhagen, Telegrafvej 5, DK-2750 Ballerup, Denmark^b Danish Institute for Medical Simulation, University of Copenhagen, Ringvej 75, DK-2730 Herlev, Denmark^c Juliane Marie Centre, Rigshospitalet, University of Copenhagen, Blegdamsvej 9, Copenhagen Ø, Denmark^d Department of Anaesthesia, Centre of Head and Orthopaedics, University of Copenhagen, Blegdamsvej 9, Copenhagen Ø, Denmark

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ABSTRACT

The aim of this study was to explore challenges in recognition and in diac arrest (OHCA) by using closed-circuit television (CCTV) recordings from emergency medical calls.

Method: All OHCA captured by CCTV in the Capital Region of Denmark included. Using a qualitative approach based on thematic analysis, victim's collapse to the arrival of the ambulance.

Results: Based on the 21 CCTV recordings collected, the main challenge awareness, communication and attitude/approach. Situation awareness medical dispatchers (dispatcher) differed. CCTV showed that I often physically closer to the victim and initiated cardiopulmonary tion from the dispatcher had to pass through the caller to the other by or left, leaving the resuscitation to only a few. In addition, we observed tasks that could have been performed more effectively by other bystanders, for example, receiving the

ORIGINAL RESEARCH

Open Access



Medical dispatchers' perception of visual information in real out-of-hospital cardiac arrest: a qualitative interview study

Gitte Linderoth^{1,2*}, Thea Palsgaard Møller¹, Fredrik Folke¹, Freddy K. Lippert¹ and Doris Østergaard³**Background**

Dispatcher-assisted cardiopulmonary resuscitation (DA-CPR) is highlighted in 2015 resuscitation guidelines [1] because instructions improve bystander CPR rates [2–4], reduce the time to CPR [4–6], increase the number of chest compressions delivered, and might improve patient outcomes following OHCA [7, 8]. However, DA-CPR can be difficult because the dispatchers are placed in a complex, nonvisual environment, guiding bystanders who are in a stressful situation and often have limited basic life support experience. Simulation studies have shown that video transmitted from bystanders' smartphones can be a valuable tool for dispatchers to facilitate DA-CPR [9] and that it can improve the lay rescuers' confidence [10].

Medical dispatchers have also indicated that it could be a benefit to receive visual information based on simulations of OHCA scenarios [11]. This is in agreement with our previous study in which we used closed-circuit television (CCTV) recordings from OHCA, which indicated that the dispatchers' situation awareness was challenged by not being able to see the victim as well as the bystanders' reactions, though the medical dispatchers were not interviewed specifically about their perception

and dispatchers' reflections about the added value of visual information in real out-of-hospital cardiac arrest (OHCA) situations investigated with CCTV recordings.

Method**Setting**

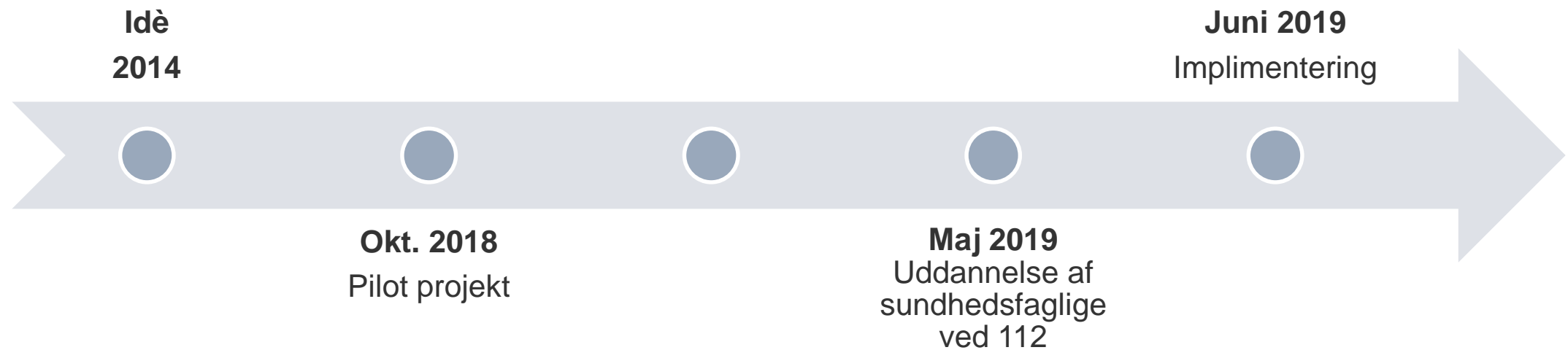
The Emergency Medical Dispatch Centre (EMDC), Copenhagen, Denmark serves 1.8 million inhabitants. All 112 emergency calls are initially handled by a call centre that identifies the location and then forwards all medical calls to an EMDC. An emergency medical dispatcher answers the call and determines the appropriate response, while a technical dispatcher handles the logistics of simultaneously dispatching ambulances. The medical dispatchers are specially trained registered nurses and paramedics. The decision-making process is supported by a standardised national criteria-based dispatch tool (Danish Index for Emergency Care) [13]. In case of OHCA, the medical dispatchers guide the bystanders to perform CPR until arrival of the ambulance and to localise and use the nearest automated external defibrillator (AED).

Study design

The study was a qualitative study designed as an ex-



Tidslinje for implementering af video 1-1-2

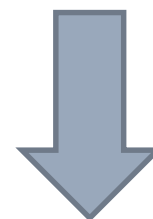




1-1-2 opkald



Sundhedsfaglig sender SMS med link



**Regionhovedstadens
Akut beredskabet**

1-1-2 opkald



Videotransmission
(krypteret)



Indringer accepterer deling af video og
kamera åbner automatisk

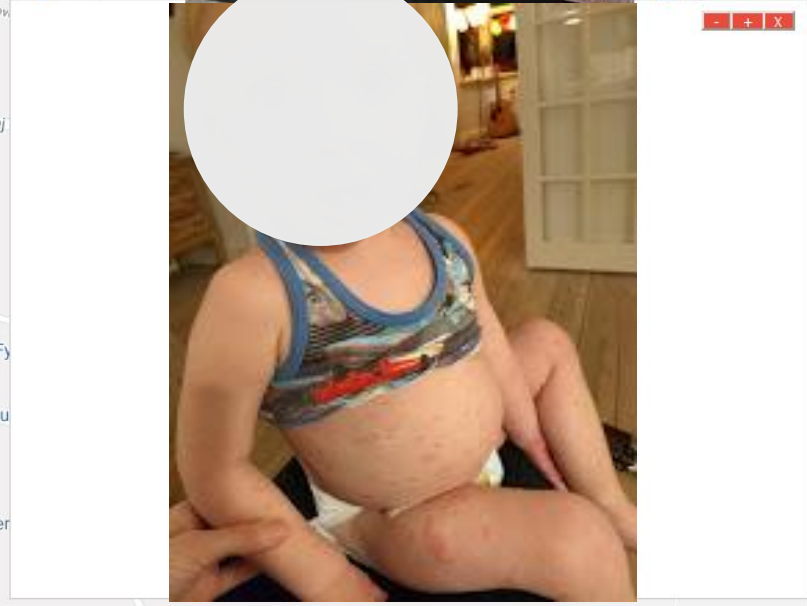
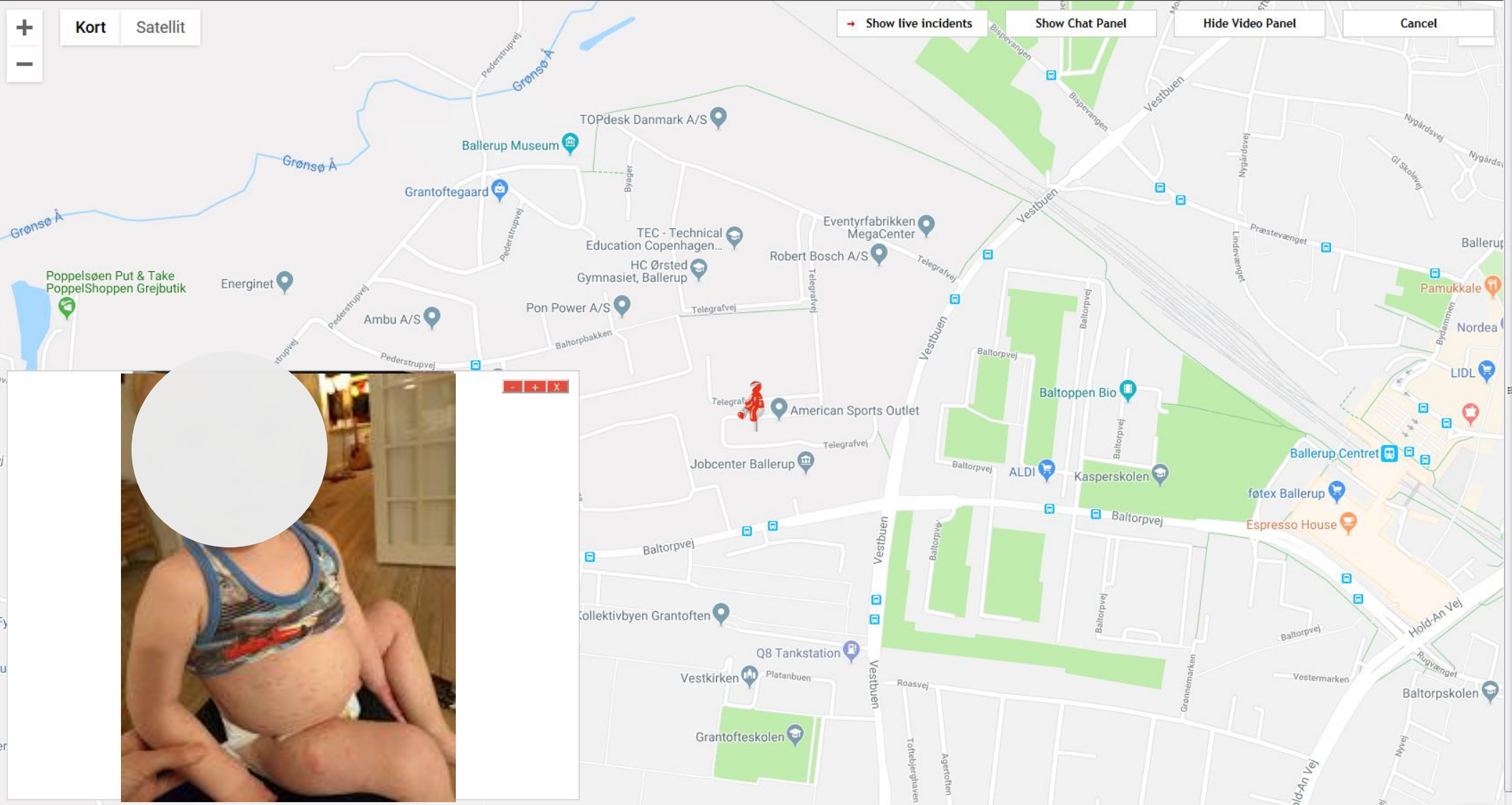


Data er gemt på RegionH
server



Map controls: + (Zoom in), - (Zoom out), Kort (Map), Satellit (Satellite)

Map overlays: Show live incidents, Show Chat Panel, Hide Video Panel, Cancel



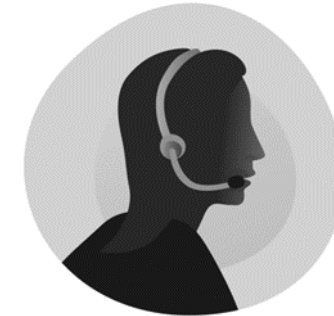


Formål

Kan livestreaming ved 112-opkald forbedre

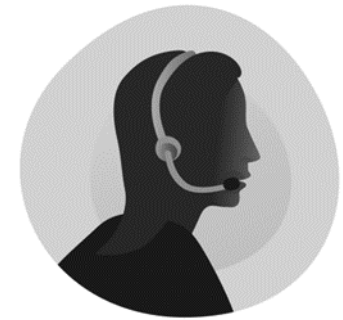
- 1) den sundhedsfagliges generelle vurdering af patienten?
- 2) kvaliteten af hjertelungeredning?

Hvad er indringers oplevelse med brugen?



Data

- Sundhedsfaglige udfylder et spørgeskema efter hver livestreaming af video.

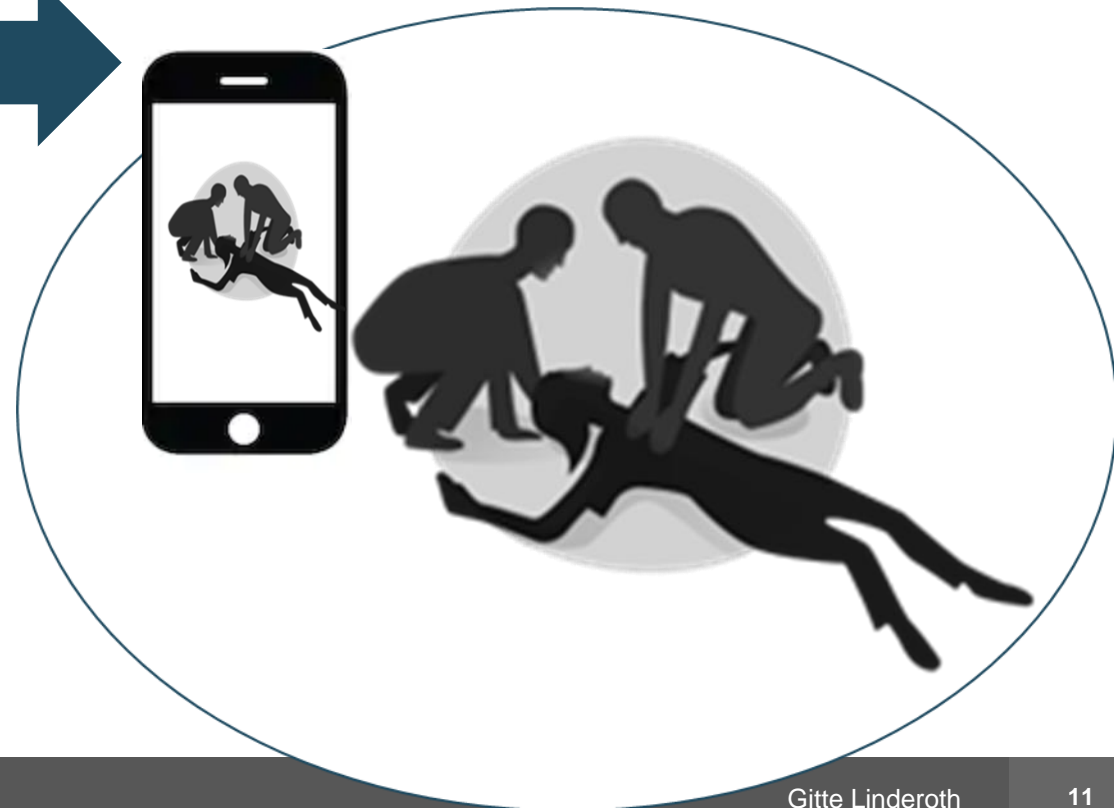




HLR kvalitet uden livestreaming



HLR kvalitet med livestreaming



Videotransmission 1-1-2

Dato 21 maj
Version 2

Link til GoodSAM, instruks og spørgeskemaer ligger i mappen: "Video Projekt 112" i Akutte Links

Videoen sendes krypteret og materialet behandles fortroligt. Alt er underlagt tavshedspligt.
Ved spørgsmål - Gitte Linderoth
(gitte.linderoth@regionh.dk mobil 40141294)

Bevidstløs med **Unormal** Vejtrækning/ Hjertestop

Bevidstløs med **Normal** vejtrækning

Disponer amb og informer indringer

Vejled i hjertelungeredning og hjertestarter

Læg patienten på siden med hovedet bøjet tilbage.
Check, om han fortsætter med at trække vejret normalt.
Hvis personen holder op med at trække vejret eller begynder at gurgle eller gispe, må du sige det til mig. Læg ikke på, før jeg siger, du skal.

Mere end to personer tilstede?

Ja

Nej

Sig: "Jeg vil supplere opkaldet med video for bedre at kunne hjælpe. Har du en SmartPhone?"

Ja

Nej

"Kan du sætte mobilen på medhør/højtaler?"

Ja

Nej

Forsæt vejledningen uden video

Sig: "Du vil modtage en SMS med et link. Du skal aktivere linket".

Sig: "Du skal give os adgang til placering og kamera"

Få indringer til at sige højt: "Jeg vil nu sende video til 1-1-2, så de bedre kan hjælpe indtil ambulancen kommer"

Sig: "Jeg sender et spørgeskema angående brug af video til dig via SMS. Du kan udfylde det ved lejlighed".

SÆT EN MARKERING I CAD : 112 VIDEO
OPKALD og udfyld spørgeskema

Efter start af video:
Sig: "Stil dig overfor personen der giver førstehjælp (på den anden side af patienten)".

- 1) Få billede så du kan se hånd-placering
- 2) Få billede fra ca. 1 m afstand og bedøm hastighed og trykdybde (recoil)
- 3) Få billede så du kan se indblæsningerne. (Fokuserer på at minimere pause i hjertemassagen, så hurtige indblæsninger, bagover bøjet hoved og løfter brystkassen sig). Generelt minimerer pauser i HLR og korrigerer til optimalt billede.
- 4) Vejled til korrekt brug af AED

Efter start af video:
Sig: "Stil dig ca. 1 m fra patienten og vis mig patientens ansigt og brystkasse".

- 1) Bevidsthedsniveau: er patienten vågen, svarer patienten på tiltale, reagerer patienten på smertestimuli, reagerer ikke på nogen former for stimuli (AVPU).
- 2) Vejtrækning: Normal? Fri luftvej? (obstrueret, Inspiratorisk eller ekspiratorisk stridor), Respirationsfrekvens (under 10, 10-30 eller over 30). Forlænget eksspiration, pivende vejtrækning, andet? Ansigt farve (hvid, blå, normal). Hvis vejtrækningen ikke kan vurderes i sideleje, lægges pt. på ryggen.

iPhone: 5S eller nyere (ikke 5C)
Alle andre smartphones ca. købt fra 2013 og opdateret de sidste to år

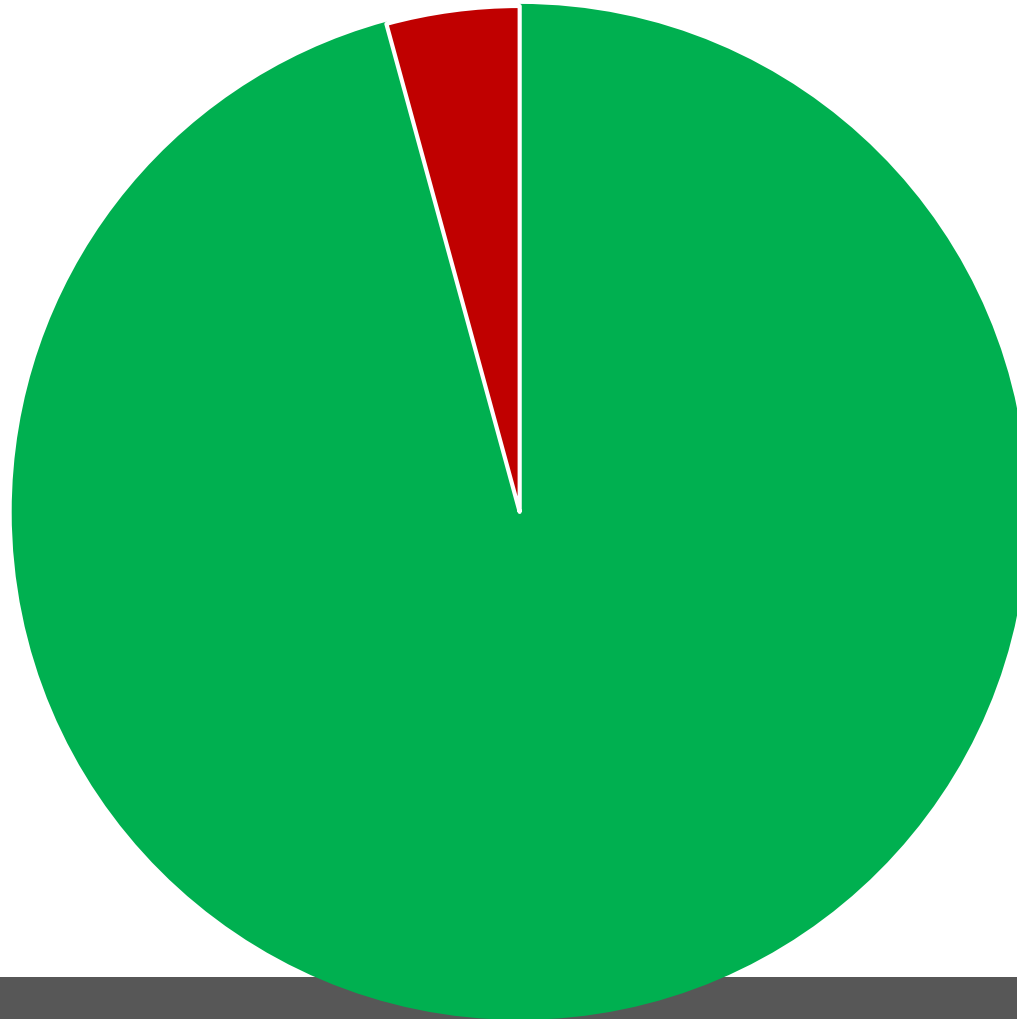
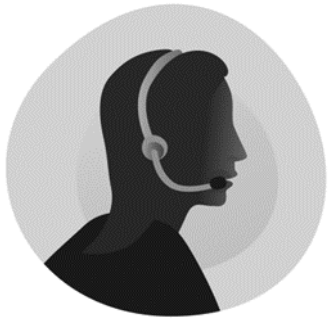


Livestreaming

- 659 cases



Livestreaming useful?



■ Yes ■ No



Ændring i den sundhedsfagliges situation awareness



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74 mere syge
(11,2%)



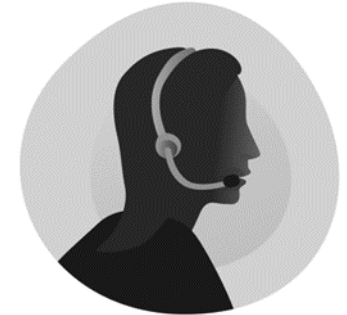
50 opgradering
(7,6%)



146 mindre syge
(35,5%)



127 nedgradering
(19,3%)





”Uerkendt ” sygdom/traume?

- Ja: 8,4%
- Nej: 67%
- Ved ikke: 24,6%



Ændring i førstehjælp til patienten?

- Ja: 31%
- Nej: 62 %
- Ved ikke: 7%

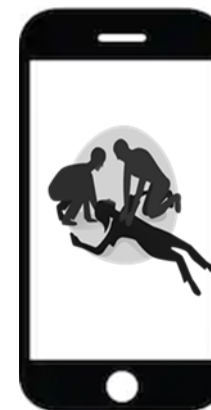


Hjertestop

- 58 cases
- 12 ikke hjertestop.
- 2 Mors (sikre dødstegn)
- Ialt 65 personer der yder HLR



Håndplacering N=30

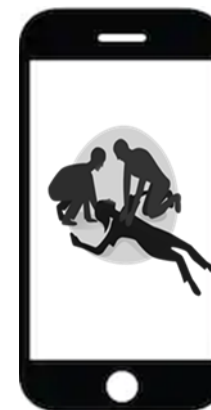


	Før video-vejledning	Efter video-vejledning
Ukorrekt	12	2
Korrekt	16	24
?	2	3
<i>(Bedring men ikke korrekt)</i>		<i>(1)</i>

**Bedring hos 11 ud af 12 bystander
Ca. 83%**



Hastighed af kompressioner N=30

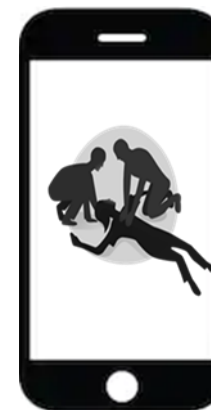


	Før video-vejledning	Efter video-vejledning
Under 100	10	2
Korrekt 100-120	16	25
Over 120	3	2
?	1	1
<i>(Bedring men ikke korrekt)</i>		<i>(1)</i>

**Bedring hos 10 ud af 13 bystander
Ca. 76%**



Trykdybde N=28



	Før video-vejledning	Efter video-vejledning
Dårlig dybde	19	10
Ok dybde	9	12
<i>(Bedring men ikke korrekt)</i>		<i>(6)</i>

Bedring hos 15 ud af 19 bystander
Ca. 78%



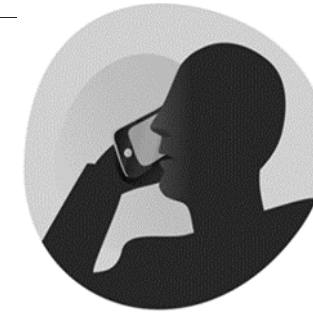
Andre parametere HLR

- Hands-off time blev reduceret hos 43%
- Vejledt i skift: 66%



Indringers opfattelse

- Interview 10 bystander
- *“betryggende af vide at det vi gør er det rigtige”*



Implementere mulighed for videoopkald?





En ny verden for de sundhedsfaglige med video

- Hvornår skal der suppleres med video?
- Hvor mange bystander tilstede?
- Hvordan skal sundhedsfaglige vejlede med brug af video?
- Hvem skal SVF vejlede?
- Samtale og video fra samme Smartphone? Medhør?



Konklusion

- Live video er brugbart for SVF til vurdering af patienten
- Live video kan formentlig højne kvaliteten af HLR
- Vi skal arbejde med hvordan SVF skal bruge og vejlede med live video



Tak

TrygFonden



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Trauma medics use 999 callers' mobile phone camera to help most seriously injured people in the capital

8th November 2019 | [News](#)

Trauma paramedics are using 999 callers' mobile phone cameras to get 'on-scene' at serious incidents such as stabbings and road traffic collisions in seconds rather than minutes.

In the first use of the technology in the capital for serious trauma incidents, paramedics in the London Ambulance Service control room ask 999 callers' to remotely access their smartphone cameras to quickly understand a patient's injuries and help decide if resources like London's Air Ambulance are needed.

If a caller gives permission, they are sent a text asking them to click and accept a link which then sends a stream from their camera phone to the medics in the control room. The platform also has technology medics can use to measure a pulse from the video stream and also can instantly locate the caller.



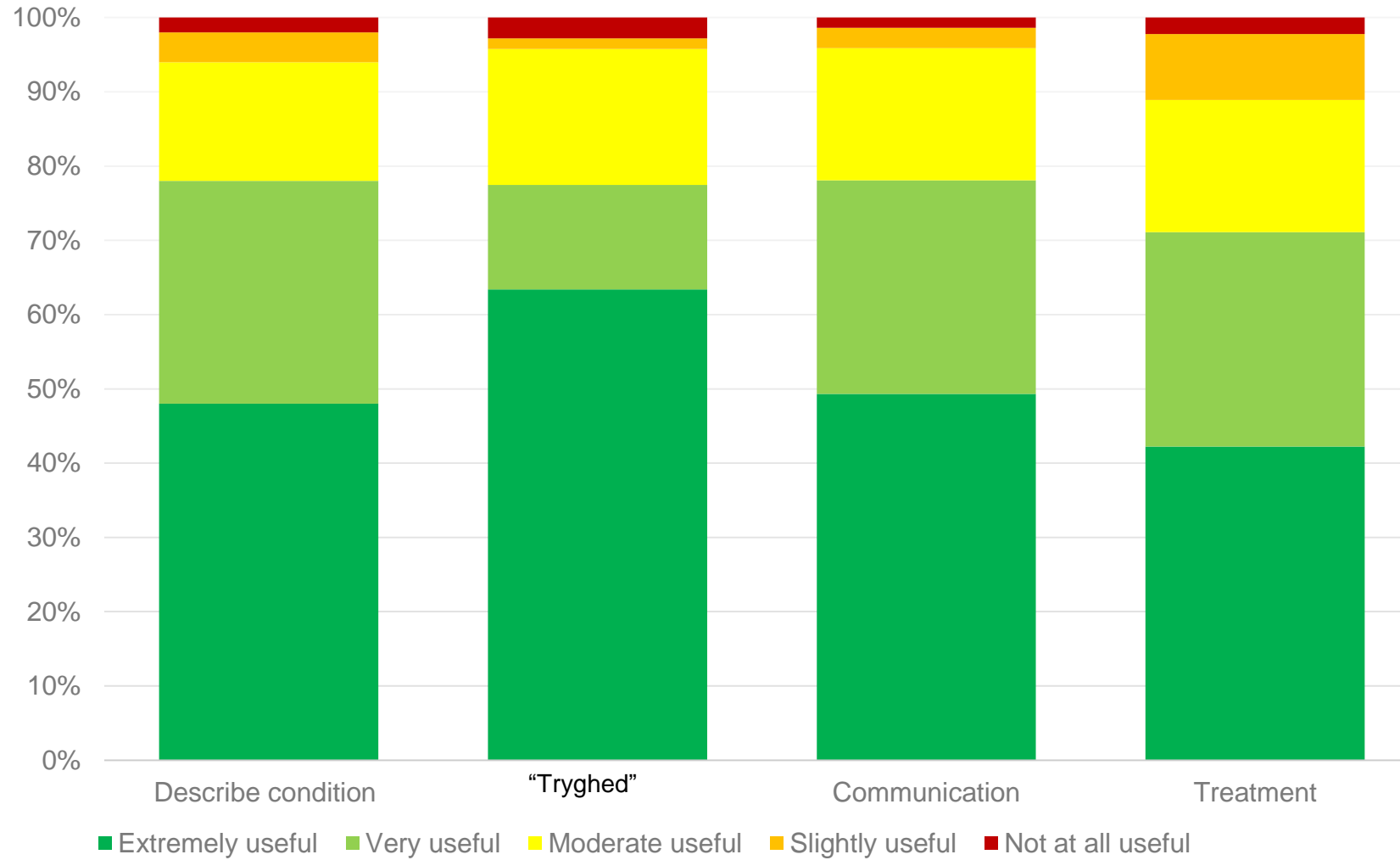


Indringers oplevelse generelt med video til 1-1-2

- N=106

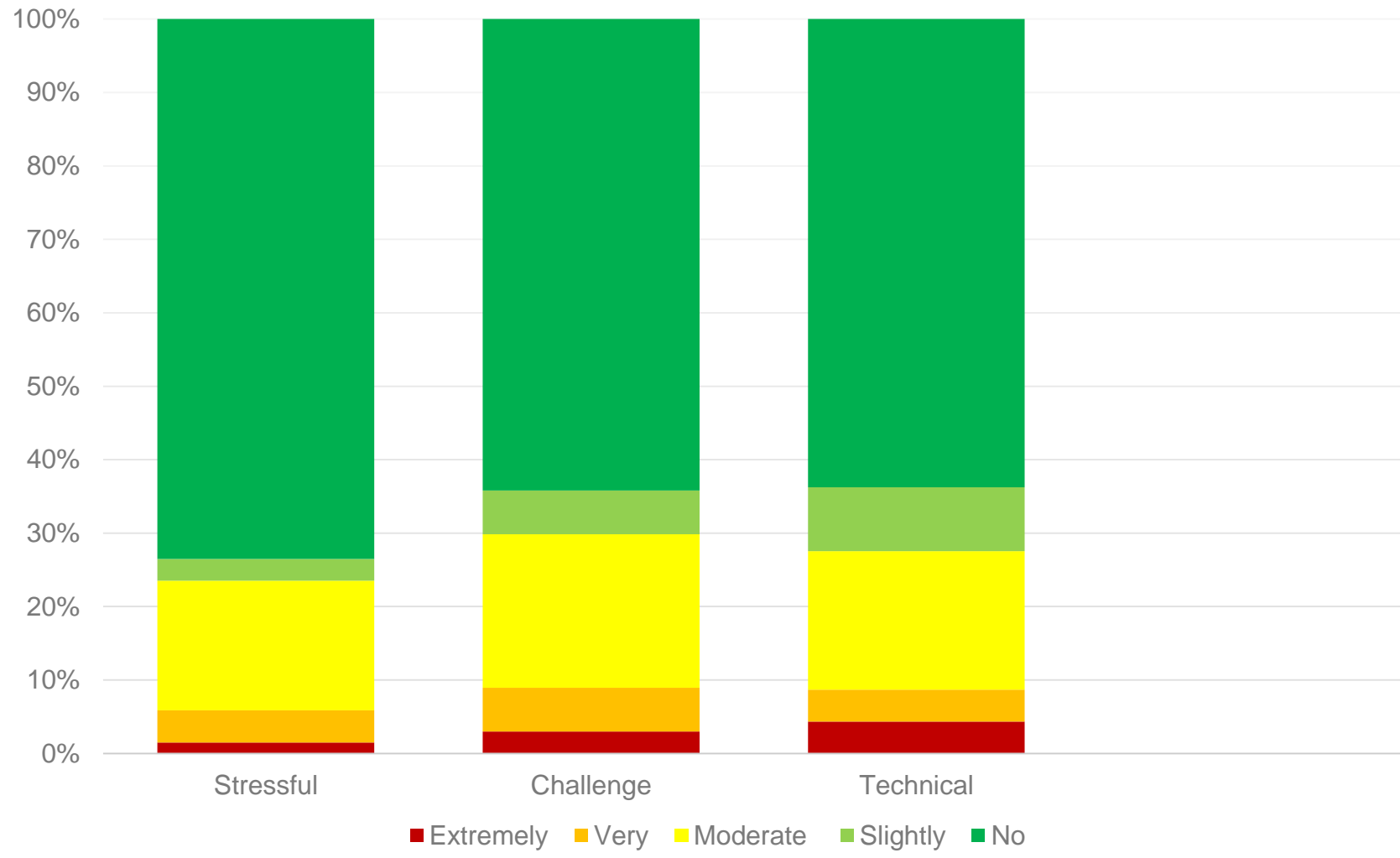


CALLER





CALLER



<https://www.goodsamapp.org/monitoring>