Insights

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THE DEBATE:
Should Pharma Engage In eHealth

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Sharing information with the patient means humanising medicine. It's a wonderful thing to do for a GP. Usually we are seen as gatekeepers, but when we share information with our patients, we are in fact 'gate openers'.

Le Vallikivi, board member of the Estonian Family Doctors Association

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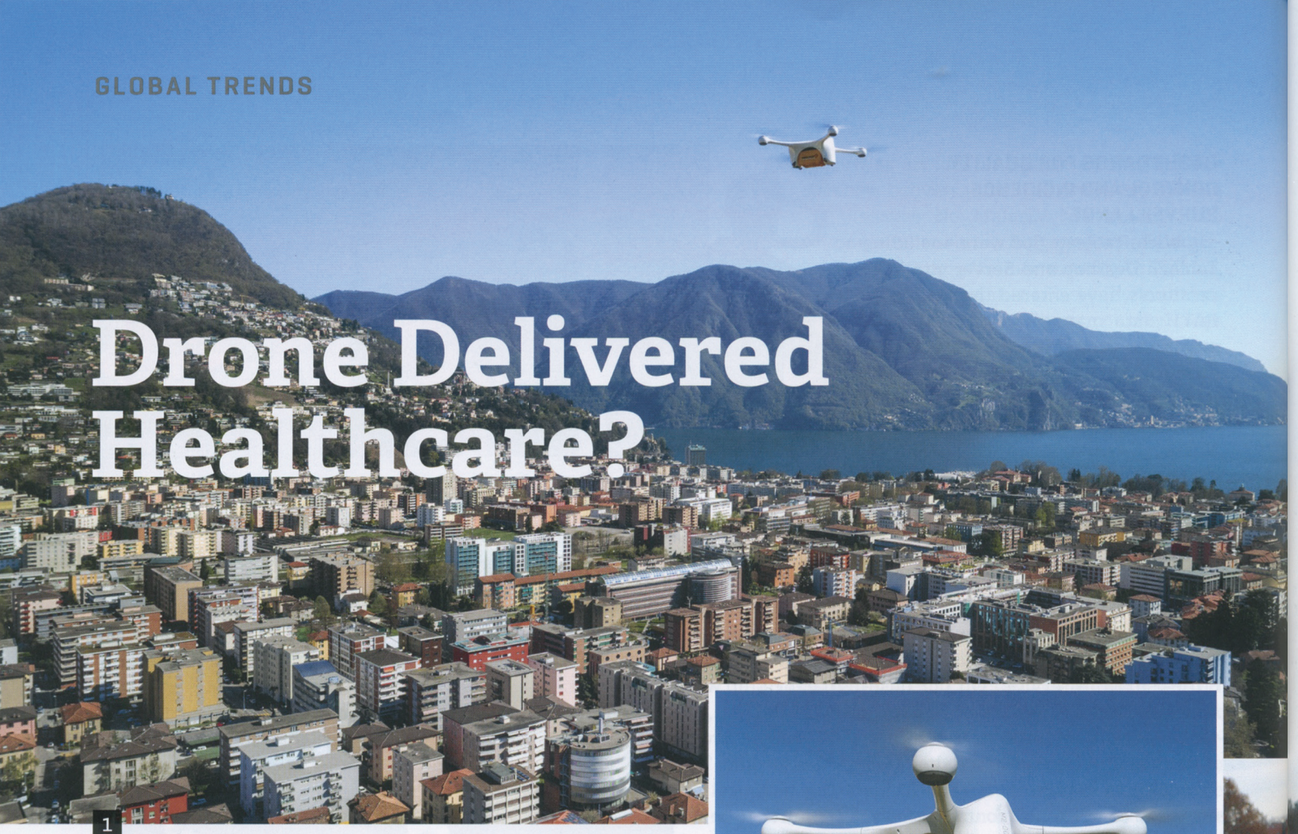
Drone Delivered Healthcare?



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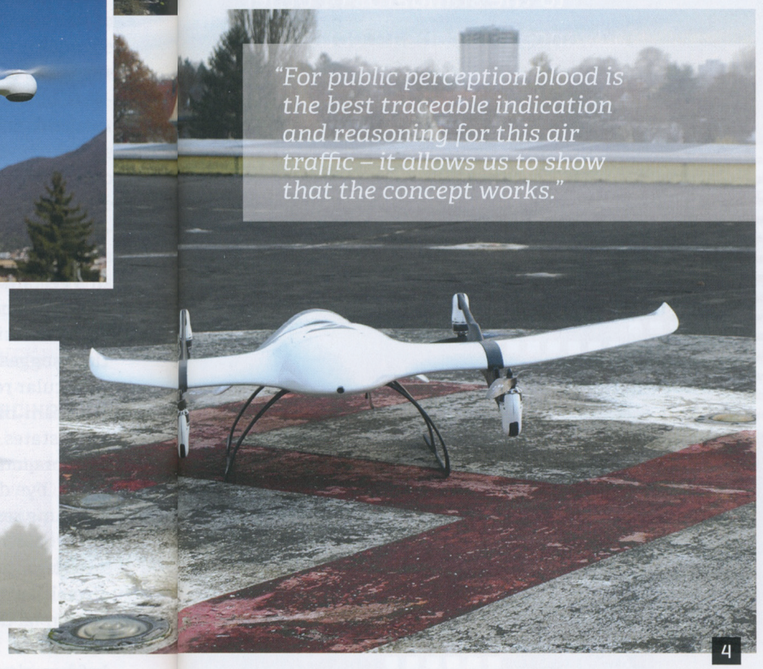

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Will 2018 be the year of innovation for healthcare logistics? Drones are expected to take over medical deliveries at several European hospital sites. While Switzerland is about to conduct drone delivery of blood samples between hospital sites in the Lugano region, a German healthcare institution is preparing for a general drone flight permission for emergency care purposes in Frankfurt.

By Anna Engberg

Drones for medical purposes have raised attention worldwide, namely in a Swedish trial where defibrillator-carrying drones promise to boost survival rates for people with cardiac arrest, or in South Africa where urgently required medications against rabies or snake bites can be brought to remote places. Will future European healthcare bring us blood and lab samples and maybe even organs via drones, or what should we expect from these visionaries taking medical supplies up in the air?

'DRONES FACILITATE A QUICK, SAFE AND PREDICTABLE CARRIAGE AND TRANSIT TIME'

Blood samples and products seem to be the first transit goods for all those healthcare institutions that have started trial phases for medical drone flight carriage. "For public perception blood is the best traceable indication and reasoning for this air traffic – it allows us to show that the concept works," states Dr Dennis Göbel, Manager of the Agaplesion Markus Krankenhaus in Frankfurt, Germany. As it turns out, the German hospital has more use case concepts lying in the drawer: "We can imagine an extension for other transport means such as laboratory, pathology and tissue samples, organs and the like," Göbel says and forecasts other potential options to be realised once the hospital has managed to get the blood sample carriage entirely off the ground.

To this end, the Agaplesion Markus Krankenhaus has worked together with a whole series of drone manufacturers and has purchased and tested all types of drones from octocopters to hexacopters in terms of aviation features, steadiness, safety under different weather conditions and weight class. "We want to connect the blood bank of our main site with other hospitals in the area of Frankfurt covering an air-line of five to seven kilometres beyond sight distance, and have now decided for a lightweight hexacopter model that can carry up to 2.4kg," says the hospital manager, taking into account the current drone regulation and the risk evaluation that is being compiled by the hospital management together with the German air traffic control.

"For public perception blood is the best traceable indication and reasoning for this air traffic – it allows us to show that the concept works."

1] Starting in 2018: blood sample delivery via drone in the Lugano region

2] The Swiss Post drones are controlled via smartphone app

3] The Agaplesion Markus Krankenhaus in Frankfurt is likely to rely on a hexacopter drone model

4] Not all of the tested drone models met the requirements set by the hospital management in Frankfurt

DRONE PURCHASE VERSUS RENTAL SERVICE

Not all hospitals purchase drones themselves – which, in fact, are a costly affair. In Switzerland the regional public hospital of Lugano, Ospedale Regionale di Lugano, has initiated a joint project with Swiss Post and drone supplier Matternet. Amidst the hilly and lake-dotted landscape drones are supposed to accelerate transports between two sites of the clinical network as a start, hospital manager Luca Jelmoni tells *Insights*. After collaboration with local logistics failed, Jelmoni received word of the drone project from Swiss Post searching for a suitable business case.

As it turned out, the need for quick and safe blood sample delivery evolved to be the perfect fit as a business case. Via drone the main hospital in Lugano can now provide lab samples even if the smaller lab in the city centre is already closed from late afternoon onwards and on weekends. The idea is simple: Swiss Post works as the drone supplier, whereas the hospital remains a customer renting out the drone service for a fixed fee per transport. "For us the ideal solution is that we have around 10 to 15 blood transports each day," he says. Switching to drones brings along many advantages: "Delivery time reduces from 15 to 45 minutes, depending on traffic via taxi delivery, to only 5 minutes via drone. Our drones fly autonomously landing on infrared landing pads controlled just initially by a smartphone app through medical staff," Jelmoni says of the progress. It has been tested approximately 80 times and the service is almost ready to go live. After feasibility has been proved and all the permissions from the Swiss civil aviation authority have been obtained, the challenge is to make the process further automatised and integrated into the hospital processes. So far each drone flight was manually approved via phone call, this however will be done automatically via app in future. Jelmoni estimates the service to go live at the beginning of 2018.

'WE UNDERESTIMATED LEGAL REQUIREMENTS'

In Germany, the situation seems to be even more difficult: "We underestimated the necessary legal requirements," the hospital manager in Frankfurt admits. "Our first drone flight proposal was ignored until public media pitched the topic to the regional council which then was ready to talk to us," Göbel says. Once in the public light, the hospital carved a trail for elaborating a risk evaluation that will not only apply for its own hospitals but serve as a template for all upcoming proposals. And, according to the hospital management, the ambition even goes beyond transport for clinical terrain: "Throughout the city landscape, we want to be able to act on emergency mass scenarios as showcased with MANV 500 and potential terrorist threats by bringing blood immediately to accident sites". Göbel further claims that hospitals with blood banks should be obliged to stock a defined number of drones to bring medication and blood products with minimal effort to the site of a potential catastrophe.

If Frankfurt succeeds, which is likely to happen sooner rather than later, a general flight permission should be attainable more easily for all successors. Even more so as the federal council of Germany will have reviewed the current drone regulations from April 2017 that still state that drones may not fly near hospitals – and this, luckily, has to be reviewed every two years. ■

Source: Ospedale Regionale di Lugano; Agaplesion Markus Krankenhaus