saniguide

HEALTHCARE ARTIFICIAL INTELLIGENCE SYSTEM

5 MOMENTS
FOR HAND HYGIENE

1 BEFORE PATIENT CONTACT

2 BEFORE A CLEAN / ASEPTIC PROCEDURE

3 AFTER BODY FLUID EXPOSURE RISK

4 AFTER PATIENT CONTACT

5 AFTER CONTACT WITH PATIENT SURROUNDINGS

Problem:
50% of trained healthcare professionals DO NOT follow proper hand hygiene; particularly around "The 5 moments". Furthermore, those who do follow proper procedure do not always completely clean their hands.

This leads to increase of nosocomial infections within the hospital. Causing increased length of care for patients and increased liability for health systems.

WHO's guidelines for when health-care workers should perform hand hygiene is called "The 5 Moments".

Solution:
Saniguide has developed an AI driven system, SaniGuide, that actively monitors compliance with "The 5 moments" and reminds healthcare professionals, in real time, when hand hygiene is needed for patient and professional safety.

We work to prevent Health care Associated Infections by using Health care Artificial Intelligence.

Saniguide holds an attractive underlying technology that can revolutionize the healthcare industry
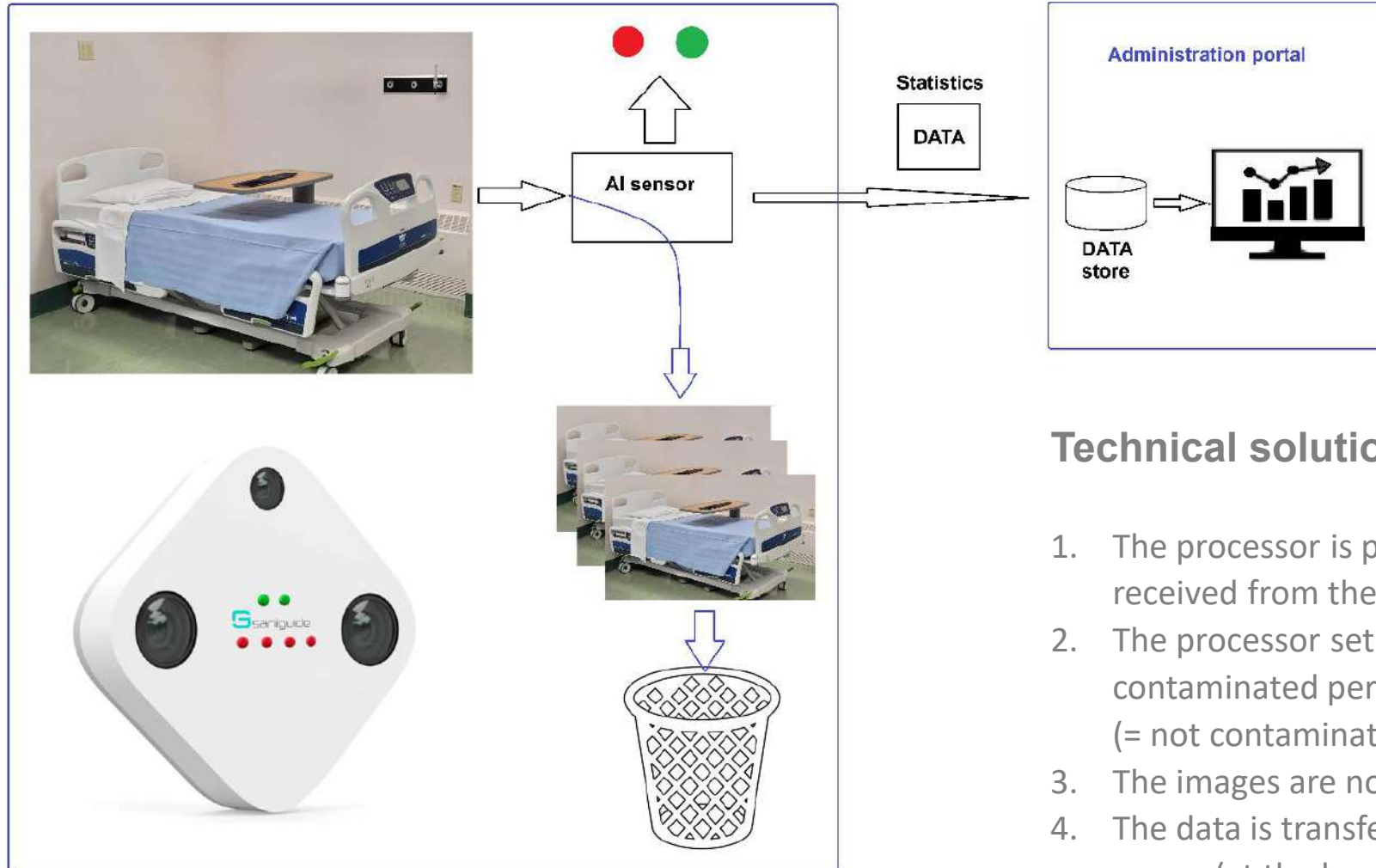
Briefly about how it works:

1. An artificial intelligence (AI) processor with a sensor is mounted on the ceiling of the patient room. In addition, there is a light source attached to each bed and by the door.

2. The AI program in the processor continuously analyzes all events in the room and has learned to distinguish between violations and compliance with "The 5 Moments of Hand Hygiene".

Statistics

DATA

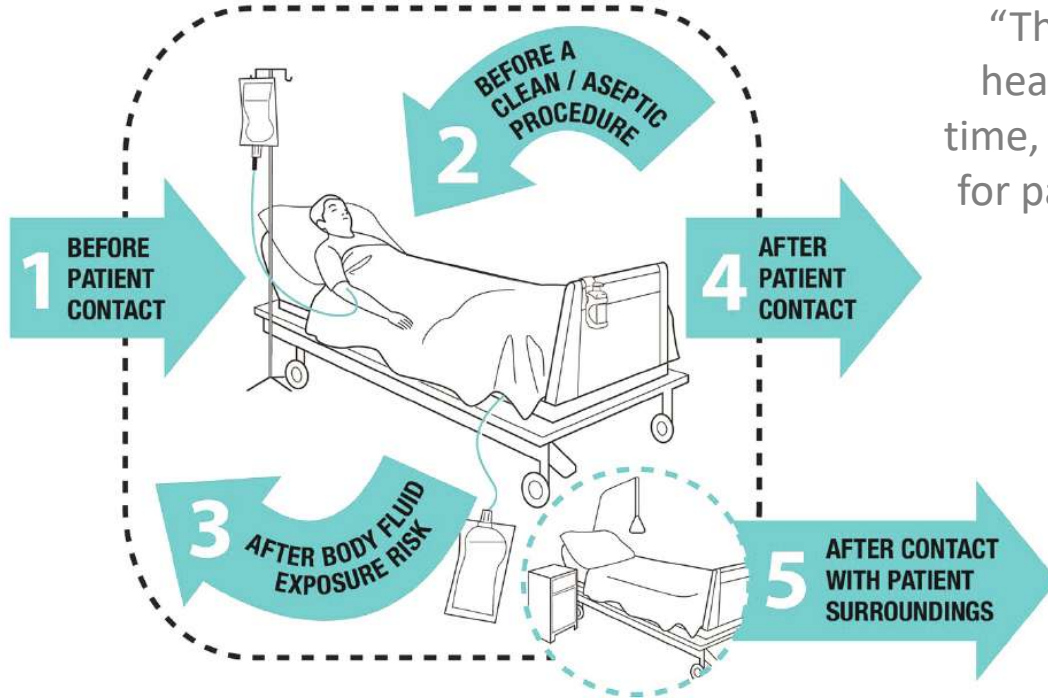Administration portal

DATA store

AI sensor

Technical solution:

1. The processor is processing the images received from the AI-sensor.
2. The processor set up a red light (= contaminated person), or a green light (= not contaminated person).
3. The images are not stored.
4. The data is transferred to a cloud or server (at the hospital).

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Value Proposition:

- Reduces Healthcare-Associated Infections (HAI) and use of antibiotics
- Increased patient safety and satisfaction
- Environmentally friendly and great sustainability
- Significantly reduces costs due to less patients catching nosocomial infections
- Better reputation

HAI are infections occurring in patients during stay in a hospital facility
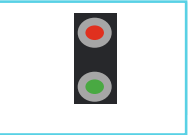
Saniguide propose a simple way to facilitate a significant reduction of HAI

Artificial Intelligence System - functionality	
	✓ The Healthcare Artificial Intelligence System will track all people residing in the patient's room. (No wearable ID-tag is needed).
	✓ A red or a green light will appear when the person is 5 cm from the patient zone
	✓ The system will give a green light when the person has washed their hands prior to entering the patient zone, and will disappear after some seconds
	✓ The system will give a red light when the person has not washed their hands prior to entering the patient zone, and the light will not disappear before the person remove themselves from this area
	✓ The system can also handle several people at once...
	✓ ... and the patients themselves if they lay down without washing their hands after entering the room

The Healthcare Artificial Intelligence System alerts the personnel or visitors if deviating from their hand hygiene routines

Saniguide propose a simple way to facilitate a significant reduction of HAI

When someone enters the patient zone (bed, bedside table and medicine stand), the program knows whether the person has performed correct hand hygiene or not. If the processor detects a violation of "The 5 Moments", it will automatically activate a red light above the bed in question. If the processor detects that hand hygiene has been carried out correctly, it will activate a green light. This is to clearly indicate to both the patient and healthcare personnel whether hand hygiene has been carried out correctly or not.

In the same way, a light source placed by the door will activate a red/green light when healthcare personnel leave the patient room. (Hand hygiene must be performed before leaving the patient room).

The light source can be shielded, so that it can only be seen by healthcare personnel, not by the patient. Both the green and/or the red light can be deactivated as needed, for example to be able to collect statistics without affecting behavior.

The program sends anonymized statistics to a database, which can be used to analyse compliance with hand hygiene. This (as well as information about the state of the system) is the only information that leaves the room. The technology cannot identify persons.

The nurse is on his way out of the patient room. He has forgotten to perform hand hygiene. A red light comes on at the door.
The nurse goes to the dispenser, performs hand hygiene, and can now leave the patient room.

Our product today - sensor with artificial intelligence and software program

- ✓ The brain in the system consists of two different sensors that receive data and send the information further on to a computer.

- ✓ All the data is processed in the computer, and then compared to a "answer" stored in the computer's memory.

- ✓ With the help of artificial intelligence and machine learning, the brain is able to identify different actions, and compare these with the "answer" stored in the memory.

- ✓ The computer will emit a red light, if there is no compliance between the hospital's regulations for performing hand hygiene, and the healthcare giver's actions. This will give the healthcare givers the opportunity to interrupt the work, perform hand hygiene and then return to work.

- ✓ The system guides healthcare professionals to perform hand hygiene at the right time. We call the system the silent assistant.

Sensor:
Utilizing an imbedded monitoring unit, the system will actively monitor when the 5 moments occur and notify the care giver if their hand hygiene is non-compliant. The system can also monitor patient safety and compliance, as well as cleanliness of hospital equipment.
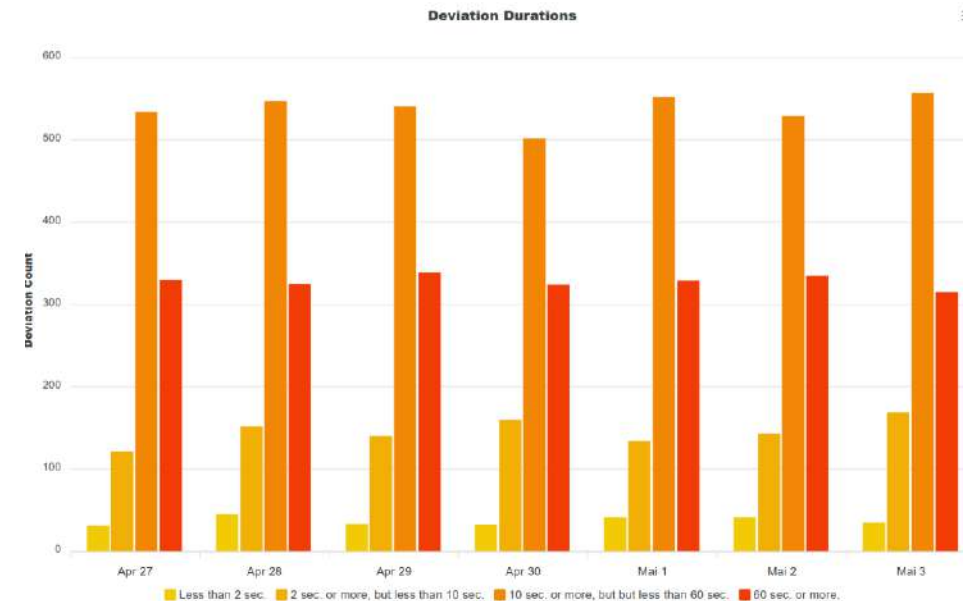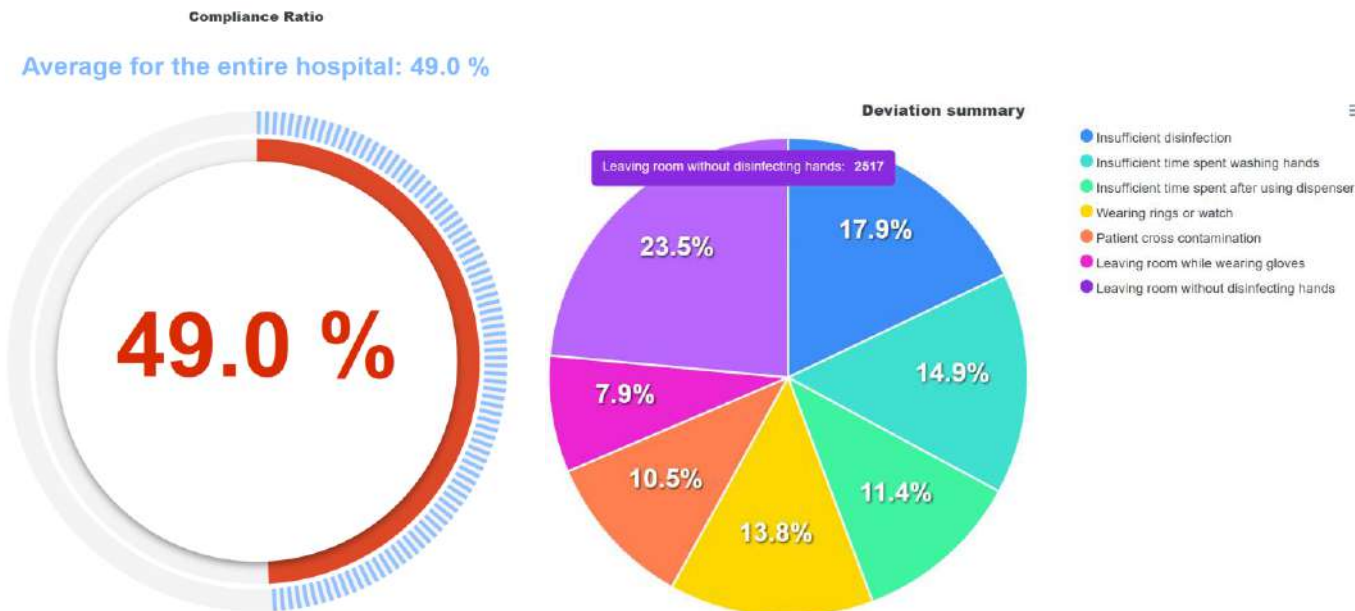
Self-developed software and AI

Analytic tool (software program).
- An analysis tool has been developed that the infection control department at the hospital can use to map how compliance with "The 5 Moments" is.
- With the help of the analysis tool, it is also possible to isolate problem areas in the hospital. In this way, it is possible to find any deviations and close discrepancies.
- The company has in-house developed software for communication between camera/sensor and the processor
- **In addition they have a in-house developed algorithm (AI) where there is a patent pending in US**

Saniguide benefits

- ✓ Does not affect the patient or healthcare professionals' environment
- ✓ Does not require any active participation from the employees, patients or visitors
- ✓ Does not require any special training
- ✓ Does not disturb the operation at the hospital
- ✓ Does not violate the privacy act
- ✓ Has no moving parts, and thus require little or no maintenance
- ✓ Has easy installation, takes up little space and requires no special cleaning
- ✓ Has a long lifetime, up to 20-30 years

The system continuously handle the information it receives and assist the employees, patients and visitors to conduct hand wash according to the hospital routines

What can the system do?

- ✓ Notify the hospital personnel of deviations from the five moments and WHO's recommendation for "How to perform hand hygiene".
- ✓ Notify if the hospital personnel is wearing a watch, ring or bracelet
- ✓ If a patient leaves the room, the system will notify to wash their hands before he/she is going back to the hospital bed
- ✓ Alert visitors to wash their hands before entering the patient zone
- ✓ Alert if patient-related instruments have not been cleaned according to hospital hygiene routines
- ✓ File all events, but not identify the caregiver*

In Europe and in some other countries it is against the law to monitor the workers

The five moments

1 Before touching a patient
2 Before clean aseptic procedures
3 After body fluid exposure risk
4 After touching patient
5 After touching patient surroundings

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