

Interview with dr Krisztián Jáksó, Chief Clinical Physisian, PTE KK Institute of Anesthesiology and Intensive Therapy, University of Pécs, Hungary

Could you describe the collaboration with Philips?

As a multidisciplinary intensive care unit, our collaboration with Philips has a past of 17 years, due to the use of the central monitoring systems, but the special collaboration started in 2015, when we simultaneously started to use a new, central monitoring system with ICCA PDMS. In Hungary, there was no such intensive therapy for adults in use before. I am convinced that the corner stones of building the system 6 years ago were the endeavour and that we had a conception. Monitors, central monitors, pump systems for medicine dosage, breathing machines, all in one system simultaneously in time and space. In parts, achieving such an integration one-by-one would have been much more difficult with more sources of error.

Why did you decide to buy the ICCA solution?

The healthcare system will have to face extreme challenges in the coming decades, in the fields of healthcare data entry, data security and digitalisation. Our workplace, the Clincial Centre of the Scientific University of Pécs, as a regional healthcare and educational centre has to face high medical, IT, statistical and other scientific expectations towards its data generated in patient care. In the coming time period, the value of healthcare data will increase, so the accuracy of the entered data, the reliability and speed of tracing back data, next to the scientific value, will be in proportion with the security of patient care, and the guarantee of all these properties will represent a financially quantifiable value.

Besides, the essentially unchanged, paper-based data entry used in the past 30 years in the intensive care units, due to its inaccuracy, frequency of data entry, has nowadays become outdated.

The third main reason of the acquisition is the fraction of care worker / patient, which is relatively small even in our region. The starting idea was that each and every spared minute of work of the care unit administration will be converted to effective patient care!

How did the introduction of ICCA affect the work of the faculty?

After passing the initial difficulties and after the use of the system, it has become daily routine that the workers of the institute, in ways specific to the groups, started using the most advantageous properties of the system. They started to enjoy work with the new system. The doctors like to hold shorter visits. The care workers like to spend more time in the immediate presence of the patients, not doing administrative work next to temperature charts. Our scientific associates have found out that they can achieve more consistent data for their investigations with the pre-edited reports from the system. Our young resident doctors are able to spend much more time with practicing invasive manual operations if they are ready with the daily routine paperwork in shorter time. In this case, the many-parameter score systems compulsory to be filled in are filled in automatically by a PDMS system, and they only have to supervise it. Workers of the hygiene service of hospitals - even through remote access - have found much more accurate data of administration of medications and laboratory diagnostics in a fraction of the time. These data were found in the ICCA, and also contributed to refining their insights and predictions of infectology, epidemiology and hygienie.



Has the system reduced the burdens of the workers of the care unit, and in what direction has it changed your work?

It is common in all the above mentioned care units that the directly administrative time taken for their work has been reduced. The length of doctors' visits has been reduced by 20-50% with respect to the time period before the system. We associated medical standard mobile client PCs to every patient's bed, as a part of the system, so that a malfunction of any PC can be dealt with without problems. For the age group of the young doctors and care workers the administrative part of the work is "entertainment" if they can do their work in the usual digital environment. For the age group of the more experienced workers changing to the new system it was more of a challenge, but it is possible to see a certain pride that they feel with successful use of the system. On the manager level a healthy feeling of competition has developed as to who can first learn the new system.

Does the ICCA system help in managing the finances of the care unit? This is currently not yet relevant, but we can signal it as a future request.

Due to the country-specific properties of the healthcare system and to the complexity of the intensive therapy, it is nearly impossible to accurately calculate the exact therapy costs of the patients taken care of in the intensive care unit. The HGP (homologous group of patients) based financial system does not force this onto the institutes. The ICCA system has the potential to automatically perform consumables, medications and workforce calculations given pre-parameterised background data. Within the foreseeable future the demand for providing such accurate data will appear.

In your opinion, in what way is the ICCA useful for anesthesiological, intensive and intensive care unit doctors?

The doctor and the care worker, who needs to spend less time with paperwork, can spend more time in the immediate presence of the patient. If our doctors can summarise patient data for statistical calculations more easily, they can carry out more and more accurate investigations.

However, in an unexpected, not foreseeable way, the system provided the greatest help in the intensive care of COVID. In the isolated environment, established because of the risk of infection, for the staff it is both physically and mentally extremely challenging to do administration besides curing the patient. The ordering of medications and procedures via remote access is possible, and controlling the completion of orders and summarising the patient parameters in the green zones is feasible. We can spare human resources and financially quantifiable work time by using the system in every minute when we do not have to sluce into the red zones due to administrative obligations.

What kind of data does the ICCA summarise? In what way does this help doctors?

In order to achieve the fastest and most widespread acceptance of the system, we plan to create a graphical structure which resembles in its facade and logical setup the original paper-based data entry as close as possible. Based on this, we separated the data sets pertaining to specific parts of the patient visits during the configuration of the system.

What must appear in separate sections:

- automatically arriving monitor parameters
- automatically arriving breathing parameters
- laboratory parameters arriving from HIS



- the “liquid sheet” controlling the total liquid balance
- the automatically arriving data of the POCT blood gas measurements
- the data of the score systems for patient severity
- the shift transfer notes of the care workers
- the orders of the doctors
- the completeness table of the orders

The visualisation of lab results, orders and monitor parameters separately per organ system is in development.

I think we could mention future plans, in which we could describe specific functions such as custom score, custom data queries, and the unmined field of anesthesia.

One of the most important challenges of the near future will be to parameterise the system, so that to procedures, interventions and completions of orders of medication, an automatically pre-determined quantity of consumables, medication active agents are associated and so provide calculations for their accurate cost.

We plan to write reports, which accurately adjust to requirements for providing data for scientific investigations, so that hundreds of patient data and groups of them can be extracted from the system for scientific purposes within a mouse click.

A common endeavour of the both the European Union and our home country is to safely store and use healthcare patient data. The ICCA system, thanks to the properties of the database working in the background, would be able to provide any kind of domestic or international data collection system subject to data security and appropriate legal regulations.

We can formulate questions and experiences with respect to Covid cases, if you see fit.

In whatever measures we digitalise the steps of data collection, certain technical orders, manual data entry is essential, because the doctors’ and care workers’ orders are sometimes custom, tailored to the needs of the patients. During the COVID intensive care the reduction of the direct contacts of the care workers has priority. We can only reduce the administrative time spent in red zones maximally if we reduce the manually entered data. We created order groups in the ICCA, which are universal for all COVID positive patients requiring intensive care, but can be extended and changed in their parameters to suit the individual patients. In this way, we can achieve dozens of orders of medication, investigation and intervention within a few seconds. We can spare time in the most critical part of patient care, the first hour of care. This is the most important... and this cannot be expressed in money.

**Thank you,
Philips**

