MONITORING SESSION

Early warning signs and the PICU of the future
There is an explosion of new technology for the early diagnosis in critically ill patients biomarkers, genomic profiles, heat profiles, ect. That can help predict mortality or who is going to get worst.
But the use of good medical history, clinical exam, with the use of medical wisdom and early recognition of warning signs with some ancillary test can have the best results

Respiratory monitoring
Monitoring oxygen saturation alone is not a good indicator of the true oxygenation and lung function.
The use of trends of ETCO2 and PaO2, after changing ventilator settings gives a better idea of the lung function.

Hemodynamic monitoring including oxygen delivery
The Hb-DO2 relationship is not linear, there is a point where no matter how much yu increase la Hb , the DO2 will not increase, and even goes down.
The use of lactate alone is not a good indicator of cellular perfusion, the combination of a-v CO2 difference is advised.

Neuromonitoring
There are many methods used to monitor the brain, the most used are ICP, NIRS, Internal jugular vein, etc., with the purpose is to detect the different responses to interventions
ICP dos not reflect exactly the cerebral perfusion.
The use of hyperventilation can reduce the IPC, but can decrease the cerebral perfusion and have a rebound response after.
The response is different if the patient ha o has not intact auto regulation.

Monitoring Kidney function to
Creatinine is not a good indicator of GFR in critically ill patients, its response to AKI is to slow and takes a couple of days to increase.
Cistatin C increase rapidly after an acute renal insult and  predicts the development of AKI.
The daily fluid balance can be done very easily, is very sensible, detects the percentage of fluid overload, and could associated the presence of AKI