High and variable blood glucose (BG) levels have been associated with increased morbidity and mortality in critically ill patients.

Model-based glycaemic control uses a physiological model of the glucose-insulin system to enable patient-specific control of blood glucose concentrations.

By fitting certain model parameters, model-based controllers can tailor interventions to the metabolic state of each individual patient as it changes over time.

STAR is a successful model-based protocol that has been developed and tested collaboratively in New Zealand, Belgium and Hungary.

STAR is implemented on a tablet computer, with a user interface developed in conjunction with nursing staff in all three countries.

STAR has been successfully implemented in 3 ICUs in NZ, Belgium and Hungary with very different clinical practices and requirements.

The STAR model-based glycaemic control protocol for critical care was developed in collaboration between researchers in NZ, Belgium and Hungary. To date, the results and safety have been excellent.