

47th
ESPEN
CONGRESS



47th ESPEN Congress

on Clinical Nutrition & Metabolism

Prague, Czech Republic
13-16 September 2025
Prague Congress Center



**REVOLUTION
IN NUTRITION**

 www.espen.org

 www.espencongress.com

 [espen_european_society](https://www.instagram.com/espen_european_society)  [ESPEN](https://www.linkedin.com/company/ESPEN)

Personalised nutrition delivery during Glycaemic Control in Intensive Care

Marie Seret

Model-based Therapeutics, GIGA Institute, University of Liège, Belgium



Disclosure for Marie Seret

In compliance with COI policy, ESPEN requires the following disclosures to the session audience:

Shareholder	No relevant conflicts of interest to declare.
Grant / Research Support	No relevant conflicts of interest to declare.
Consultant	No relevant conflicts of interest to declare.
Employee	No relevant conflicts of interest to declare.
Paid Instructor	No relevant conflicts of interest to declare.
Speaker Bureau	No relevant conflicts of interest to declare.
Other	No relevant conflicts of interest to declare.

Presentation includes discussion of the following off-label use of a drug or medical device:

Not applicable



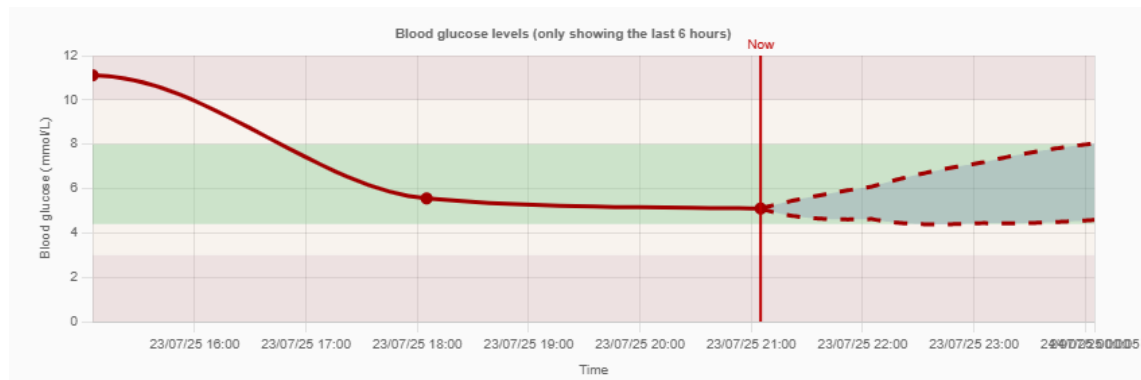
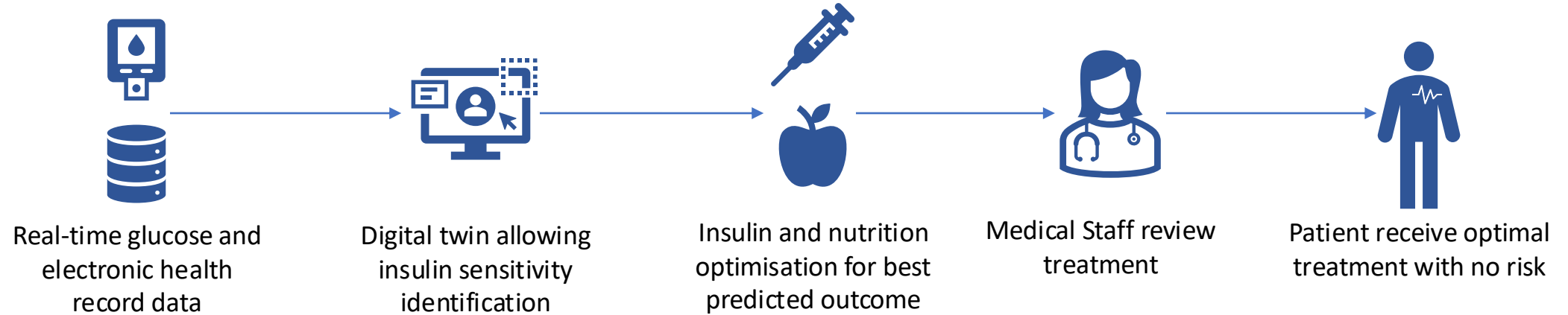
Nutrition delivery during glycaemic control (STAR)

Objective: Analyse nutrition delivery from 5+ years of validated personalised glycaemic control STAR protocol modulating insulin and nutrition.

➔ STAR is a model-based, AI-powered, patient-specific glycaemic control protocol based on insulin sensitivity (SI) identification and predictions.



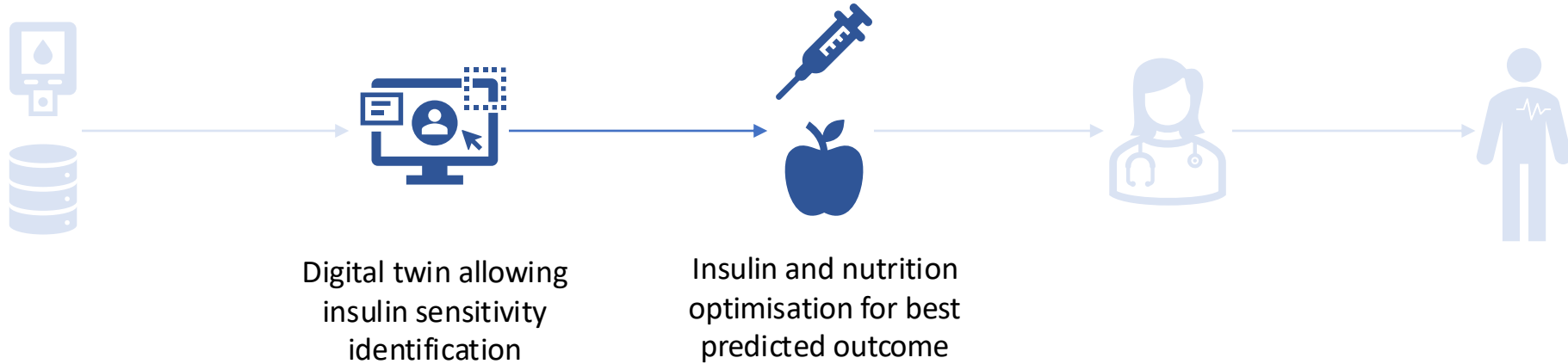
Insulin sensitivity to guide insulin and nutrition delivery



Software at patient bedside connected to the EHR (Glucomeo™ developed by Insilicare)



Nutrition management in STAR



- Enteral Nutrition Goal Feed (GF) and type determined by medical staff
- Nutrition modulated between 30 and 100% GF once initiated
- Only decreased if insulin effect is not sufficient



Data

Observational study of **5+ years** of use of STAR as the standard of care in Christchurch Hospital ICU, New Zealand



5.5 years
(April 2019 – December 2024)



734 patients
1009 episodes



Only fed patients
considered



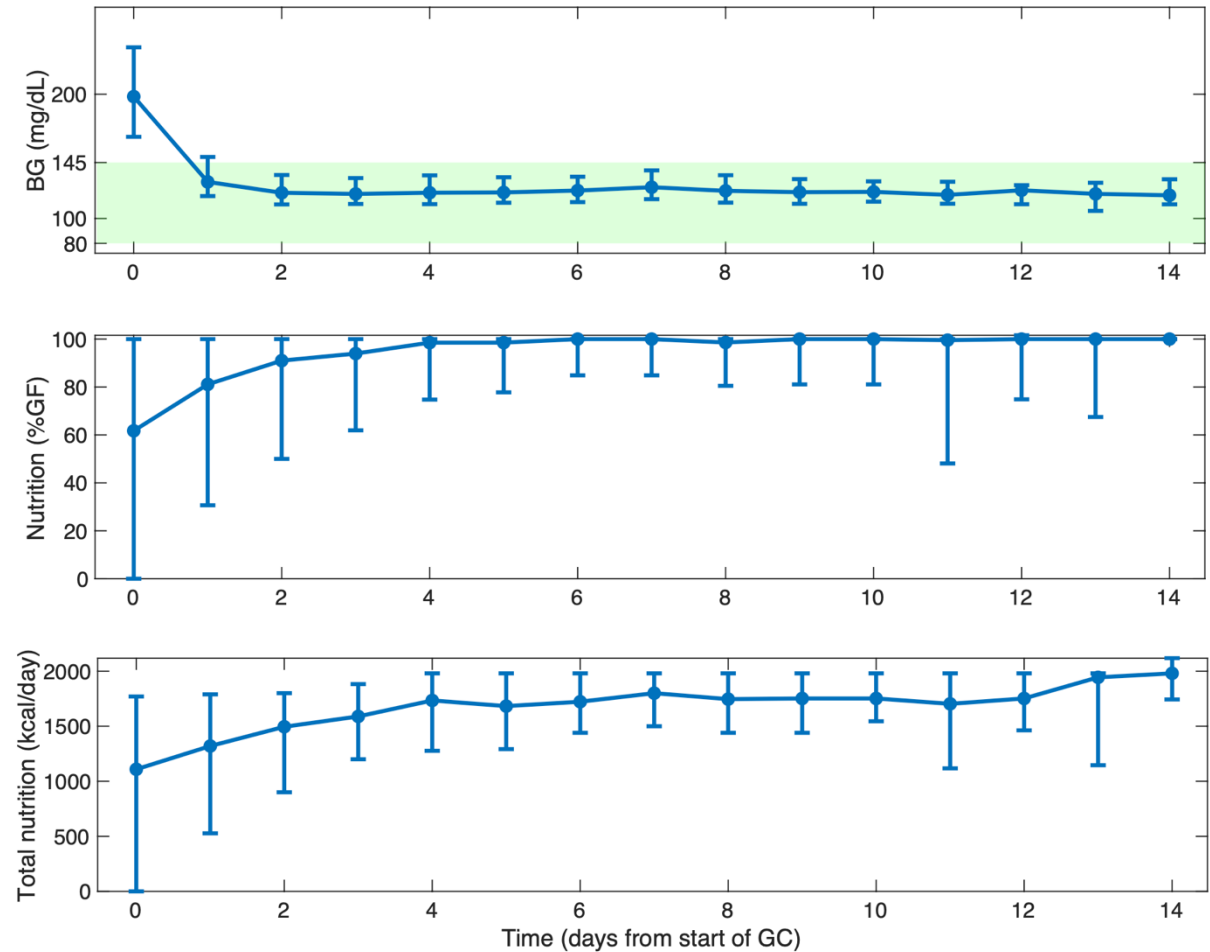


Results

- **High efficacy:** 72.4% BG in band (80-145mg/dL)
- **High safety:** 2 severe hypo (0.3% of patients)
- **High nutrition delivery:** 94 [54 – 100] % goal feed with overall increased delivery over time

➔ Matches nutrition recommendations with more personalisation (more or less based on patient condition)

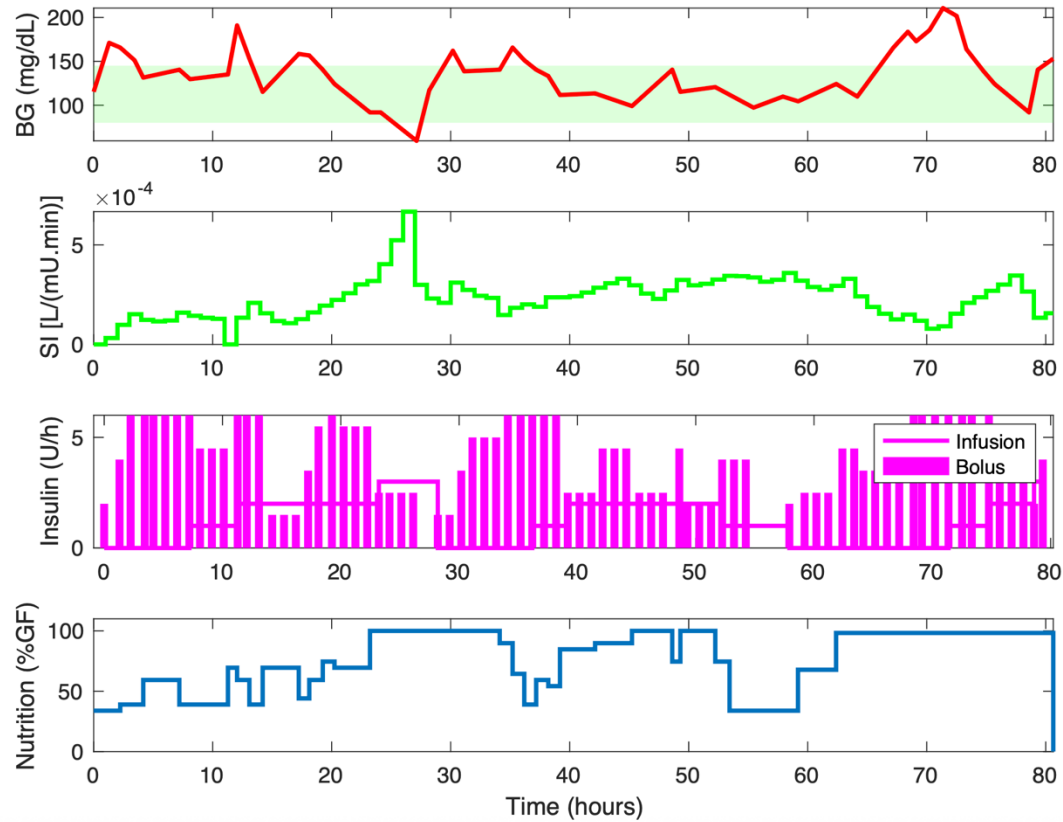
Daily Cohort Median [IQR], Day 0 = admission data





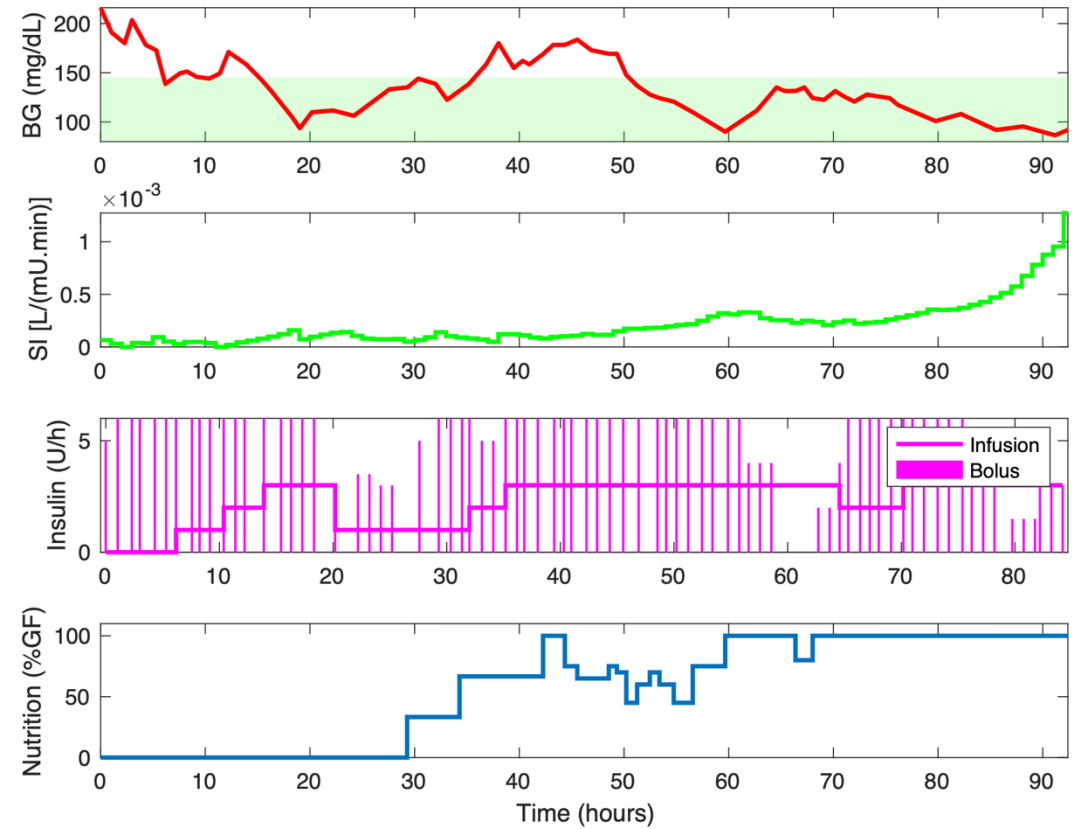
Results

Example 1



Nutrition delivery : 86 [57 – 100] %goal feed

Example 2



Nutrition delivery : 67 [0 – 100] %goal feed



Conclusions

- Best in the world glucose control outcomes (safety & efficacy)
- Higher, personalised nutrition delivery compared to most ICUs in the world, despite modulating nutrition
- Personalised nutrition delivery based on identified SI, marker of metabolic state (catabolic >< anabolic)? ➔ (Could) provide insights in nutrition timing, need further validation (work in progress)

Future work to **determine whether SI can be used** alone, or in combination with other biomarkers, **to guide nutrition in critical care.**

Thank you!

The authors acknowledge support from the Service Public Fédéral Stratégie et Appui (BOSA) – DIGITWIN4PH, the EU H2020 R&I programme (MSCA-RISE-2019 call) agreement #872488 – DCPM, and the EU Horizon Europe R&I programme agreement #101095435 – REALM.