The BRIDGE-Crit Project

Building Recovery through Integrated Discharge Guidelines and Education after Critical Illness

A pre-post implementation study and health care economics analysis

Oona Leemans, Zenzi Rosseel, Jean-Charles Preiser, Elisabeth De Waele
Contact: Oona Leemans, +32479780995, oona.leemans@uzbrussel.be

Description of the initiative

Survivorship of critical illness has increased, shifting attention toward recovery and long-term outcomes. ICU survivors are often challenged with persistent nutritional inadequacy, reflecting insufficiently defined physiological requirements and limited implementable evidence-based guidance for the recovery phase. Current available data[1,2,3] demonstrated that an adaptive nutritional protocol (escalating/de-escalating PN, EN, and ONS) is a feasible approach to improve post-ICU adequacy. However, qualitative data revealed significant barriers to implementation on general wards, including HCP confusion, logistical hurdles and patient-reported symptoms (nausea, appetite loss). Research indicates that nutritional intake issues persist up to 1 year and longer following hospital discharge in critical illness survivors[4], yet there is currently no standardized "after-hospital" pathway to ensure nutritional care persists into long-term recovery. BRIDGE-CRIT aims to bridge this gap through a multi-center, pre-post implementation study, testing a **new standardized nutritional hospital discharge policy for survivors of critical illness** and measuring its acceptance, feasibility, and sustainability. Innovation is achieved through a focus shift from purely research to implementation of a permanent clinical infrastructure based on the continuous recovery journey. Using a low-burden model, the patient experience of nutritional recovery will be prioritized, alongside a health economics analysis to prove scalability.

Planned activities & deliverables

1. Literature review: Identifying specific pitfalls and facilitators in nutritional delivery during/after hospital discharge.
2. BRIDGE-CRIT **toolkit development**: **Multi-lingual** patient-centered informative leaflets and videos on post-critical illness nutrition, practical food tips (hypercaloric where appropriate), information and guidance on at-home ONS/EN/PN, decision-support medical nutrition prescription forms, and standardized 3-day sample kits in case of ONS.
3. Prospective post-implementation group: Deploying the **Discharge Bundle** at UZ Brussel for all patients meeting the inclusion criteria (adult, ICU stay ≥ 7 days, ward stay ≥ 3 days, heterogeneous disease states).
4. Tele-health **follow-up**: Structured calls at 3 weeks and 3 months to monitor nutrition status, **adherence** to advice and troubleshoot barriers in real time (e.g.: GI intolerance, access issues, taste fatigue).
5. Comparative audit: Benchmarking the UZB implementation group against an **internal pre-implemention historical control (**ex-UZB patients who partook in a previous post-ICU nutritional study) and an **external control (patients from the post-ICU follow-up clinic at Erasme Hospital)** to determine effectiveness and transferability through semi-structured interviews.

The extensive experience with post-ICU clinical structures brought on by the Erasme Hospital HCPs is invaluable in identifying common pitfalls and refining the 'translational' aspect of the pathway from the ICU to the community. The **multi-center collaboration** with Prof. Dr. Jean-Charles Preiser will demonstrate **transferability across different clinical and linguistic settings**. Utilizing a dedicated nutrition expert for this project ensures the protocol can be integrated into daily ward rounds without increasing the workload of hospital staff.

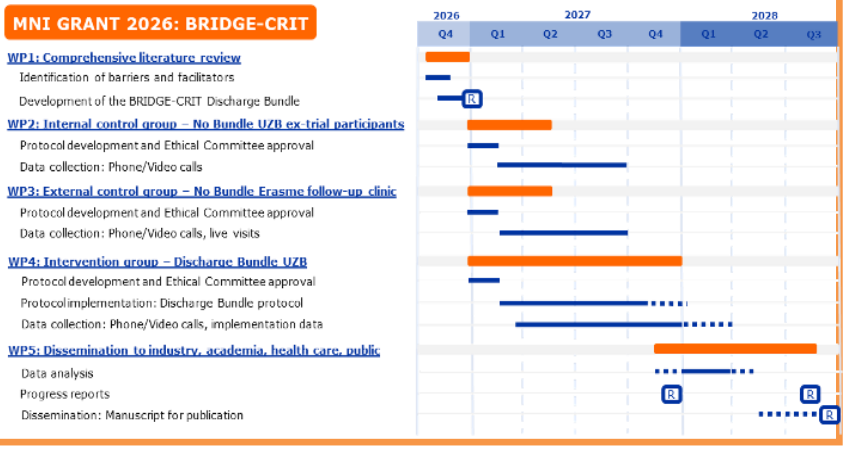
Results, expected outcomes & impact

Deliverables: A validated, multi-lingual "Discharge Bundle" (leaflets, videos, prescription templates, and sample protocols), available for patients and shared through the international networks of VVKVM, SBNC and the Global Research Initiative on Post-ICU nutrition (GRIP), adoptable by **any European hospital with minimal cost**. Patient-provided information: clarity of nutritional recommendations upon/after hospital discharge and barriers to medical nutrition use in post-hospital settings.

Clinical impact: Measurable increase in **adherence** to advice and use of medical nutrition at 3 months post- discharge.

Policy impact: Present the 'adherence gap' and cost-effectiveness data (FTE's, discharge bundle cost) to hospital management and national health parties to advocate for **the structural inclusion** and reimbursement of a permanent expert-led post-ICU nutritional follow-up protocol.

Progress after 12 and 24 months: see Gantt chart below.



Budget

Personnel (€39,6K): Research dietitian or nutritional expert, who will serve as the dedicated person to this project for 15 months, with variable work intensity: 0,6 FTE for 9 months (€32,4K), followed by 0,2 FTE for 6 months (€7,2K). They will be managing the literature review and protocol development, perform the screening/assessment before discharge, and conduct the follow-up calls for all cohorts (120 patients total). To ensure the clinical infrastructure remains active after the study period, the Discharge Bundle will be integrated into the UZB electronic health system and the dedicated expert will transition to a Train-The-Trainer model to educate permanent staff on the protocol.

Materials and admin (€400): Data management, design, printing, and recording of the Discharge Bundle materials, purchase of sample kits, and travel costs between UZ Brussel and Erasme Hospital.

Other Funding: 100% of the MNI funds will go toward clinical implementation of this protocol and patient-facing resources. No other funding has been sought for this project.

1 Preliminary data, BRIGHTSIDE study, Zenzi Rosseel et al.
2 Slingerland-Boot R, et al. Prospective observational cohort study of reached protein and energy targets in general wards during the post-intensive care period: The PROSPECT-I study. Clin Nutr. 2022 Oct. PMID: 36067584.
3 Paulus MC, et al. The impact of an individually tailored, stepwise nutrition protocol on energy and protein adequacy in post-ICU patients: The PROSPECT-II observational cohort study. Clin Nutr. 2025 Nov. PMID: 41061513.
4 Rousseau AF, et al. Adequacy of Nutritional Intakes during the Year after Critical Illness: An Observational Study in a Post-ICU Follow-Up Clinic. Nutrients. 2022 Sep. PMID: 36145173.

☑ **Please tick to confirm the PEN letter of endorsement is attached.**