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intercare

A nurse-led care model to strengthen geriatric expertise in long-term care facilities: **Implementation and evaluation of the INTERCARE model.**

Summary

A nurse-led care model to strengthen geriatric expertise in long-term care facilities:

Implementation and evaluation of the INTERCARE model.

Summary

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Acknowledgments

This report reflects the commitment of the long-term care facilities (LTCF) that participated in the INTERCARE study over two years, external collaborators who conducted or supported the INTERCARE nurses' training and coaching throughout the study, the stakeholder group members and the INTERCARE research group members.

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The stakeholder group was very supportive throughout the duration of the study. Their input helped build a care model that fitted the Swiss context and allowed LTCFs to tackle obstacles in implementation, contributing to a sustainable intervention. We highly appreciated their engagement and participation.

Brief overview of the INTERCARE model
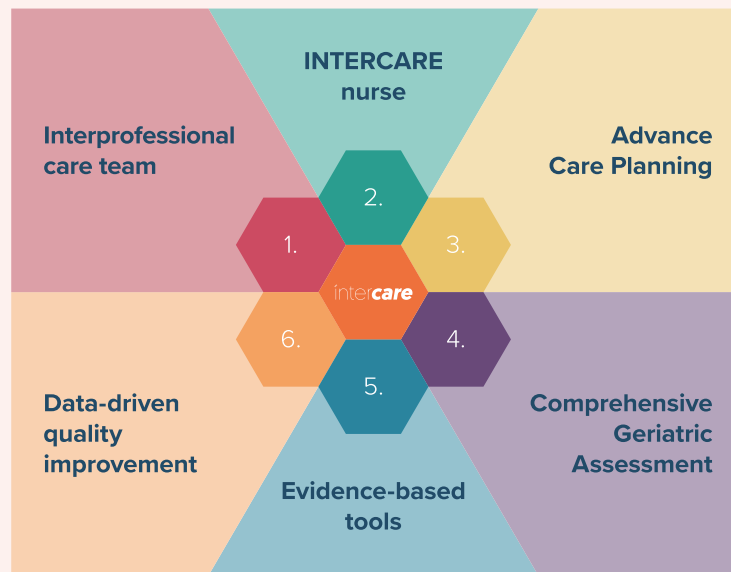
The INTERCARE model consists of six core components:

1. Interprofessional care team
2. INTERCARE nurse
3. Advance Care Planning
4. Comprehensive Geriatric Assessment
5. Evidence-based tools
6. Data-driven quality improvement

The central elements of the model are **the interprofessional care team** and **INTERCARE nurse**, a registered nurse in an expanded role who has additional competencies and responsibilities compared to the traditional registered nurse's (RN) role. INTERCARE nurses, supported by the LTCF leadership, take **responsibility for the clinical lead in complex resident situations**, empower care teams **by coaching and supporting** them, and **facilitate interprofessional collaboration**. INTERCARE nurses address gaps in geriatric expertise to improve the quality of care. Moreover, with the members of the leadership team they drive **the implementation** of comprehensive geriatric assessment (CGA), advance care planning (ACP), and analyse available data to monitor and optimise the quality of care, which require facility-level efforts.

Chapter 1 – **Introduction**

Healthcare systems face challenges due to an ageing population and increased life expectancy, resulting in a growing number of older adults with multiple chronic conditions. By 2030, the older population will outnumber younger age groups, and our current health system is ill-prepared to provide adequate care for this demographic (Bundesamt für Gesundheit., 2016; Bundesamt für Statistik., 2020a; Merçay et al., 2016). Additionally, there is a shortage of healthcare professionals, including general practitioners (GPs) and nurses, particularly in long-term care facilities (LTCFs) (Bundesamt für Statistik., 2020a; Merçay et al., 2016).

In Switzerland, a significant portion of care in LTCFs is provided by non-tertiary level educated care workers with limited healthcare training and expertise in geriatrics (Bundesamt für Statistik., 2020a). Registered nurses in Switzerland have at least three years of education and training, while other care professionals, such as licensed practical nurses (LPN) and nursing assistants, have varying levels of education and training (Bundesamt für Statistik., 2020b). While the nursing teams in hospitals are predominantly composed of qualified nurses, the teams in LTCFs primarily consist of LPNs and nursing assistants. However, evidence suggests that care provided by non-tertiary-educated care workers without higher supervision can lead to suboptimal quality of care and a lack of consistent chronic care management (Zheng et al., 2022). The current organisation of physicians in LTCFs in Switzerland also presents challenges in care coordination and rapid assessment during acute situations. A significant percentage of residents are treated by external GPs, which can pose challenges in terms of coordinating care and responding promptly in emergency situations (Castle, 2007; Lerner et al., 2014).

These challenges contribute to unplanned and avoidable hospital transfers from LTCFs (Colombo et al., 2011; World Health Organization, 2015; Zúñiga et al., 2010). In Switzerland, a substantial number of hospitalisations from LTCFs are potentially avoidable, costing the healthcare system millions of Swiss francs (Muench et al., 2019). Several nurse-led models of care have been developed internationally to reduce these hospital transfers and improve the quality of care (Hullick et al., 2021; Kane et al., 2017; Ouslander et al., 2011; Tena-Nelson et al., 2012; Vogelsmeier et al., 2021). These models involve nurses in expanded roles working closely with residents and relatives, with the extent of their independence from physicians varying based on their educational level and scope of practice.

Internationally, most nurse-led care models include Advanced Practice Nurses (APNs)[1]. However, APNs are not readily available in Switzerland, so the INTERCARE model was developed to address the specific needs of Swiss LTCFs (Zúñiga et al., 2019). The model is based on a registered nurse working in an extended role, known as the INTERCARE nurse. The INTERCARE model focuses on recruiting and empowering nurses already working in LTCFs, saving time and resources compared to hiring new staff (Zúñiga et al., 2019). The INTERCARE nurse receives specialised training to enhance their geriatric competencies and support the care team. The model also emphasises improving collaboration between nurses and physicians to enhance decision-making for residents (Zúñiga et al., 2019). A brief summary of the INTERCARE model can be found on page 7.

The first phase of the INTERCARE model involved developing a contextually adapted multi-component nurse-led care model through extensive analysis and stakeholder engagement. The six core components of the INTERCARE model were tailored to the Swiss context based on the specific experiences of 14 LTCFs in different regions of Switzerland. The model aims to improve the quality of care and reduce unplanned hospital transfers. A first national report describes in detail the contextual analysis and the development of the INTERCARE model and can be found *here*.

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[1]The International Council of Nurses defines an APN as "*a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A Master's degree is recommended for entry level*" (ICN, 2008).

Chapter 2 – **The INTERCARE mode**

Context

The inclusion criteria for LTCFs that wished to participate in the INTERCARE study included having 60 or more long-term care beds, 0.8 or more hospitalisations per 1,000 resident care days in the previous year and being situated in the German-speaking part of Switzerland. **Eleven LTCFs were invited to participate** in the study. Information about the implementation context is often overlooked in research, particularly in clinical trials. The implementation context includes the physical environment, availability of tools and time resources, as well as staff behaviours, engagement, attitudes, and beliefs towards the intervention (Aarons et al., 2011). To **assess the context for the INTERCARE intervention**, surveys were sent to LTCF directors, unit managers, and staff. Overall, there was **a perceived readiness among LTCF directors, unit leaders and staff to implement INTERCARE**.

INTERCARE nurses

The INTERCARE nurses are regarded as **central components of the INTERCARE model**. These nurses were **recruited by the participating LTCFs** rather than the research team. In most LTCFs, the INTERCARE nurse position was advertised internally, and recruitment was based on knowledge, skills, desire to develop as clinical leaders, and commitment to the INTERCARE study. However, not all LTCFs followed the same recruitment strategy. Some LTCFs already had nurses in expanded roles, such as nurse experts, who expressed their wish **to develop professionally and implement the INTERCARE model**.

The INTERCARE nurses' role was **developed in collaboration with stakeholders** to fit the context of the Swiss-German LTCFs (Basinska et al., 2021). The role was tailored throughout the study based on the needs of different LTCFs. Prior to starting their roles, all INTERCARE nurses were surveyed and assessed based on seven core competency areas: **clinical practice, coaching, consultation, evidence-based practice, clinical and professional leadership, interprofessional collaboration, and ethical decision-making.**

Throughout their work, the INTERCARE nurses were engaged in direct clinical practice, coaching activities, exchanging information with nursing experts, reviewing literature, monitoring medication and adverse events, care planning, collaborating with LTCF staff and physicians, and engaging in end-of-life discussions with residents and relatives. Overall, **the INTERCARE nurses played a crucial role in developing, implementing and assessing various projects within the LTCFs**.

INTERCARE nurses structure their days based on **the needs of different units which participated in the INTERCARE study**. On a typical day, they start with morning exchanges with unit leaders **to assess current resident situations and define tasks**. They attend to **acute situations**, **coordinate** nursing measures and **follow-up** with external healthcare professionals if needed. They **support care teams** in complex situations. INTERCARE nurses have **different scopes of practice**, with some performing clinical assessments in addition to focusing on coaching and support. Beyond their daily tasks, they also provide **orientation to new staff** and guide or **support practice development projects**.

The INTERCARE study ended before the SARS-COVID-19 pandemic, therefore data was collected a year after the first SARS-COVID-19 wave, to capture changes and adaptations to the role. **During the pandemic, INTERCARE nurses became responsible for testing, isolation, protective measures and supplies**. They also took on roles as outbreak investigators and developed infectious disease guidelines. Some planned activities and projects had to be halted to prioritise SARS-COVID-19 responsibilities.

INTERCARE nurses play **a crucial role in providing professional support to LTCF teams**. They expressed a desire for further training in geriatric care and are willing to take on more decision-making authority. They also envision combining clinical aspects with project or quality management roles. Ideally, they would be employed in a separate position to have more freedom for internal projects. **INTERCARE nurses consider their roles to be expandable beyond complex resident situations in the future.**

Implementation science and supporting strategies

Implementation science aims to facilitate the uptake of evidence-based practices or interventions in real-world settings (Peters et al., 2014). It combines various methodological considerations, including contextual analysis, stakeholder involvement, and theory-driven intervention development. To support the **implementation of the INTERCARE model** in LTCFs, **implementation strategies were used** (Powell et al., 2012).

The **range of strategies** utilised to **implement the INTERCARE model** included **leadership meetings, information provision, ongoing support, in-person meetings, and coaching sessions**. Prior to implementation of the INTERCARE model, leadership meetings were organised with LTCFs to discuss and plan the necessary steps. Structural characteristics, implementation climate, communication plans, and readiness for implementation were among the topics discussed. LTCFs received information and **guidance from the research team to prepare for the implementation**. Once the LTCFs started with the INTERCARE model, they had a one-month adjustment period to adapt to the new way of working, particularly for the INTERCARE nurses in their new roles. The INTERCARE research coordinator **provided ongoing telephone support to address questions and discuss the study's progress**. **In-person meetings were held every two months with each participating LTCF**, involving members of the LTCF leadership teams and INTERCARE nurses. These meetings focused on **discussing the implementation of the model**, identifying **barriers and facilitators**, and addressing **specific resident situations**. The INTERCARE nurses also received **coaching sessions in the LTCFs** to enhance their **leadership skills and expertise in handling complex resident situations**. These strategies aimed to support LTCFs in **effectively implementing the model** and addressing any challenges that arose. The full list of implementation strategies can be found in the second national _report_.

After the study ended, **10 out of 11 participating LTCFs planned to continue with the INTERCARE model, with the INTERCARE nurses retaining their positions**. Throughout the study, meetings were held with the LTCFs **to discuss the sustainability of INTERCARE**. Results from the study and experiences with implementation strategies were shared, and discussions were held regarding the future of the INTERCARE nurse-led model. A closing meeting was held online, where the LTCFs shared which **core components were still in place** and discussed **barriers and facilitators for continuing the model**. The meeting also focused on **addressing the reduction of unplanned hospitalisations** in specific situations, such as after a resident has fallen, and potential next steps for training and decision-making pathways.

Overall, **implementation science provides a framework and strategies to support the successful implementation** of evidence-based practices or interventions, such as the INTERCARE model in LTCFs. By utilising these strategies, the aim is to improve the quality of care and outcomes for residents in LTCFs.

Chapter 3 – **INTERCARE's success**

Clinical and staff outcomes

During the INTERCARE study, implementing the INTERCARE model **significantly reduced unplanned hospital transfers** in the participating LTCFs (Zúñiga et al., 2022). The participating facilities showed a **strong commitment to reducing hospitalisations**, contributing to the model's success. INTERCARE nurses played a crucial role in avoiding hospital transfers by **implementing advance care planning (ACP), coordinating care within the LTCFs**, and **serving as the main contact for complex situations**. Reflection meetings were conducted for each unplanned transfer, and it was found that onsite clinical **examinations by physicians or specialist practitioners** could further help reduce unplanned hospital transfers. Combining better **access to healthcare professionals, training in ACP**, and **diagnostic and treatment resources** can improve care quality and contribute to reducing unplanned transfers. ACP as one of the core components of the INTERCARE model, was introduced in most participating LTCFs and required the LTCFs to document residents' preferences regarding resuscitation, hospital transfers, and treatment with antibiotics in should their health status deteriorate. Whilst it took some time to introduce the component of ACP in most facilities, **the usage of ACP had an important role in the reduction of unplanned transfers in the INTERCARE study** (Guerbaai et al., 2023).

Physicians had varying experiences with the implementation of the INTERCARE model. Some noticed improvements in the communication and professional skills of nurses, while others did not feel much change. INTERCARE nurses were described as competent and skilled, and their **collaboration with physicians was based on partnership and shared goals**. A survey among registered nurses and licensed practical nurses showed that factors like **reciprocal learning, supportive leadership, and organisational readiness for change influenced interprofessional collaboration** (Plácido, 2021). LTCF staff experienced **a slight improvement in job satisfaction** following the implementation of INTERCARE, with a **decrease in their intention to leave their current positions**. This positive change occurred even though job satisfaction was already at a high level prior to the start of INTERCARE.

Staff self-efficacy was high in handling acute situations and supporting residents and relatives, although there was room for improvement in assessing and measuring polypharmacy. A health economic evaluation showed differences in costs and time to implement the INTERCARE model across LTCFs, with **the model being more costly but more effective in reducing hospitalisations than usual care** (Bartakova et al., 2022). Participating **LTCFs reported clearer processes, decreased staff turnover, and increased satisfaction among residents and their caregivers**. However, direct feedback from residents and relatives was not collected during the study.

Implementation outcomes

Implementation science focuses on the systematic integration of evidence-based interventions into policy and practice. Its goal is to bridge the gap between knowledge and action by identifying and addressing barriers to the adoption of proven health interventions (Bauer et al., 2015). By measuring **implementation outcomes, barriers and facilitators, researchers can evaluate the effectiveness of interventions and gain insights into why they succeed or fail** (Curran et al., 2012; Proctor et al., 2009).

The INTERCARE study measured **four implementation outcomes**: adoption, fidelity, acceptability, and feasibility. These outcomes provide information about **the implementation process and the conditions necessary for clinical effectiveness and service outcomes**. The study found that all eleven LTCFs implemented INTERCARE, resulting in **100% adoption**. **Acceptability and feasibility** were measured using the "Acceptability of Intervention Measure" (AIM) and the "Feasibility of Intervention Measure" (FIM) (Weiner et al., 2017). The study also assessed **implementation fidelity**, which measures the extent to which interventions are delivered as intended (Guerbaai et al., 2023).

The INTERCARE study specifically **focused on the acceptability and feasibility of evidence-based tools used by LTCF staff to reduce unplanned hospitalisations**. Questionnaires and focus group interviews were conducted with LTCF staff to gather their perspectives. The study found that the **ISBAR instrument and the INTERCARE nurse role were widely accepted and feasible**, while the **Stop&Watch instrument had lower acceptance rates** (Basinska et al., 2022). Factors such as **information provision, daily support, ease of use, and usefulness** influenced the success of the implementation of the core components of INTERCARE (Basinska et al., 2022) with recommended constant daily support from designated and trained individuals at the organisational and unit levels to optimise implementation processes. Assessing fidelity to the INTERCARE intervention provided valuable insights into its implementation and impact on reducing unplanned hospitalisations.

Higher fidelity scores were associated with lower rates of unplanned hospitalisations, particularly for ACP (Guerbaai et al., 2023). The study also highlighted the importance of **collaboration with in-house physicians and the need for nurses to work in extended roles** (Guerbaai et al., 2023). To improve future studies, incorporating observational elements to better understand how LTCFs implement INTERCARE and adjust along the way would be beneficial. Regarding the evaluation of implementation strategies, a survey with LTCF leadership and INTERCARE nurses identified **ongoing project support as the most important implementation strategy**.

Chapter 4 – **Future steps**

The INTERCARE study **successfully achieved its clinical and implementation outcomes**, exceeding expectations. INTERCARE nurses played a **central role and were highly accepted and valued by LTCFs**. The COVID-19 pandemic further highlighted the importance of INTERCARE nurses in providing training and support for hygiene measures. **Challenges faced included changes in leadership, staff turnover, and workload for INTERCARE nurses. Physician involvement varied among LTCFs**, and their **support was crucial** for implementing core components such as ACP. Regular communication with LTCF leaders was seen as vital for sustainability. Overall, the study demonstrated **the benefits and potential of the INTERCARE model**.

The INTERCARE model was developed to reduce unplanned transfers in LTCFs. It followed principles of implementation science and **showed successful implementation and clinical effectiveness**. However, further analysis is needed to understand the reasons behind its success, potential improvements for scaling the model up and future models of care. **Additional research is necessary to determine the most effective implementation strategies and adapt them to different LTCFs**. Evaluating implementation fidelity and **involving residents and relatives in studies like INTERCARE are important considerations**. Targeting specific types of transfers and using algorithms for assessing hospital admissions could further improve care processes in LTCFs.

LTCFs in Switzerland face challenges in recruiting and retaining skilled staff, affecting care quality. Programs like INTERCARE can help, but long-term sustainability is still uncertain. Access to timely medical assessment and **role boundaries for nurse experts are also areas needing clarification**. Switzerland's **decentralised healthcare system poses challenges** for implementing expanded roles like Advanced Practice Registered Nurses (APRN). **INTERCARE provides a solution for LTCFs, policymakers, and stakeholders seeking to strengthen geriatric expertise and reduce transfers**. INTERCARE can be **implemented alongside the future introduction of APRNs**, serving as a steppingstone for their implementation.

Chapter 5 – **Recommendation and conclusion**

Policymakers and stakeholders should focus on **attracting and retaining nurses with additional training for LTCFs**. This can be done by incorporating more geriatric training in nursing curriculums and creating attractive learning environments in LTCFs for undergraduate nurses. **Improved salaries, working conditions, and innovative models like INTERCARE** can also make LTCFs more appealing. Recognising and supporting the skills of RNs and nurses in expanded roles is crucial, with opportunities for training and coaching provided. **Strengthening partnerships between LTCFs, hospitals, GP practices, and emergency departments is necessary** to address readmissions, improve communication and information exchange, and develop appropriate discharge care plans. Leadership support and involvement, particularly from LTCF unit managers, is vital for the successful implementation and sustainability of new nursing roles. Actively involving local stakeholders is important to communicate about the INTERCARE model and to integrate and facilitate the new INTERCARE nurse's role.
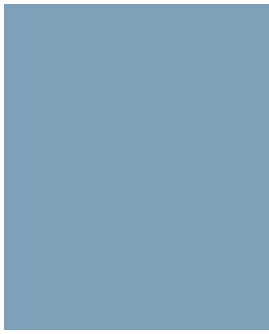
List of abbreviations

ACP   *Advance Care Planning*
AIM   *Acceptability of Intervention Measure*
APRN   *Advance Practice Registered Nurse*
CGA   *Comprehensive Geriatric Assessment*
FIM   *Feasibility of Intervention Measure*
GP   *General Practitioner*
INTERCARE   *Improving INTERprofessional CARE for better resident outcomes*
INTERSCALE   *Sustainable improvement of INTERprofessional care for better resident outcomes:*
               SCAling up an Evidence-based care model for LTCFs
ISBAR   *Introduction, Situation, Background. Assessment, Recommendation*
LTCF   *Long-Term Care Facility*
RN   *Registered Nurse*

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