Nordic Council of Ministers

A NORDIC FRAMEWORK **FOR PATIENT SAFETY KNOWLEDGE AND SKILLS**

Competence areas for safe healthcare

Sosiaali- ja terveysministeriö

Asiakas- ja potilasturvallisuuskeskus
Klient- och patientsäkerhetscentret

Embætti landlæknis

Contents

PART 2

Part 1

Development of a Nordic framework for patient safety knowledge and skills

1. Introduction

1.1. About the report

This report summarises the findings from a joint Nordic project with the aim of developing a **Nordic framework for patient safety knowledge and skills**. The report consists of two parts (1 and 2) that can be used and distributed separately.

- PART 1 Development of a Nordic framework for patient safety knowledge and skills: Part 1 contains background to the project, a brief overview of the patient safety literature, a summary of best practices of patient safety education, and a review of patient safety education in the Nordics as well as reference countries. In addition, part 1 contains eight joint positions on the Nordic framework from the participating authorities in the Nordic countries.
- PART 2 Competence areas for patient safety: Part 2 contains 15 competence areas for patient safety ("the framework"). For each competence area, key components and descriptions are provided.

The report can be used in all Nordic countries as a tool for planning and evaluating contents of basic and further education and training of social and healthcare professionals. It encourages sharing experience, good practices, and methods according to the goals of the Nordic Council of Ministers.

The report was drafted by a project team of four patient safety experts from Finland, Norway, and Sweden. The final report was approved by a steering group of patient safety officials from all Nordic countries.

1.2. About the project

Background

The WHO Global Patient Safety Action Plan 2021-2030 encourages all countries to implement a patient safety curriculum to the education of all healthcare professionals. The WHO Patient Safety Curriculum (WHO, 2011) has identified 11 key topics to be covered. The curriculum was initially based on the Australian Patient Safety Education Framework (Australian Council for Safety and Quality in Health Care, 2005).

The WHO Patient Safety Curriculum introduces the concept of patient safety (1) itself. The importance of applying human factors (2) describes the interaction of workers within the work system of healthcare, and how specific internal factors (knowledge, skills) and external factors (e.g. stress, ineffective communication and pressure) may be associated with adverse events. Understanding systems and their complexity (3) is important. System failures and patient harm can result from factors originating from several different levels (the patient, the task, the individual, the team, the tools, the management and organization) within the healthcare system. Being an effective team player (4) demands communication and teamwork to involve patients and their carers, as well as interdisciplinary collaboration to ensure high quality care. Learning from errors (5) requires ability to see systems and failures within them and to communicate incidents to colleagues. To manage clinical risk factors (6), one needs to understand them, and the ability to use quality improvement tools (7) allows for closing the loop after adverse events. Engaging with patients and their caregivers (8) is essential for optimizing safety. This includes behaving ethically and appropriately and being open with patients about adverse events. Infection prevention and control (9) identifies potential hazards and healthcare associated with infections particularly through the application of standard precautions. Invasive procedures (10) present a particularly high risk to patient safety; harm can be reduced using checklists and standard operating procedures. Medication safety (11) addresses the risks associated with all the phases of medication use, particularly for different age groups, high hazard medications and transitions of care. (See also Wu & Busch, 2019.)

The World Health Organization (WHO) (2021, V) defines patient safety as: "A framework of organized activities that creates cultures, processes, procedures, behaviours, technologies and environments in healthcare that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely and reduce the impact of harm when it does occur." The benefits of having a strategic and coordinated approach to patient safety, addressing the common causes of harm and the approaches to preventing it, have been recognized by policymakers and political and health leaders worldwide. Patient safety is considered as everybody's business and requires the active participation of many key partners: from patients and their families to governmental, nongovernmental and professional organizations (WHO, 2021).

WHO's (2021) Global Patient Safety Action Plan has seven strategic objectives (SOs). Two of the SOs are connected to the importance of patient safety knowledge and skills. The first is to "Inspire, educate, skill and protect every health worker to contribute to the design and delivery of safe care systems" (SO5). The second one is to "Ensure a constant flow of information and knowledge to drive the mitigation of risk, a reduction in levels of avoidable harm, and improvements in the safety of care" (SO6). There are also two guiding principles of the action plan implementation that are connected to this project: "Use both scientific expertise and patient experience to improve safety" and "Instil a safety culture in the design and delivery of healthcare". These strategic objectives and principles highlight the importance of patient safety education, skills, knowledge and expertise of workers, as well as safety culture.

Stefan Lindgren, President of the World Federation for Medical Education has stated that "Patient safety is a core attitude and thus needs to be introduced early and then reinforced throughout postgraduate education and continuing professional development." However, schools in the health professions, including medicine, nursing, pharmacy, dentistry and others, provide limited education on patient safety. (Wu & Busch, 2019, n.a.) According to Wu and Busch (2019), there is accumulating evidence that education can help to improve patient safety and healthcare quality. The translation of patient safety science into safe practice is also a highly applied activity. Major reforms will be needed to incorporate patient safety into the curricula of professional schools and training programs.

Today's professional landscape requires the provision for ongoing learning relevant to evolving workplace requirements. This is particularly the case for professionals working in safety critical industries, including social care and healthcare who make decisions with significant consequences every day. It is increasingly recognised that professionals learn, in a way that shapes their practice, from a diverse range of activities. Learning must therefore be active, social, and situated within the sphere of professional responsibilities, contexts, and groups. (Holdsworth et al., 2022.)

According to Fernandez et al. (2012), there is agreement that competence is composed of knowledge, skills and other components. However, there are different views about utilizing these "other components". One view specifies that competence involves selecting required components according to specific situations. A second view highlights the synergy that results from the use of a combination of components in a given situation.

Four basic conditions are regarded as essential for achieving safety in a community. Safety promotion is a process leading to the development and maintenance of those basic conditions. Safety results from a complex process in which humans interact with their physical, social, cultural, technological, political, economic, and organizational environments. The optimum level of safety requires that individuals, communities, governments and others create and maintain the following conditions: A climate of social cohesion, peace and equity between groups that protects human rights and freedoms; the respect of the values of individuals as well as their physical, material and psychological integrity; the prevention and control of injuries and other consequences or harm caused by accidents; and the provision of effective measures to ensure the presence of the three previous conditions. (Maurice et al., 2001.)

In the safety context, learning from past accidents and incidents has formed a key part of individual professional learning, but there is significant room for improvement when it comes to learning from accidents and other types of learning linked to safety outcomes. To make informed decisions in complex situations, it is critical to have the required competence. In addition, safe outcomes are also a matter of professional judgment in these complex, uncertain circumstances. (Holdsworth et al., 2022.)

Knowledge and skills

The Nordic countries differ from average WHO member countries. Therefore, the learning objectives for patient safety should be evaluated from the perspective of Nordic societies and healthcare systems.

Furthermore, patient safety issues have evolved since the WHO Curriculum was first published over ten years ago. In the Nordic countries, the ageing population, advanced level of technologies and increasing use of various medical devices as well as digitalization of services are accompanied by various safety issues not covered in the universal patient safety curriculum.

Increasing numbers of healthcare workers come from abroad, bringing diversity in the basic skills, knowledge and attitudes of workers. The basic and continuous education and training of health professionals need to meet the challenge of variation in safety culture and behaviours. Patient safety skills should be integrated in the skill set of all who work in social care and healthcare.

Digital and remote services are being promoted in all Nordic countries. However, their use brings along various new demands for safety, e.g. abilities and knowledge required to use information and communication technologies effectively. Digitalization and electronic health are associated with cybersecurity and data safety issues. Evolved medical technology and increasing complexity of medical devices cause user related safety challenges. These new requirements need to be met.

The need for social care and healthcare services among elderly and other fragile individuals increase system-related complexity which is a known risk factor for patient safety.

All these aspects require attention to the contents of patient safety education and training and how to develop adequate and equal competencies among healthcare workers across the Nordic countries. The ultimate goal of this project is to ensure improved patient safety for those who need social care and healthcare services in the coming years.

1.3. Methodology

The project was conducted in four steps:

- Step I: Describing international best practices
- Step II: Benchmarking patient safety educational systems in Nordic countries
- Step III: Development of a joint Nordic framework for patient safety knowledge and skills
- Step IV: Assessment

Organization of the project:

- The Ministry of Social Affairs and Health, Finland, served as the administrative body of the project
- A project team of four patient safety experts from Finland, Norway and Sweden collected information and analysed data, and wrote the draft for the report.
- A steering group of patient safety officials from all Nordic countries, Denmark, Finland, Iceland, Norway and Sweden contributed with decision making regarding the project activities, output and outcome.
- A reference group consisting of a Nordic collaboration network with representatives from Denmark, Finland, Iceland, Norway and Sweden as well as representatives from Faroe Islands, Åland, Estonia and Lithuania gave advice and accepted the final product.

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2.

Patient safety education in the Nordics and globally

2. Patient safety education

2.1. A brief overview of patient safety literature

Introduction

Patient safety is multifactorial, multidimensional and cross disciplinary, quite opposite from the traditional stand-alone discipline (WHO, 2011). The continuously growing publication rate concerning patient safety and its complex character make it difficult to obtain a comprehensive overview of the patient safety literature. In a large-scale bibliometric analysis of the patient safety literature from 2014, a total of 8.480 publications were identified, of which the 1.462 most frequently cited ones were grouped into three categories: (1) magnitude of patient safety problems (42% of all included publications); (2) patient safety risk factors (31%), and (3) implementation of solutions (19%). In the visualization of patient safety related terms, five clusters were identified: (1) medication; (2) measuring harm; (3) patient safety culture; (4) physician; (5) training, education and communication (Rodrigues et al., 2014). In the decade since Rodrigues et al.'s analysis, the publication rate has increased exponentially.

Generally, there has been agreement that patient safety should be seen as avoidance of harm according to the definition of WHO:

"Patient safety is the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum" (WHO, 2010, p.22).

Lately, in its Global Patient Safety Action Plan 2021-2030, WHO has broadened its perspective on the complexity of the healthcare system, thus affecting the definition of patient safety (WHO, 2021):

"Patient safety is a framework of organized activities that creates cultures, processes, procedures, behaviours, technologies, and environments in healthcare that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely and reduce the impact of harm when it does occur" (p. 1).

This broadened perspective should have implications for patient safety education and associated study programs within healthcare and social care.

Patient safety theories and perspectives

The literature on patient safety includes several textbooks mostly developed for the hospital context, yet some of them are also generic in nature. One of the most acknowledged is Charles Vincent's book *Patient Safety* (Vincent, 2006) while Donaldson et al.'s *Textbook of patient safety and clinical management* is one of the more recent contributions (Donaldson et al., 2021).

The system perspective

The major theoretical perspective within patient safety is the system or socio-technical perspective, situating the individual patients and healthcare workers in a broader context in which adverse events are seen as a consequence of more or less defined factors at micro, meso and macro levels of the healthcare system.

Most safety theories today include the system perspective in one way or another as the basis for their approaches. This means that they recognize that adverse events include a complex set of relationships of underlying and direct factors or causes. Two of the most recognized and applied system models in healthcare are James Reason's Swiss Cheese Model (Reason, 1990) and Reason's and Vincent's organisational accident model (2010). Following from these, the root cause analysis has been developed as the most common method for investigation of adverse events in healthcare (Vincent et al., 2013).

Human Factors

The human factors perspective applied to healthcare aims to understand the 'fit' between a patient, healthcare workers, work tasks, equipment, and the surrounding environment (Catchpole, 2013; Reason, 1995). This work system can include learning styles, behaviours and values, leadership, teamwork, the design of equipment and processes, communication, and organizational culture. It allows us to understand how people perform under different circumstances and why adverse events happen. The most used human factors model in healthcare is the System Engineering Initiative for Patient Safety (SEIPS). It is a system-based approach for understanding specific work processes in their specific context (Carayon et al., 2006). It positions the process in a work system in which persons, internal environment, tasks, tools, technology, and organization interact to produce specific outcomes.

Safety culture

Safety culture has developed to be one of the major areas of focus within patient safety in healthcare organizations. However, safety culture is a complex phenomenon which interacts with multiple factors, making it difficult to define, measure and improve (Sammer et al., 2010). Interactions with for example leadership, communication and teamwork are prevalent. One of the most acknowledged models of safety culture is James Reason's five dimensions of a flexible culture, a learning culture, an informed culture, a just culture, and a reporting culture (Reason, 1997). Underlying these dimensions is the fostering of mutual trust and shared values among healthcare workers (Groves, 2014). Different measures have been developed for patient safety culture and/or climate, predominantly in the forms of self-reported surveys.

Resilience in healthcare

Resilience is an alternative perspective that builds on several of the principles in the system perspective, but which differs in the way that focus is directed towards events that go well, rather than adverse events (Hollnagel et al., 2013). The underlying principle is that by understanding how healthcare services work in practice (work-as-done), one will understand the situational conditions leading to either successful work tasks or work tasks leading to adverse events. This gives the healthcare system a better opportunity to repeat work practices that produce good results rather than a "negative" emphasis on deviations and adverse events. This is particularly important in situations that involve challenges or changes ranging from how the healthcare system handles a pandemic to how a patient who has been exposed to an adverse event could be supported. Resilience thus builds adaptive capacity at all levels of the healthcare system to increase the possibility to handle variation and changes (Wiig et al., 2020).

Patient and family engagement

Over the last decade, patient and family engagement has emerged as an increasingly important approach for maintaining and improving patient safety. Partnerships and involvement are issues highlighted at global and national levels (WHO, 2019). Engaging patients and families who have experienced adverse events is argued to provide unique insights and learning to improve safety. These experiences are needed to accelerate patient safety efforts at all health system levels. A variety of guidelines and frameworks have been developed to support patient and family engagement in patient safety, such as for example the Agency for Healthcare Research and Quality's guide to help patients, families, and health professionals work together as partners to promote improvements in care (AHRQ, 2017). A more recent resource is the World Health Organization's Patient Safety Rights Charter aiming to establish guidelines and principles to safeguard the rights and safety of patient globally under the slogan "Elevate the voice of patients!" (WHO, 2024).

Several systematic literature reviews also support the work on patient and family engagement in patient safety. Park & Giap (2019) found that most participants expressed their willingness to engage in or support patient and family engagement. However, existing gaps and barriers in implementing patient and family engagement were identified. An implication is that policymakers should issue guidelines for implementing patient and family engagement in healthcare systems to enable healthcare providers to improve patient safety appropriately and effectively. Newman et al. (2021) question whether patient engagement interventions work across different patient groups. They concluded that collaboration between staff and patients is essential in the development and implementation of strategies for patient safety during direct care. Insufficient details about participant characteristics and patient-provider interactions limit recommendations for practice change.

Digital and remote healthcare

In 2018, digital technologies were recognised by the WHO General Assembly as an important facilitator of all sustainable development goals. This elevated the role of healthcare provided through mobile phones, or mHealth, decision support and virtual approaches to capability building across low-resource health systems (WHO, 2018). Patient safety is therefore inextricably linked to digital transformation and its promise to contribute to a safer health system (Flott et al., 2021). Information on the safety of digital and remote healthcare systems is inconclusive. There are indications that patient safety risks exist at a variety of care levels, but the extent and consequences of those risks are not fully understood. It has been suggested that knowledge is lacking because risks, problems and failures to do with the safety of digital and remote healthcare are frequently not reported as such (Guise et al., 2014; WHO, 2024A). A systematic review on digital health competencies among healthcare professionals concluded that there is a need to expand research on psychological and emotional elements and the ability to use digital technology to self-learn and teach others (Longhini et al. 2022).

Transitions and continuity of care

Care transitions have been identified as one of the major challenges of patient safety as they often involve boundary-spanning activities across organizations and care levels (Aase & Waring, 2020). The safety of care transitions is influenced by a range of patient-centered, communicative, collaborative, cultural, competency-based, accountability-based and spatial components. The continuity of care across specialist and primary care is the major driver for care transitions, and improvement efforts require a multifaceted approach (WHO, 2016).

So far, there is no conclusive evidence for any specific measures over others in improving care transitions, yet measures that cross care levels and are directed at older patients with complex care needs are promising (Laugaland et al., 2012). When implemented at the right time and in the right way, care transitions enhance care delivery, improve patient outcomes, and lower the costs (Carr, 2018). The role of informal caregivers as "advocates", information brokers, and support is prominent in care transitions for older patients with complex care needs (Dyrstad & Storm, 2017).

Mental health

In a systematic review, Thibaut et al. (2019) conclude that patient safety in mental health is under-researched in comparison to other healthcare settings. They identified ten categories characteristic of patient safety in mental health: (1) violence and aggression, (2) coercive interventions, (3) safety culture, (4) self-harm, (5) safety of the physical environment, (6) medication safety, (7) unauthorized leave, (8) clinical decision making, (9) falls, and (10) infection prevention and control. The complexity of patient safety in mental health, including the importance of wider organizational safety culture, are important issues to consider. Patients in mental health settings face some of the similar risks (e.g., medication errors, infections) as in other healthcare settings. However, behaviours associated with mental health problems such as self-harm and the measures taken to prevent these (e.g., restraint) may result in additional risks to the patients. The dilemma of maximizing patient safety and maintaining patient autonomy is also characteristic in the mental health setting (Thibaut el al, 2019).

Safety improvement

A large proportion of the literature on patient safety is directed towards improvement in the forms of developing, implementing, and testing measures such as checklists, medication reconciliation, training, or standardization efforts such as guidelines. Vincent and Amalberti (2016) outline a portfolio of five strategies for improving safety in healthcare:

- Safety as best practice by improving clinical processes and standards.
- Improving healthcare processes and systems by intervening to support individuals and teams, and improve working conditions and organizational practices.
- Risk control by placing restrictions on performance, demand or working conditions.
- Improving capacity for monitoring, adaptation and response.
- Mitigation by planning for potential harm and recovery.

These five strategies are each associated with a family of interventions. The first two strategies aim to optimize the care provided to the patient. The three other strategies are focused on the management of risk and the avoidance of harm. Recently, research is pointing towards multi-modal measures for improving patient safety rather than single, standardized measures (Dixon-Woods, 2019).

Teaching and learning patient safety

Patient safety and quality improvement education plays a critical role in providing healthcare professionals with knowledge, skills and attitudes to improve healthcare services and avoid harm. Furthermore, there is a need for education at all levels of the healthcare system including stakeholders such as governments, healthcare facilities and services, leaders, healthcare workers, patients and carers, students, and the public (WHO, 2021). Furthermore, theory plays an important role in such educational programs. However, its use in patient safety and quality improvement education has yet to be fully exploited. Goldman et al. (2021) undertook a scoping review to examine the use of theories and found that they fell into two broad categories: learning theories and social science theories. None of the studies included in the review used specific patient safety theories.

There is a large amount of literature regarding lessons to be learned from accidents (WHO, 2020). Other published studies focus on training methods such as simulation (Bienstock & Heuer, 2022). In a systematic review, Alanazi et al. (2017) concluded that the use of simulation in student education significantly improved knowledge, skills, and self-confidence. They introduced a quality improvement framework of best practice components for application in simulation research: 1) study design, 2) debriefing, 3) integration of IPE values, 4) outcome measures, and 5) student satisfaction and information retention (Alanazi et al. 2017). Another systematic review regarding in situ simulation concluded that in situ training improves patient outcomes either in isolation or within a larger quality improvement program (Goldhstein et al.,2020). Simulation training may also enhance students' integration of theoretical and practical knowledge and their ability to reflect as well as to give and receive feedback (Jeffries & Rodgers, 2021).

Human factors training differs from traditional clinical training in that the focus is on the cognitive and interpersonal skills needed to effectively manage a team-based activity rather than the technical knowledge and skills required to perform specific operations. Furthermore, health professional educators and institutions should ensure education and training on patient safety to impact the safety culture in medical settings (Tocco Tussardi et al. 2021).

Holdsworth et al. (2021) present a learner-centred framework that can be used to develop professional learning for safety that is grounded in day-to-day work practices and professional context needs. The framework aims to move away from the limitations that have been found with the current professional development approaches to enhance learner-centred professional learning. The framework was developed and used in the context of engineering practices regarding safety, but because the framework encourages learning to be designed based on workplace contexts, it is applicable across a range of training needs and professions.

A systematic review regarding healthcare students' and young professionals' attitudes showed clear positive patient safety attitudes in some areas (e.g., teamwork climate, error inevitability), but more negative perceptions in other domains (e.g., safety climate, disclosure responsibility). Women tended to report more positive attitudes.

Different programs for training and learning teamwork in healthcare exist, one of the most common being the TeamSTEPPS program (Team Strategies and tools for better team performance and patient safety). TeamSTEPPS is a knowledge-based team training program focusing on team structure and four team competencies: Communication, Management, Situation monitoring, and Mutual support. (AHRQ, 2012).

Another way of training and learning patient safety in the future may be with artificial intelligence (AI). A systematic review of 53 studies indicated that AI-enabled decision support systems, when implemented correctly, can aid in enhancing patient safety by improving error detection, patient stratification, and drug management. Analysis identified two essential findings: (1) the lack of a standardized benchmark and (2) heterogeneity in AI reporting (Choudhury & Asan, 2023).

2.2. Best practices of patient safety education

There are very few international benchmark studies or reports on patient safety education on a macro level. The international benchmarks that have been identified concern to what extent the WHO curriculums have been implemented in different countries. On a meso level, e.g. educational institutions, there are many studies available regarding e.g. patient safety education development. On a micro level there are even more, methods and interventions.

Implementation of the WHO curriculum

In April 2023, the WHO published an interim report regarding implementation of the Global Patient Safety Action Plan 2021–2030 (World Health Organization 2023). The purpose of the interim report was to describe progress made in achieving the strategic objectives and strategies of the global action plan. The foundation for the interim report was a survey to 194 WHO member states and 3 associate members. In total 135 countries responded, out of which 102 completed the survey.

One section of the interim report concerns patient safety education. The main results from the analysis of the 102 responses are summarized below:

- ~80 % have not incorporated a patient safety curriculum in education programs or courses for healthcare professionals.
- ~50 % have some elements of patient safety included in curricula.
- ~90 % have inadequate numbers of trainers to provide patient safety training.
- ~25 % of countries had defined the competencies required for each category of professionals for patient safety. Inclusion of patient safety in educational curricula was most common in nursing education programs (66%).
- ~10 % have linked core competencies in patient safety with licensing and relicensing requirements for health-care professionals.
- ~20 % have linked required competencies with credits for continuing professional development.

There are several methodological concerns with using the survey results for benchmarking between countries. These include e.g. selection bias in which 102 of the 194 invited countries that responded to the survey, and that different countries probably use different definitions or compare with different "base lines" when they answer questions regarding what parts of patient safety education and training that are "Not initiated"/ "Partially / In-process" / "Implemented".

The low adaption of the WHO patient safety curriculum is in line with a study on regulation and current status of patient safety content in pre-registration nurse education in 27 countries. The authors conclude that the WHO guidelines for teaching patient safety are underutilized in nurse education, but could offer a structure and standard (Kirwan, Riklikiene et al. 2019).

Barriers to implementing the WHO curriculum has been studied in low and middle-income countries (Ginsburg, Dhingra-Kumar et al. 2017). The study showed that the majority of organizations that responded to the researchers' survey were not yet delivering the curriculum. With regards to implementation barriers the most frequently reported were:

- Insufficient training to enable faculty to implement the patient safety curriculum (67 %)
- Lack of governmental commitment to the patient safety curriculum, e.g. ongoing financial support (43 %)
- Lack of organization-level commitment to implementation of the patient safety curriculum (43 %)
- Poor fit between the patient safety curriculum and the broader political and economic context, such as regulation of health professionals and how faculty are paid (38 %)
- Lack of buy-in from stakeholders internal to the organization (38 %)
- Poor fit between the patient safety curriculum and the assessment system in training settings (e.g. the university) (33 %).
- Poor coordination between the ministry and other organizations around implementation of the patient safety curriculum
- Lack of faculty enthusiasm/meaningful participation in implementation of the curriculum

In another study, the implementation of the multi-professional patient safety curriculum was field tested with 12 participating universities across the six WHO regions. The aim of the study was to assess the effectiveness of the curriculum for teaching patient safety to undergraduate and graduate students in a global variety of settings (Farley, Zheng et al. 2015). The included universities were:

- Argentina: University of Del Salvador, School of Nursing, Faculty of Medicine, Buenos Aires
- Egypt: Cairo University, Faculty of Oral and Dental Medicine, Cairo
- Ethiopia: Gondar University, College of Medicine and Health Sciences, Gondar
- Greece: University of Athens, School of Dentistry, Athens
- India: All India Institute of Medical Sciences, Center for Dental Education and Research, New Delhi
- Jordan: Jordan University of Science and Technology, Faculty of Nursing, Irbid
- Malaysia: United Nations University – International Institute for Global Health, Department of Nursing and Department of Community Health, the Faculty of Medicine and Faculty of Pharmacy, Universiti Kebangsaan Malaysia, Kuala Lumpur
- Mexico: National Autonomous University of Mexico, School of Dentistry, Mexico City
- The Philippines: University of the Philippines, College of Nursing and College of Medicine, Manila
- Sri Lanka: University of Peradeniya, Department of Nursing, Faculty of Allied Health Sciences, Peradeniya
- UK: University of the West of Scotland, School of Health, Nursing & Midwifery, Paisley, Scotland
- Zimbabwe: University of Zimbabwe, College of Health Science, Harare

The disciplines of the students taught using the guide where nursing (7 of 12 universities), dentistry (5), midwifery (3) and pharmacy (1).

The stakeholders interviewed as part of the study were overall positive regarding the effectiveness of the curriculum guide in supporting their patient safety teaching efforts (Farley, Zheng et al. 2015).

Overview of patient safety education providers around the world

In 2014, Leotsakos et al. published an article on the topic "Educating future leaders in patient safety" (Leotsakos, Ardolino et al. 2014). The article contained a list of examples of national and global initiatives offering patient safety courses to healthcare providers (see table below)

Institution	Country	Initiative
National Health Service for Scotland	Scotland, UK	NHS Scotland recommends multi-professional group meetings and provides tools to educate healthcare workers in patient safety.
National Patient Safety Foundation	USA	The Foundation has its own patient safety curriculum with Continuing Medical Education (CME) modules to complete.
Australian Commission on Safety and Quality in Health Care	Australia	The Council has a syllabus for education and training in patient safety.
Canadian Patient Safety Institute (CPSI)	Canada	CPSI runs patient safety course for healthcare leaders.
Betsy Lehman Center for Patient Safety and Medical Error Prevention	USA	This Center was established by the Massachusetts Department of Public Health and sponsors patient safety education and training programs.
Parliament, UK	UK	The Parliament recognizes the need for incorporation of education in patient safety for all healthcare providers.
Agency for Healthcare Research and Quality (AHRQ)	USA	AHRQ provides a wealth of information, tools and resources for training in patient safety.
Society for Quality in Healthcare (SQHN)	Nigeria	SQHN facilitates the continuous improvement of quality and safety in healthcare in Nigeria through education and accreditation.
Council for Health Service Accreditation of Southern Africa (COHSASA)	South Africa	Through its SafeCare initiative, COHSASA assists African healthcare facilities to provide safe and quality healthcare by providing technical resources, training and financial incentives.
World Organization of Family Doctors (WONCA)	Global	WONCA, provides resources and training for Quality and Safety in family medicine worldwide.
Ministry of Health	Singapore	Patient safety education is provided to hospital healthcare providers.
Patient Safety Education Project (PSEP)	Global	An international collaboration for the education of teams of healthcare professionals and administrators in patient safety issues.
Institute for Healthcare Improvement (IHI)	USA	The 'Open School' for Health Professions is a hub of free online courses on quality improvement topics and patient safety.
Organization for Safety and Prevention (OSAP) and the International Dental Federation (FDI)	Global	Both professional organizations address issues related to the WHO Patient Safety Curriculum Guide and deliver educational sessions on patient safety.
International Alliance of Patients' Organizations (IAPO)	Global	IAPO provides patient safety resources and a toolkit for patients and health-care professionals.
World Health Organization's Patient Safety Program (PSP)	Global	PSP provides webinars and educational materials in its quest to strengthen and improve patient safety research in all countries around the world.

2.3. Review of guidelines for patient safety education in reference countries

Review method

Here, the WHO safety guidelines are presented in the form of a schematic tool, which were used to navigate through patient safety materials of selected countries. The aim was to see whether the selected countries mentioned the same topics discussed in the WHO guidelines, and if something not mentioned by WHO was covered in the safety materials of each country. The studied countries were the United Kingdom (for their public sector, NHS), NHS of Scotland, Australia, Canada, and the Netherlands.

The WHO safety guidelines were divided into a few subcategories to see if the countries had mentioned various aspects or dimensions of any of the guidelines (for a catalogue of the questions and search words see appendix A). The structure and arrangement of the framework materials for every country vary greatly and thus a fair comparison between them is not simple. It is also important to note that this analysis is subjective and thus it is possible that a topic was indeed mentioned, even though it was not found in the materials.

Review results

Australia was first to launch a safety framework in 2005, only three years after the WHO had first encouraged every country of the world to develop their own safety norms and standards. Closely after were Scotland and Canada, both publishing their first frameworks in 2008. The Netherlands wrote theirs in 2013 and finally the UK in 2019. Most countries define and explain terms and nomenclature associated with safety, the only exception being the Netherlands, where no glossary was found in the materials.

All countries discuss patient safety in general and all but the Netherlands mention going from a blame culture to system error thinking when talking about safety. The Netherlands differs the most also when it comes to mentioning evidence-based safety practices; all other countries refer to literature and science, but this is not mentioned in the Dutch materials. Australia, the UK, and Scotland mention general human factors in safety, but every country mentions staff well-being as a human factor component. Every country except for Scotland mentions the importance of understanding complexity in safety, but only the UK and Australia mention process and system error thinking in their materials.

The importance of functional teamwork is mentioned by every country and psychological safety of staff is mentioned (explicitly or implicitly) by all. Australia, the UK, and Scotland discuss the importance of professional guidance to new tasks.

All countries except for Canada mention learning from errors, and every country emphasizes that errors must be reported according to local laws and protocols. Australia and the UK mentions never-events. Risk management is discussed by all countries except for the Netherlands. All countries also discuss quality improvement and analysis of safety reports, although to varying extents.

All countries discuss the importance of patient and family engagement in healthcare and the importance of good and direct communication. Scotland, Australia, and Canada discuss the risks and safety issues in the continuity of a patient's care. Infection safety is, quite interestingly, not mentioned by Australia or the Netherlands and only Scotland mentions hand hygiene in patient safety contexts. Surgical safety and checklists for surgery are only mentioned in Australian guidelines. Australia is also the only country to mention the importance of patient identification in healthcare. All except for the Netherlands mention medication safety and all except for Scotland mention device and equipment safety. Only Australia and for some parts Scotland mention safety in emergency situations.

All countries mention digital and data security in some form or other. The aim of the guidelines for each country varies: For the UK, they are learning modules, for Scotland, an internet platform, for Australia, a framework and not a curriculum, for Canada a written statement on safety culture, and for the Netherlands, the implementation of the framework is discussed. The target demographic of the material for every country seems to be the entire healthcare workforce in each country.

One question was whether any country mention planetary and environmental aspects when discussing safety and healthcare. Ecological sustainability is becoming more and more important in every industry and endeavour. It is thus curious that no country mentions planetary parameters in their frameworks.

Finally, a study was made on which topics each country might mention that are not listed in the WHO guidelines. Here we have some interesting findings. Scotland discusses the importance of harm reduction in restraint and seclusion practices in psychiatry as well as the issues concerning housing and homelessness and how they might present in a healthcare setting. Australia emphasizes the consequence of behaviour and values in the workplace, bullying, lifelong learning, introduction and supervision into new tasks, and the cruciality of professional and ethical behaviour in healthcare. Also, digi-health and equipment safety are mentioned in the Australian framework. Similarly, for the Netherlands lifelong learning and workplace cultural development are mentioned. Canada emphasizes interprofessional patient safety competencies and organizational learning. The Canadian framework also mentions how critical sufficient funding and personnel is.

3.

Patient safety educational systems in Nordic countries

3.1. Denmark

How is patient safety education regulated and governed?

The Danish Parliament issues laws that generally set the framework for education in the Danish education system.

Health education programs that can lead to a Danish authorization are regulated by various ministries, depending on the level of education. The Ministry of Education and Research issues orders for higher education at university level and professional bachelor level.

Health professionals educated at university level include doctors, dentists, and pharmacists. Health professionals at professional bachelor's level include nurses, physiotherapists, occupational therapists, dental hygienists, radiographers, bioanalysts (medical laboratory scientists), and midwives. The Ministry of Children and Education issues executive orders for vocational education and training. These include e.g. social and healthcare assistants and paramedics.

Each individual program at the individual educational institutions has an independent program regulation that contains a professional profile describing the knowledge, skills and competencies the student must acquire during the program.

How is patient safety education included in the national patient safety strategy/action plan?

Denmark does not have one national patient safety strategy or action plan.

What are the national patient safety learning objectives?

For health education at university level, i.e. medicine, dentistry and pharmacy, patient safety is mentioned in some, but not all program regulations.

In the program regulation for the master's degree in medicine at the University of Copenhagen, patient safety is mentioned among the competence goals: "The master's degree in medicine (MSc in medicine) aims to qualify the student to obtain the competencies within natural sciences, behavioural and social subjects as well as paraclinical and clinical subjects, which are necessary in order to be able to hold subordinate medical positions satisfactorily in terms of knowledge, skills, competencies and attitudes, including medical ethics and patient safety".

The Master's program in Public Health is a continuing education targeted at employees in the healthcare system. The program includes two electives in patient safety:

Patient safety and learning culture: Create and anchor improvements with the following learning objectives:

"The student must be able to:

- Describe models for change processes
- Discuss the role of information technology for patient safety and learning culture
- Discuss different perspectives on culture in patient safety work
- Facilitate group processes in the analysis and learning work
- Analyse which improvement project to promote patient safety will be most profitable to implement in each context
- Reflect on and assess relevant quality requirements
- Plan an improvement project in a relevant context, including planning the anchoring of this improvement
- Use communication strategically and effectively in relation to conducting patient safety work in a relevant context
- Carry out a specific project in a relevant context"

Patient safety and learning culture: Analysis of context with the following learning objectives:

"The student must be able to:

- *Explain different risk theories and methods for analysis and improvement in complex systems*
- *Gain insight into the perspectives of patients, relatives and professionals on patient safety*
- *Describe the connection between patient safety, learning culture and quality work*
- *Apply risk assessment and improvement methods in selected cases*
- *Use qualitative and quantitative methods to collect relevant data*
- *Carry out a relevant literature search*
- *Carry out stakeholder analysis and involvement in the treatment of a patient safety problem with both reactive and proactive methods in patient safety work*
- *Navigate the empirical field regarding models and theories and own role clarification*
- *Carry out a concrete project on patient safety and learning culture*"

In the executive orders for professional bachelor's programs, one of the objectives for learning outcomes is that the trained healthcare professional: "Has knowledge of methods and standards for quality assurance, patient safety and quality development and can reflect on their application".

In some, but not all individual program regulations, there are corresponding overarching learning goals about patient safety, e.g.: "The student has knowledge of and can explain methods and standards for quality assurance, patient safety and quality development" or "The student can perform, convey and take clinical leadership for patient processes, patient-perceived quality and patient safety. "

In the executive order for the education and training of social and health assistants, one of the objectives for learning outcomes is that: "The student can independently plan, initiate, evaluate and quality-assure tasks and work processes based on quality standards, service level, procedures, and patient safety".

In the program regulation, patient safety is included in descriptions of learning objectives related to several subjects, including interprofessional and cross-sector collaboration, patient rights, quality assurance, reporting of unintended events, and medication management.

How is basic patient safety competence of healthcare workers assured?

The Danish Patient Safety Authority issues authorizations to healthcare professionals. An authorization is issued based on completed training. A healthcare authorization entails a number of duties that are aimed at ensuring patient safety. An authorized healthcare professional must for example show care and conscientiousness, has a duty to keep patient records and must participate in the Danish Patient Safety Authority's supervision if it becomes relevant.

Are there differences in patient safety education between different professional groups?

The teaching of patient safety as a discipline in Danish health education programs at all levels is largely related to quality improvement and health law.

There are several textbooks on the topic of patient safety, and there are chapters dedicated to patient safety in textbooks aimed at health educations at all levels. However, the individual institutions have a high degree of autonomy regarding the specific curriculum for specific courses and education programs, which can lead to differences in the way and extent to which patient safety is taught to students in health education.

3.2. Finland

How is patient safety education regulated and governed?

Provisions on the quality of services and client and patient safety are laid down in several acts on organizing healthcare and social welfare services, healthcare, social welfare, private services, and services provided for older people.

Further statutes relevant to client and patient safety include the Act on the Status and Rights of Patients and the Act on Health Care Professionals.

The purpose of the act on healthcare professionals is to promote the safety of patients and to improve the quality of healthcare services by ensuring that healthcare professionals have the education and training necessary for the practice of the profession, other adequate professional qualifications and other knowledge and skills.

The National Supervisory Authority for Welfare and Health maintains the Central Register of Health Care Professionals for the purpose of discharging its supervisory duties under the Act on the National Supervisory Authority for Welfare and Health.

The Ministry of Education and Culture and the Ministry of Social Affairs and Health communicate tightly when it comes to the education and training of healthcare professionals.

The education of physicians and dentists in Finland follows the EU directives and is controlled by the Ministry of Education and Culture. Each university works in autonomy under the guidance of the ministry and legislation. The specialist training of specialist doctors and dentists is regulated by the Ministry of Social Affairs and Health and provided by the medical faculties of the universities.

Universities and universities of applied sciences have freedom of tuition and they are responsible for the quality and the content of the education. The Finnish Ministry of Education and Culture sets quantitative targets on higher education and advocates the development of education. The Ministry of Social Affairs and Health sets targets for specialised medical and dental education.

The parliament decides on the legislation and the annual budget allocations to vocational education and training (VET). The government decides on the development of VET in the government program. The government also makes decisions on the structure of vocational qualifications. The Ministry of Education and Culture prepares VET legislation and steers and supervises the sector. The ministry also grants the education providers' permits to provide VET. The Finnish National Agency for Education (EDUFI) designs and makes decisions on the national qualification requirements, which describe the vocational skills requirements of qualifications and units and the methods and criteria to assess learning outcomes.

Legislation also covers requirements for social and healthcare personnel (Act on Qualification Requirements for Social Welfare Professionals and Act on Health Care Professionals).

The National Supervisory Authority for Welfare and Health in Finland grants the right to practise the profession of a physician or dentist as a licensed professional, and it also grants the right to practise as a licensed medical specialist or dental specialist. Provisions on the specific training in general medical practice referred to in the recognition rules of the European Union are laid down by government decree.

The National Supervisory Authority for Welfare and Health in Finland grants the right to practise the profession of head dispenser (pharmacist), psychologist, speech therapist, dietician, pharmacist, nurse, midwife, public health nurse, physiotherapist, laboratory technologist, radiographer, dental/oral hygienist, occupational therapist, optician or dental technician as a licensed professional and it also grants the right to use the occupational title concerned.

Twentyone Wellbeing Service Counties, the City of Helsinki and the HUS-group, the service organiser of demanding specialized healthcare in Helsinki and Uusimaa region, are responsible for organizing public health and social services. Their responsibility is also to take care of and organize adequate orientation, the continuous education and workforce training.

How is patient safety education included in national patient safety strategy/ action plan?

The current Client and Patient Safety Strategy and Implementation Plan 2022–2026 will promote inclusion and engagement, measures to strengthen safety, and management of safety culture in Finland. Finland aims to become a model country in client and patient safety by 2026. This involves implementing evidence-based recommendations that benefit leadership, professionals, patients, and clients across all organizations and at all levels of operation. The ministry's practical preparatory work was supported by the Finnish Centre for Patient and Client Safety.

The strategy is divided in four priorities and each of these is further split into three objectives. In the second priority, "Thriving and competent professionals", the objective 2.1 is to "Ensure safety competence and its development throughout careers". Healthcare and social welfare professionals are committed to providing safe patient care and client services. Education and training in client and patient safety must focus on identifying and protecting against system failures while helping professionals to recognize their own role as part of overall safety. Development of basic training must be based on international recommendations.

The strategy includes an implementation plan, which is monitored using selected metrics. Among the ten strategic indicators, there is one dealing with education of patient safety (Indicator 6 / 2.1). The objective is that the contents of the WHO Patient Safety Curriculum are included in the basic training of all healthcare and social welfare professionals. The aim is that all medical and 80% of other curricula starting in 2024 correspond to the contents of the WHO Curriculum and that it is incorporated across all curricula in 2026. The success will be evaluated by a survey conducted by centres of expertise for university faculties of medicine, universities of applied sciences and other educational institutions.

What are the national patient safety learning objectives?

National Patient Safety Learning Objectives

A solid base of professional competence acquired during the basic training stage and continuing maintenance of competence throughout the career improve the safety of clients and patients. Basic training programs for healthcare and social welfare professionals should include content dealing with safety competence to support working-life skills. The best way to provide such instruction is to integrate safety as part of the core studies and practical work placements in the field of study in question. Students must be provided with sufficient orientation into safety practices at the beginning of work placement periods. Client and patient safety is not isolated from everyday work; instead, every employee is responsible for its realisation.

The Finnish Centre for Client and Patient Safety aims to enhance client and patient safety in Finnish social and healthcare through research as well as through training and networking for client and patient safety experts. It also shares information and distributes good practices and tools for client and patient safety improvement. The centre coordinates the implementation of the Client and Patient Safety Strategy, including the planning of patient safety education and training.

Medical education

Medical education in Finland consists of a 360-credit Licentiate of Medicine degree program which typically takes six years of full-time study. Five different universities in Finland offer the degree program for Licentiate of Medicine. Most of the curriculum is compulsory and attended by all degree students. The studies leading to the Licentiate of Medicine degree prepare students for practicing medicine as licensed professionals. Graduates possess the necessary competencies for various tasks within the medical profession. Throughout their careers, physicians must continually develop their professional skills.

Competence goals for newly graduated physicians in Finland have been mutually defined since early 2010's by all medical faculties. The most recent goals were approved during the meeting of the deans of all five medical faculties in 2020. They are common to all medical faculties in Finland. The shared competence goals were established to ensure that faculties have a unified perspective on the skills, attitudes, and roles of newly graduated physicians as well as how physicians should be educated and what they should be capable of upon graduation.

The essence of a physician's work lies in promoting the patient's well-being. A physician can apply their knowledge and skills competently and ethically, even in complicated and uncertain circumstances. These goals include a specific section on quality and patient safety:

- Always focus on the patient and safety
- Promote health and safety in all situations
- Predict and recognise risks and danger, analyse them openly, understand different ways to react on mistakes, learn from errors – one's own and others'
- Utilise principles of infection prevention
- Be able to describe principles on quality standards and management, be able to compare treatment results
- Know the effect of human factors on the use of medical device and software
- Know ways of improving resources and prioritisation

Nursing education

Registered nurses in Finland are educated in 20 universities of applied sciences. The nurse's education is 210 ECTS, lasting 3.5 years. The level of education is that of a bachelor's degree, EQF 6. The degree program of nursing provides qualification of a general nurse, which meets the regulation of European parliament and Council Directive and EU directive. The universities of applied sciences have autonomy in relation to curricula and thus there is no national curriculum. The WHO curriculum of patient safety is well known in universities of applied sciences and is taken into consideration while developing the curricula of social and health education. The educational curricula for nurses include core components of patient safety that were defined in collaboration between universities of applied sciences.

Competence requirements and their contents regarding patient and client safety:

- Demonstrates knowledge of key factors regarding patient and client safety
- Promotes patient safety and prevents patient safety incidents in every phase of the nursing process of the patient.
- Communicates clearly to ensure patient safety
- Takes immediate situation specific action in a hazardous situation.
- Recognises potential patient safety incidents and reports them.
- Understands how a report on patient safety incident is handled.

Vocational education and training

Practical nurses are educated in Vocational Education and Training (VET) with the level of 4 EQF in 50 secondary VET schools or institutes. For practical nurses Valvira (the National Supervisory Authority for Welfare and Health) grants the right to use the protected occupational title of practical nurse in social welfare and healthcare. The WHO curriculum of patient safety is included in the VET practical nurse's national qualification requirements as of August 1st 2024.

How is basic patient safety competence of healthcare workers assured?

According to the strategy, new employees must be provided with a comprehensive orientation program covering the workplace self-supervision or client and patient safety plan and the pharmacotherapy plan and an introduction to the organization's working methods and culture. Systematic and sufficient orientation into new duties, the new working environment and workplace devices and information systems are prerequisites for professionals to work safely.

Centers of expertise in patient safety should work with upper secondary and higher education institutions to define competence criteria for client and patient safety for each occupational group. At the same time, the network of centers of expertise will promote the provision of further studies in client and patient safety and development of relevant special competencies. Staff providing healthcare and social welfare education and training will receive more training in client and patient safety.

The strategy emphasizes that every professional must have the right and obligation to maintain and increase their competence. Employers must ensure that staff participate sufficiently in continuing training. The WHO curriculum of patient safety is well known in universities of applied sciences and is taken into the consideration while developing the curricula of social and health education. It is also considered in situations where a new worker comes in or has a new task as well as evaluated within annual discussions at workplace.

Are there differences in patient safety education between different professional groups?

Patient safety is part of the social and health professionals' education and content varies in the professional education depending on the profession (professionals' roles, tasks and responsibility). The client/patient centred care is the main ideology in the education of all professions and in all educational levels. They are the bases of basic education and will be provided also in all degrees, specialisation studies and continuing education.

3.3. Iceland

How is patient safety education regulated and governed?

Althingi (the parliament) is the legislator in Iceland and responsible for the legal framework regarding education and patient safety. Two ministries oversee health education programs in Iceland. Health science academic study, such as nursing, midwifery, medicine, physiotherapy, pharmacy, and psychology, are taught at the scientific university level in Iceland. The Ministry of Higher Education, Science and Innovation issues orders for higher education at the university level. One of their tasks is to establish national qualification frameworks that define the structure of qualifications and degrees at the higher education level. These frameworks are based on learning outcomes, which are the knowledge, skills, and competencies that students should acquire by the end of their studies. All universities must publish similar descriptions for each academic study program.[1]

Programs for nursing assistants, dental assistants, pharmaceutical technology, and other related fields are offered at the secondary school level. The Ministry of Education and Children is responsible for overseeing healthcare education at the secondary school level. This ministry is tasked with developing curriculum guidelines, issuing regulations, and planning educational reforms.

How is patient safety education included in the national patient safety strategy/action plan?

The Directorate of Health's "Quality Development Plan in Healthcare 2019-2030" aims to further enhance the health service's quality and safety and promote its development. The Directorate of Health publishes the plan, which the Minister of Health confirms. The Quality Development Plan focuses on four main areas: Reforming and structuring of quality improvement work, establishing quality indicators, managing, and documenting incidents, and conducting regular patient experience surveys. The goal of the plan is to enhance the quality and safety of healthcare services and encourage their continuous improvement.

Healthcare facilities and professionals are expected to develop strategies and action plans for ensuring quality and safety in their services based on the Directorate's Quality Development Plan, such as making plans for how to improve patient safety with improvement work and how to make use of experiences from patients and actively engaging them, learning from incidents, and making use of quality indicators to guide the way for improvement work. Support from the national level is established, such as national quality registers and indicators, national guidelines, procedures, and standards.

[1] Mennta- og menningarmálaráðuneytið. (2011). National Qualification Framework for higher education. Stjórnartíðindi.

There are no compulsory requirements for education in patient safety strategies for employees and managers of the healthcare services in Iceland, but there are different courses available that the healthcare institutions themselves organize.

What are the national patient safety learning objectives?

Specific national patient safety learning objectives have not been established; the imperative to operate in a manner that prioritizes patient safety is articulated across various regulations and laws. This obligation is notably outlined in laws and regulations like the Healthcare Practitioners Act, no. 34/2012, the Patients' Rights Act, no. 74/1997, the Medical Director of Health and Public Health Act, no. 41/2007 and the Health Records Act, no 55/2009. These legal frameworks provide the foundation for ensuring patient safety standards. Curriculum developers and educators draw upon these legal requirements and best practices to ensure that students are equipped with the necessary knowledge and skills to uphold patient safety standards in their practice.

The phrase «patient safety» is usually not mentioned directly in the learning outcomes within health education study programs in Iceland. In the BS nursing program at the University of Iceland, patient safety is mentioned in one of the outcomes: "The student has the knowledge on the importance of precise and eligible practice to ensure own as well as patient safety."

Patient safety and safety in healthcare is, however, integrated with various courses and curricula of the health education study programs. For example, the University of Iceland offer a course which is especially aimed at students who have completed at least three years of undergraduate studies in clinical disciplines within the field of health science. At the end of the course the student should:

- Know the fundamentals of ethics in health sciences
- Know the fundamentals of human rights
- Be able to explain the ideology and methods of interdisciplinary teamwork
- Know effective communication in interdisciplinary teamwork
- Demonstrate professionalism in communication with fellow students and the supervisor
- Be able to explain the importance of co-operation and communication between the health professions, whether in the case of a client or the community.

Medical students have a short course in patient safety in their final year and nurse students have lectures on patient safety.

How is basic patient safety competence of healthcare workers assured?

The Directorate of Health grants licenses to use the professional title of an authorized healthcare profession and to practice as such in Iceland. This ensures that practitioners meet certain standards of education, training, and competence before they can provide healthcare services. Under the Healthcare Practitioners Act, the Patients' Rights Act, Regulation on the creation of quality indicators used to evaluate quality and performance within the health service and other relevant legislation in Iceland, all individuals working in healthcare are legally obligated to perform their duties in a manner that ensures patient safety.

Employers in the healthcare sector are responsible for ensuring that their employees hold the necessary licenses to practice and possess adequate competence in patient safety. This includes providing ongoing training, resources, and support to employees to enhance their understanding and implementation of patient safety practices. Landspítali, the largest hospital in Iceland, provides a course named "Basic patient safety" for clinical healthcare professionals and students. The course consists of pre-course reading, short lectures, simulation and small group teaching. The teaching material for this course is from The BASIC Collaboration from the Chinese University of Hong Kong and is used with permission.

Are there differences in patient safety education between different professional groups?

The education differs between as well as within professional groups due to different teachers, textbooks, number of lectures, and training.

3.4. Norway

How is patient safety education regulated and governed?

Norway's Regulation on a Common Framework for Health and Social Care Education (Forskrift om felles rammeplan for helse- og sosialfagutdanninger, 2017) applies to universities and university colleges that provide health and social care education and which are accredited in accordance with the Act Relating to Universities and University Colleges (Universitets- og høyskoleloven, 2005). The regulation, together with national guidelines for individual study programs, defines the national framework for health and social care education. The purpose is to ensure that higher educational institutions offer practice-based and research-based health and social care education of high academic quality and relevance. Patient safety is not directly mentioned in the regulation. As of 2022, nineteen educational programs follow the regulation.

The Ministry of Education and Research ensures that national guidelines are established for health and social care education. The guidelines should contain definition of purpose, learning outcome descriptors in line with the national qualifications framework, and requirements for the development of courses for individual study programs. There should be room within the guidelines for professional development, innovation, and local adaptation at the individual institutions (Meld. St. 9 (2023–2024))[2,3]

Norway currently has ten universities, six university colleges and five scientific colleges owned by the Ministry of Education and Research. Norway also has a substantial number of private higher education institutions, 15 of which receive governmental financial support.

[2,3] https://www.regjeringen.no/contentassets/389bf8229a3244f0bc1c7835f842ab60/national-regulations-relating-to-a-common-curriculum-for-health-and-social-care-education.pdf

How is patient safety education included in national patient safety strategy/ action plan?

The Directorate of Health's "National Action Plan for Patient Safety and Quality Improvement" (2019-2023) contributed to a more targeted and coordinated effort for improved patient safety in the healthcare services and supported the requirements in Regulation on Management and Quality Improvement (Forskrift om ledelse og kvalitetsforbedring i helse- og omsorgstjenesten, 2017). The action plan had four general areas of which patient safety and quality improvement competence is one. To increase such competence, training programs should be adapted to both employees and managers in the healthcare services and strengthened through a combination of national, regional, and local measures. The prioritised areas of the Norwegian Action Plan (2019-2023) were integrated in the National Health and Coordination Plan (2024-2027) and continued as a framework for patient and user safety (Meld. St. 9 (2023–2024).

The health and care sector itself is responsible for developing adequate competence to reduce risk and safeguard patient safety and to make use of knowledge and experiences from patients, users and carers and actively involve them in improvement work. This is emphasized in Regulation on Management and Quality Improvement. Support from the national level is established such as the former patient safety campaign and program[4] (2011-2019), the earlier mentioned national action plan (2019-2023), patient safety conferences, national quality registers and indicators, national guidelines, different patient trajectories, and standards. The former patient safety program was established in 2018 as a permanent structure in the Directorate of Health with a coordinating role within patient safety on a national level. There is also a joint "top management education" program across specialist and primary healthcare services that also has patient safety and quality improvement on the agenda.

In Norway, there are no compulsory requirements for education in patient safety strategies for employees and managers of the healthcare services. There are many different courses and other competence initiatives at regional and local levels such as the Regional Health Trust's quality improvement training where patient safety is a central focus area. There are a number of ongoing learning networks and other competence initiatives in the hospitals and municipalities. There is also an increasing number of initiatives to implement joint training programs in quality improvement and patient safety between hospitals and municipalities.

[4] The Patient safety program was terminated in 2018 and reestablished as a department within the Directorate of Health with responsibility for the national action plan for patient safety and quality improvement.

What are the national patient safety learning objectives?

The Regulation on a Common Framework for Health and Social Care Education states that on completion, graduates should have achieved the following learning outcomes regarding patient safety:

- The graduates should be able to assess the risk of adverse events and be familiar with methods for the systematic follow-up of such risks (no.8)
- The graduates should be familiar with new thinking and techniques to be able to contribute to innovative practice and systematic and quality-enhancing work procedures (no.11).

Based on these learning outcomes each study program has one or more learning outcomes explicitly highlighting patient safety.

Examples:

Medical education: The candidate can use relevant methods to assess the risk of adverse events and contribute to improvement and patient safety by using methods to systematically follow this up.[5]

Nursing education: The candidate has knowledge of quality and patient safety within the levels of the healthcare service. The candidate can identify and assess risk factors linked to the individual, system and environment, as well as document and systematically follow this up, including implementing relevant measures.[6]

How is basic patient safety competence of healthcare workers assured?

The National Board of Health Supervision audits the healthcare services through national system audits and local organizational and professional audits. The board can issue fines to institutions and warnings to health personnel and can withdraw healthcare professionals' authorization to practice in cases of misconduct. Local audits are performed by the county governors as part of the National Board of Health Supervision.

The Directorate of Health is responsible for the licensing and authorizing of healthcare professionals. There is no system for re-evaluation or reauthorization in Norway. The directorate issues certificates of specialization to medical doctors in accordance with specific requirements. Only the specialization of GPs requires recertification.

[5] https://lovdata.no/dokument/SF/forskrift/2020-01-03-21
[6] https://lovdata.no/dokument/SF/forskrift/2019-03-15-412

The Directorate of Health oversees a national program for healthcare quality indicators. No information is gathered or disseminated regarding the results or quality of individual healthcare professionals' performance.

Each employer in the healthcare services is responsible for ensuring that health personnel conduct their work in a professionally sound manner. This also means that the employer is responsible for quality assurance/checking references/following up on whether employees have sufficient competence or not.

Regional health authorities, hospitals, municipal healthcare providers, and private providers are themselves responsible for ensuring the quality of their services and the competence of their healthcare workers. There is no requirement for accreditation or reaccreditation, although some hospitals or hospital departments are accredited (Tikkanen et al., 2020).

Are there differences in patient safety education between different professional groups?

All health and social care educations in Norway are required to follow the regulation on a common framework with learning outcomes regarding patient safety. Consequently, there should be only minor differences across study programs and professional groups. In practice there might be differences between professional groups as well as within professional groups due to different teachers, textbook, amount for lectures and training etc. The common educational framework was issued in 2019, so professionals educated prior to that might not have received patient safety education.

3.5. Sweden

How is patient safety education regulated and governed?

The Riksdag (parliament) is the highest decision-making assembly in Sweden. The Riksdag's tasks include making laws and determining the central government budget. It also examines how the Government performs its duties. The Riksdag controls the outline content of different degrees, including professional degrees, through The Higher Education Ordinance (Högskoleförordningen, (1993:100)).

The Swedish Higher Education Authority (UKÄ) reviews the quality of higher education and education institutions' systems for quality assurance of higher education and research. Furthermore, UKÄ monitors and analyses developments and trends within Swedish colleges and is also responsible for all official statistics in the field of higher education. UKÄ also exercises legal oversight of all universities and colleges. The authority actively participates in international cooperation on higher education.

How is patient safety education included in national patient safety strategy/ action plan?

In the National Action Plan for Increased Patient Safety in Swedish Health Care 2020–2024, adequate knowledge and competence is stated as one of four basic conditions (the other three committed management and clear governance, a good safety culture, and the patient as co-creator). Within "Adequate knowledge and competence" one key topic is "Special knowledge of patient safety". This topic is described as:

"Knowledge of patient safety is needed at all levels of healthcare, among individual employees, managers and leaders, as well as decision makers and politicians. It is important to make decisions based on relevant research and based on the knowledge in the field, which includes, for example, behavioural science, psychology, medicine and nursing science, leadership and organizational theory, economics and decision theory. Knowledge is not only needed to be able to make balanced decisions based on systemic factors, but also to assess risks and to propose and act regarding the individual patient.

With patient safety included in both basic and continued training, healthcare professionals can make conscious demands and contribute to a safe workplace for both them and patients. Increased awareness and knowledge of the risks and the ability to manage these risks also require knowledge of the improvement and implementation work.

Knowledge of the impact of the system is also needed to understand what creates safe care. With a system-based approach, there is an opportunity to detect and address shortcomings in the organization. Other important educational needs are knowledge of inter-professional working methods, information security and change management."

Within the action plan, one focus area is "Safe care here and now". Within this focus, several national actions are suggested:

- Take measures aimed at all levels of the healthcare system to raise awareness and knowledge about patient safety, such as communication and information efforts and target group training efforts within patient safety.
- Support actions throughout healthcare to promote introductory programs and regular training of technical and non-technical skills.
- Support efforts to make, identify, evaluate, and further develop existing methods, tools and working methods for safe care.
- Promote an increased focus on patient safety in healthcare's basic and specialist education.
- Take on board and explore the possibility of a Swedish adaptation of the WHO's Patient Safety Curriculum.
- Carry out efforts that help increase the involvement of patients and relatives in patient safety work.
- Stimulate and support research on patient safety.

It is also proposed that decision makers need to "ensure professional competence and knowledge of patient safety through skills development and further education at all levels".

What are the national patient safety learning objectives?

In the Higher Education Ordinance (1993:100), national general patient safety learning objectives are only included for the medical degree. Here it is stated that to receive the degree the individual must be able to *"demonstrate knowledge on patient safety, quality and priorities in health as well as methods to evaluate health care operations"*.

For seven professional degrees, there are individual learning objectives for specific risk areas: biomedical analysts (*identify deviations*), orthopaedic engineers (*radiation protection regulations*), prescriptionists (*analyse and solve drug-related problems*), radiographer (*radiation protection regulations*), nurses (*handle medicines adequately and be able to inform patients about effects and side effects of the medicines*), medical physicists (*radiation safety procedures*) and specialist nurses within surgical care (*demonstrate ability to be responsible for aseptic, instrumentation, infection, and complication prevention measures in connection with operations, treatments and examinations of patients*).

The national course in patient safety is aimed at those who want to know more about patient safety and what they can do to work preventively and reduce the risk of avoidable patient harm. The course is free of charge and open to everyone. The curriculum of the course includes:

- The importance of a proactive risk prevention approach and systematic patient safety work
- Factors that on an overall level are important for patient safety, such as central laws and regulations, concepts and definitions, roles and division of responsibilities, and the national action plan for increased patient safety
- Risk areas and avoidable patient harm, for example healthcare as a complex system and barriers to avoidable patient harm, known risk areas and common areas of avoidable patient harm, and measurement of patient safety
- Leadership and safety culture, for example a good safety culture, the importance of leadership and teamwork for patient safety, the participation of patients and relatives
- Systematic patient safety work, for example what is included in it, the connection between quality and patient safety, what a management system is, risk assessment and risk analyses, deviations, and investigation of events
- If a patient is affected, for example the responsibility of the care provider or the staff, need for support for the patient or staff, handling of complaints and reporting obligations.

How is basic patient safety competence of healthcare workers assured?

Everyone who works in healthcare is responsible for performing their work in a way that is safe for patients. It is the individual responsibility of each healthcare provider to make sure that there is staff with adequate competence.

Are there differences in patient safety education between different professional groups?

In a report from 2021, the National Board of Health and Welfare showed that the word "Patient safety" was not mentioned in 43 of 96 healthcare educational programs. Knowledge of risks and injury prevention was mentioned in 5 of 96 programs. Patient harm was mentioned in 11 of 96 programs. In interviews that were performed as part of the report, the respondents described that patient safety is included in large parts of the education even though this is often implicit.

3.6. Comparison of National patient safety learning objectives in the Nordic countries

- **Denmark**
  - University-level health education: For health education at university level, i.e. medicine, dentistry and pharmacy, patient safety is mentioned in some, but not all program regulations. Also, the Master Program in Public Health includes two electives in patient safety.
  - Professional bachelor's programs/universities of applied sciences: In the executive orders for professional bachelor's programs, one of the objectives for learning outcomes is connected to patient safety. In some, but not all individual program regulations, there are corresponding overarching learning goals about patient safety.
  - Vocational education and training: In the executive order for education of social and health assistants, one of the objectives for learning outcomes includes patient safety. In addition, patient safety is included in descriptions of learning objectives related to several subjects in the program regulation.
- **Finland**
  - University-level health education: National Competency Goals for Newly Graduated have been approved by all five medical faculties in 2020. The competency goals contain many goals related to patient safety.
  - Professional bachelor's programs/universities of applied sciences: The universities of applied sciences have autonomy in relation to curricula and thus there is no national curriculum. There are six competence requirements that clearly relate to patient and client safety.
  - Vocational education and training: The WHO Curriculum of Patient Safety is included in the vocational education and training related to practical nurse's national qualification requirements.

- **Iceland**
  - University-level health education: Specific national patient safety learning objectives have not been established. The imperative to operate in a manner that prioritizes patient safety is articulated across various regulations and laws. Curriculum developers and educators draw upon these legal requirements and best practices to ensure that students are equipped with the necessary knowledge and skills to uphold patient safety standards in their practice. Patient safety is usually not mentioned directly in the healthcare study program learning outcomes. Patient safety and safety in healthcare is, however, integrated with various courses and curricula.
  - Professional bachelor's programs/universities of applied sciences: The same applies as for university-level health degrees in Iceland.
- **Norway**
  - University-level health education: The Regulation on a Common Framework for Health and Social Care Education states that on completion, graduates should have achieved the two learning outcomes regarding patient safety. Based on these learning outcomes each study program has one or more learning outcomes explicitly highlighting patient safety.
  - Professional bachelor's programs/universities of applied sciences: The same applies as for university-level health degrees in Norway.
- **Sweden**
  - University-level health education: In the Higher Education Ordinance (1993:100) national general patient safety learning objectives are included only for the medical degree.
  - Professional bachelor's programs/universities of applied sciences: For seven professional degrees, there are individual learning objectives for specific risk areas.

4.

Joint positions

4. Joint positions on the Nordic framework from the participating authorities in the Nordic countries

4.1. The framework constitutes the joint position on patient safety knowledge and skills of the participating authorities in the Nordic countries.

The Nordic framework for knowledge and skills in patient safety constitutes the joint position on patient safety knowledge and skills of the participating authorities in the Nordic countries.

- Denmark: The Danish Patient Safety Authority
- Finland: Ministry of Social Affairs and Health;
  Finnish Centre for Client and Patient Safety
- Norway: Norwegian Directorate for Health
- Sweden: Swedish National Board of Health and Welfare
- Iceland: Directorate of Health

The objective of the framework is to contribute to systematic competence building with less variation to improve patient safety and reduce preventable harm in the Nordic countries

The participating authorities share a **common Nordic vision that patient safety will be integrated in health professionals' competencies**. There should be a continuous development of skills from the educational system to the workplace with a common understanding between educators and professionals and a common understanding across borders, sectors and professional groups.

4.2. The Framework builds on the WHO definition of patient safety

WHO defines patient safety as "a framework of organized activities that creates cultures, processes, procedures, behaviours, technologies and environments in healthcare that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely and reduce the impact of harm when it does occur"

The Nordic Framework is a joint articulation of what the WHO definition implies with regards to patient safety teaching, learning and training in the Nordic countries and builds on the WHO patient safety curriculum.

4.3. The participating authorities in the Nordic countries share a common vision for patient safety competence building

The Nordic framework proposes a vision for patient safety competence building in the Nordic countries where:

- **Staff** feel secure that they have the knowledge and skills they need to provide safe care
- **Health service users** experience that health professionals are working together to make sure that the service received is safe
- **Staff and service users** co-create safe care and are supported to raise concerns about the safety of the service.
- **The health systems** are resilient and promote patient safety culture in the whole continuum of care for patients as well as for staff. Health service providers have moved away from blaming individuals and fear of making mistakes to a system perspective on patient safety

4.4. Different target groups need different knowledge and skills in patient safety

The Nordic framework recognizes that there **are multiple and different target groups for patient safety competence building**. Different target groups need different competencies in patient safety. Target groups include, but are not limited to:

- Licensed healthcare professionals
- Unlicensed healthcare workers
- Persons responsible for planning, coordinating and executing patient safety education, training and other competence building in educational institutions and in healthcare services
- Students
- Healthcare managers at all levels
- Policymakers and regulators
- Persons in local and central healthcare support functions
- Patient safety and quality improvement support functions at all levels
- Publishers of educational material

4.5. Patient safety requires different skills in different learning environments and healthcare settings

The Nordic framework recognizes that **risks and avoidable harm present differently in different settings**. The work to strengthen patient safety therefore needs to be adapted to the context. Different knowledge and skills are needed in different healthcare settings and for different healthcare workers and students. The Nordic framework can be used e.g. in educational settings, onboarding programs, further education and other settings where healthcare workers and leaders receive training and education.

4.6. There is an interdependency between patient safety and other knowledge areas

The Nordic framework recognizes that there is an **interdependency between patient safety and other knowledge areas** in healthcare. Other knowledge areas contain, but are not limited to:

- Quality improvement
- Leadership
- Communication and teamwork
- Work environment
- Implementation

4.7. The framework can serve as basis for country specific implementation plans and activities to further strengthen patient safety competence building

The Nordic framework provides a common position on patient safety that can serve as inspiration for further activities. Country specific activities may include:

- National implementation plans
- Assessment and development of conditions and capacity for patient safety competence building
- Support of networking and sharing best practices, e.g. for teaching methods, between patient safety experts, educational institutions, employers and others with an interest in building patient safety competencies

4.8. The framework can also serve as basis for further Nordic collaboration and activities to further strengthen patient safety competence building

The Nordic framework serves as a common position for further Nordic collaboration to strengthen patient safety competence building which may include:

- Common work: How to implement the framework
- Establishing conditions for knowledge exchange between Nordic countries regarding e.g. patient safety education, and educator development programs
- Support for educational institutions that do not necessarily have a high level of competence in patient safety – may include learning resources, materials, sources, and websites
- Campaigns and webinars
- Training and material for leaders
- Patient safety competencies (or suggestions) for different professions (doctors, nurses, home care, social care dental, lab, x-ray etc)
- Co-operation between national centres of excellence (recommended in the WHO Strategy) regarding the Nordic framework

5.

Summary and next steps

5. Summary and next steps

The aim of this project was to develop a joint framework for patient safety knowledge and skills that can contribute to improving patient safety and reduce preventable harm in the Nordic countries. The project was initially inspired by the WHO recommendation to implement a patient safety curriculum for the education of all healthcare professionals. All Nordic countries adhere to the WHO's definition of patient safety. However, the Nordic countries share certain traits that set them apart from the average WHO country. At the same time, many healthcare workers move and work across the Nordic borders. If a common skill set and understanding of patient safety was integrated in the education of all Nordic healthcare workers, it could have a positive impact on the safety of both patients and staff.

During the course of the project, certain findings have emerged that add nuances to the original basic assumptions. While the Nordic countries and healthcare systems share a number of similarities that set us apart from the average WHO member state, it has become clear that there is variation between our educational systems, regulation and registration of healthcare professionals. Direct comparisons and benchmarking between educational programs across the Nordics are therefore not necessarily fruitful. Educational institutions have a large degree of autonomy in how patient safety is integrated in healthcare education. Furthermore, basic education is far from the only source of knowledge and skills for healthcare professionals. A significant amount of training and competence building takes place in the workplace, during onboarding of staff and in further education.

Importantly, patient safety skills and knowledge are not only relevant for the individual healthcare worker, but also very much a question of organizational learning and development. Developing and maintaining skills and knowledge about patient safety is an ongoing process that involves employers, quality organizations, professional associations, policy makers and other stakeholders throughout the healthcare system.

We hope that the common framework can serve as a tool and point of reference for all stakeholders involved in developing and maintaining patient safety skills for health professionals.

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Part 2

Competence areas for patient safety

Joint Nordic Competence Areas for Patient Safety Knowledge and Skills

Competence area 1.	Patient Safety: Definitions, Concepts, and Perspectives
Competence area 2.	Responsibilities, Obligations, and Roles in Patient Safety
Competence area 3.	System Understanding, Theories, and Frameworks
Competence area 4.	Patients and Carers as Co-Creators
Competence area 5.	Human Factors
Competence area 6.	Teamwork and Communication
Competence area 7.	Organizational Culture and Patient Safety
Competence area 8.	Risks and Risk Awareness
Competence area 9.	Identify, Investigate, and Learn from What Has Happened
Competence area 10.	Monitor and Evaluate Patient Safety
Competence area 11.	Safe Processes and Work Methods
Competence area 12.	Technology and Patient Safety
Competence area 13.	Lead and Govern for Safe Care
Competence area 14.	Readiness and Patient Safety
Competence area 15.	Risk Areas, Areas of Avoidable Harm, and Specific Situations

The aim of the competence areas for patient safety is to contribute to:

- Safe healthcare through strengthened competencies and improved teaching and learning in patient safety
- A holistic approach to patient safety as a knowledge area and a common understanding of which competence areas are important for healthcare employees in the Nordic countries.

The competence areas can be used as a foundation for setting competence goals in the Nordic countries and as guidance for educational institutions and other organizations that are responsible for providing current and future healthcare staff with the knowledge and skills necessary for providing safe healthcare.

The Nordic framework encompasses 15 competence areas within patient safety. These areas collectively cover various aspects of the patient safety knowledge domain. While some competence areas are clearly defined, others interrelate with prerequisites for other competencies. Notably, there are overlaps between patient safety competence areas and other essential knowledge domains relevant to healthcare professionals, including improvement methodologies, leadership, and work environment considerations.

Competence area 1.
Patient Safety: Definitions, Concepts, and Perspectives

Key Components

- Terms and concepts
- Patient safety in relation to other concepts and dimensions within healthcare
- Patient safety from the patient's and relatives' perspective

Description

This competence area deals with the terms and concepts used in the field of patient safety, and how they are defined and applied. It is essential to establish common terminology:

- In the work related to patient safety in healthcare facilities
- In management and governance to enhance patient safety
- When reading, writing, and researching within the field of patient safety. Definitions and concepts draw from legal regulations, national terminology databases regarding health and social care, and scientific literature.

The area also covers how patient safety relates to other perspectives within healthcare, such as good and integrated care as well as quality. It also addresses how patient safety intersects with other safety efforts in healthcare, including occupational safety, operational and functional safety, radiation safety, and information security.

Furthermore, this domain encompasses patient safety from the perspective of patients and their relatives, which is a crucial complement to the healthcare system's viewpoint. For patients, the perception of security is vital. Therefore, patient safety is not only about ensuring safety from the healthcare system's standpoint; it must also be perceived as safe by patients and their carers.

Competence area 2.
Responsibilities, Obligations, and Roles in Patient Safety

Key Components

- The legal regulation of patient safety
- Organization of work with patient safety

Description

This competence area focuses on the responsibilities and obligations related to patient safety for employees and officials at various levels within the system, as well as patient's rights. It draws from both legal regulations and practical knowledge of how these regulations are applied in the context of patient safety. Legal regulation involves various forms of rules, including laws, ordinances and regulations.

The area also includes knowledge about how patient safety work is organized and conducted at local, regional, national, and international levels. It covers the responsibilities of individual practitioners, as well as those of governing bodies and healthcare providers. Topics addressed within this domain may include:

- Ensuring high patient safety and compliance with reporting obligations
- Organizing systematic patient safety efforts, such as incident reporting and learning
- Investigating, assessing, and managing events and risks
- Establishing structures for learning and professional development in patient safety
- Reporting incidents and notifying supervisory authorities.

Competence area 3.
System Understanding, Theories, and Frameworks

Key Components

- Evolution of the perception of safety over time
- System understanding
- Safety in complex systems

Description

This competence area focuses on theories and frameworks for describing and understanding healthcare from a systems perspective. A systems perspective contributes to understanding, describing, simplifying, and gaining an overview of patient safety within healthcare.

The perception of patient safety has evolved over time. Healthcare has shifted from an individual-centric view of right or wrong actions to an understanding that patient safety is influenced by underlying factors. It is the sum of various components within the healthcare system.

System understanding is based on describing healthcare as a complex adaptive system. This means that different parts and levels of healthcare interact and influence each other. These interactions can occur unpredictably, necessitating continuous adaptations. Different aspects of healthcare carry their respective risks and challenges. Therefore, various approaches are needed to achieve and maintain patient safety.

This competence area also addresses how the system's variability and adaptability impact opportunities and challenges related to patient safety. Additionally, it includes characteristics of organizations with a high awareness of safety and a strong ability to manage risks.

Competence area 4.
Patients and Carers as Co-Creators

Key Components

- Involve patients and carers in their care and treatment
- Involve patients and carers in the design of care at all levels

Description

This competence area is about involving and engaging patients and carers in care and treatment, systematic patient safety work, and in the design of care at all levels. It concerns the participation of patients and carers as individuals, as a group, and/or as representatives of patient or carer organizations. The patient as a co-creator means that the patient is involved at all levels of the healthcare system, based on their own wishes and conditions for participation. It is essential to have knowledge about how the patient's narrative and resources are utilized in the management, control, and design of care. Patients' opportunities to participate in and influence certain issues that have direct significance for the design of care include, among other things, issues of accessibility, that the patient should receive certain information, and that the patient can be involved in how the care is designed and implemented. The patient's carers should also have the opportunity to participate in the design and implementation of care, if it is appropriate and if provisions of confidentiality or professional secrecy do not prevent this. The competence area also includes how care can create conditions for patients and carers to participate in and contribute to the systematic patient safety work. This can be done by involving patients and carers in the development of care processes and working methods.

Competence area 5.
Human Factors

Key Components

- Physical, organizational, and social work environment
- How situational awareness and decision-making are affected by stress and fatigue
- Well-being and work capacity after involvement in events that have or could have led to healthcare injury
- The importance of ensuring care for healthcare workers after adverse events and how to ensure it.

Description

This competence area deals with how the physical, organizational, and social work environment affects employees' ability to work in a way that promotes patient safety. For example, an imbalance between demands and resources can cause fatigue and stress. The same applies to the opportunity for recovery during and between work shifts. This, in turn, affects cognitive abilities, situational awareness, and the ability to make decisions. These are factors that are important for being able to perform work in a way that contributes to patient safety. The competence area also involves integrating systematic work environment efforts with systematic patient safety work. The work environment and how work is organized have consequences for employees' health and psychological safety. These are also important factors for being able to recruit and retain competent staff.

Competence area 6.
Teamwork and Communication

Key Components

- Teams in healthcare, interprofessional teamwork and multiteam system
- Communication and patient safety

Description

This competence area deals with teamwork and communication that contribute to patient safety, as well as communication within and between teams. It also concerns how good communication with patients and relatives can contribute to security, comprehensibility, and participation, which in turn contributes to patient safety. The team is one of the most common working methods in healthcare. Teams can look different in different operations. They can be permanent or temporary, physical or virtual. They can be close to the patient or bridge different parts of the patient's care process. Management teams and teams at the administrative and political level also affect patient safety. A prerequisite for teamwork that promotes patient safety is to train regularly. It involves training both common routine situations and the ability to handle and recover from disturbances and unexpected situations. Deficiencies in teamwork and communication are a common contributing cause of avoidable harm. Therefore, the competence area deals with organizational conditions for teamwork, as well as how the team members contribute their respective professional competencies to the work. Common working methods in team situations are also included. These methods involve:

- Collaborating and communicating
- Establishing security in the team
- Formulating goals and maintaining a common understanding of the task
- Identifying risks
- Making decisions based on common priorities
- Reflecting and learning together after both every day and escalating situations

The competence area also deals with the ability to recognize and manage goal and value conflicts based on the team's, the patient's, and the carers' different perspectives on the situation.

Competence area 7.
Organizational Culture and Patient Safety

Key Components

- The potential of organizational culture to promote or hinder patient safety
- Evaluating how organizational culture affects patient safety

Description

This competence area concerns how organizational culture affects patient safety and how it can be developed to promote patient safety. Organizational culture can be described as the fundamental values, assumptions, and behaviours shared by the people in an organization. The culture of an organization affects how we view issues that are significant for developing and maintaining patient safety. This includes competence at the individual and group level, our structures, processes, technology, and behaviours. The culture can both promote and hinder patient safety. Therefore, the competence area also deals with:

- How an organizational culture is developed
- What is meant by an organizational culture that promotes patient safety
- How it can contribute to promoting or preventing the development of patient safety
- The concept's relation to the concept of safety climate.

The competence area also involves evaluating organizational culture from a patient safety perspective, including the strengths and weaknesses of different approaches.

Competence area 8.
Risks and Risk Awareness

Key Components

- Risks in complex sociotechnical systems
- Risk awareness

Description

This competence area deals with how risks arise, develop, and change over time in healthcare. Healthcare can be described and understood from a system perspective as a complex sociotechnical system. This means that different parts and levels of healthcare interact and affect each other, and that there is an interplay between humans, technology, and organization in all parts.

Risks develop over different time perspectives. Some risks occur here and now in daily work. Other risks arise over a longer period. Some risks are expected while others are not. Therefore, the area also deals with risk awareness and how patient safety is constantly created and maintained at all levels of the healthcare system.

The competence area also involves identifying, analysing, and managing risks, and anticipating and handling the variations that occur in daily work. Proactive approaches within different parts of healthcare and for different risk situations, such as care transitions, during organizational changes, or when there is a shortage of care places, are also included.

Competence area 9.
Identify, Investigate, and Learn from What Has Happened

Key Components

- Identify and report
- Investigate events
- Utilize patients' and relatives' experiences, viewpoints, and complaints

Description

This competence area is about identifying, reporting, investigating, and learning from deviations and events. It can be events that have resulted in or could have resulted in harm to a patient or other deviations. Healthcare professionals must be familiar with any legal requirements regarding management of deviations and the investigation of events. Central parts of the feedback and learning process may also involve what has contributed to maintaining or strengthening patient safety. Feedback in the form of analysis results and conclusions after deviations and events creates conditions for continuous learning. They also provide a basis for systematic improvement work at all levels of healthcare. The area also involves utilizing the experiences, viewpoints, and complaints of patients and relatives. They are a source of learning and development of patient safety work.

Competence area 10.
Monitor and Evaluate Patient Safety

Key Components

- Monitor and evaluate patient safety

Description

This competence area deals with various aspects, perspectives, and measures to monitor and evaluate organizations and operations that provide healthcare from a patient safety perspective, at all levels. Examples of aspects include the presence of safety, the absence of harm, and proactive and reactive approaches. Different perspectives on the follow-up could, for example, be operation, care, patient, and resources.

Measurements and analysis of collected data need to be a basis for leading, directing, and organizing systematic patient safety work. Data can, for example, show how organizational conditions, changes in operations, and behaviours affect patient safety risks. Data can also indicate opportunities for improvement work. Therefore, the competence area also includes data sources and methods for data collection, as well as their strengths and weaknesses.

Competence area 11.
Safe Processes and Work Methods

Key Components

- Designing organization, processes, and work methods in complex systems
- Introduction and phasing out of processes, work methods, and techniques
- Secure information transfer and continuity during care transitions within and between care providers

Description

This competence area is about how organization, processes, and work methods can be designed to strengthen patient safety in various operations with varying degrees of complexity. The area includes how patient safety aspects can be highlighted and managed when new processes and work methods are developed and implemented. This can be done, for example, through systematic improvement work as well as clinical education, training, and simulation. The competence area also includes "de-implementation" as the phasing out of processes, work methods, and techniques that no longer create value or that involve too great risks.

This competence area also emphasizes processes and work methods for secure information transfer and continuity. This is relevant when a patient is moved between care units or between care providers and principals, or when several care units are involved in the care of the patient.

Competence area 12.
Technology and Patient Safety

Key Components

- The interaction between human and technology and the importance of a user perspective throughout the entire life cycle of a medical device
- Standards and regulations for medical devices

Description

This competence area is about considering patient safety at all levels when medical devices are developed, acquired, introduced, used, and phased out in healthcare. In the interplay between technology, humans, and organizations, risks can arise. They need to be identified and managed. This applies to all parts of a medical device's life cycle.

The competence area also involves viewing the user as an active participant throughout the entire life cycle of medical devices. This can be done, for example, by considering the user's experience and workflow throughout the entire design and implementation process of medical technology. It can also involve using a user-oriented method when introducing new technology.

The competence area also includes the legal regulations and standards in the field of medical technology, as well as methods for systematically evaluating and monitoring patient safety related to the use of medical devices.

Competence area 13.
Lead and Govern for Safe Care

Key Components

- Leading for safe care
- Management systems for patient safety
- Management systems for various conditions
- Support to employees

Description

This competence area concerns how work on patient safety is led, governed, and organized in healthcare. It deals with how decision-makers, leaders, managers, and individuals with medical management responsibilities can work to prioritize and integrate patient safety into work processes, decisions, and organizational changes.

It also involves the role of formal and informal leadership as a culture-creating force. This includes working methods to:

- Create trust and security in the operation
- Provide conditions for risks to be noticed, communicated, and managed
- Support employees who have been involved in events that have or could have led to patient harm

The competence area also includes how an integrated management system, where management systems for patient safety are integrated with management systems for quality and work environment, can be created and translated into practical patient safety work. It also deals with how a management system can help identify the need to change work methods, adapt goals, and reprioritize when needs exceed resources, a situation that can arise both in normal conditions and during crises.

Competence area 14.
Readiness and Patient Safety

Key Components

- Readiness and patient safety

Description

This competence area deals with how patient safety efforts are affected during extraordinary events, crises, wars, and disasters. It includes how an organization can identify the need to switch from normal operations to reinforcement mode, staff mode, or disaster mode, what this entails, and what it means for patient safety work.

The area also concerns principles for prioritization during crises or disasters and how goals for healthcare can be adapted through medical policy decisions. The area also includes patient safety aspects of preparedness work. This can involve:

- Readiness planning
- Vulnerability analyses
- How competencies and work methods in disaster or crisis situations are maintained through backup routines, crisis plans, crisis organization, inventory management, and disaster exercises

Competence area 15.
Risk Areas, Areas of Avoidable Harm, and Specific Situations

Key Components

- Specific risk areas
- Preventive work within specific areas of preventable patient harm
- Care situations with specific patient safety challenges

Description

The competence area deals with known risk and healthcare injury areas. For several known risk areas, there is a reason to highlight specific competence needs. There is also knowledge about different types of patient harm and how they can be prevented. For many of these risk areas and types of patient harm, there are specific methods and work practices. It is about methods and work practices to prevent risks and patient harm, and to follow and evaluate care from a patient safety perspective.

The competence area also deals with care situations that can lead to challenges. The treatment is fundamental for a trusting and mutual respect between healthcare workers and the patient. It is central to achieving participation and security. Factors such as age, gender, language, health literacy, socioeconomic factors, functional level, and religious beliefs can affect the meeting between the patient and healthcare workers. Deficiencies in treatment can lead to deficiencies in communication and information. This, in turn, can lead to patient safety risks.

There are also care situations that can be challenging because the patient has difficulty or does not want to participate in their care and treatment due to illness, health condition, or other conditions. It can also be about patients who are a risk to themselves or others. Examples are patients with acute confusion, dementia, psychosis, substance influence, etc.

Risks and types of patient harm vary in different parts of healthcare. Therefore, the competence needs differ between different operations and types of healthcare. The examples below illustrate which risk areas, types of patient harm, and specific care situations may be relevant. The list of examples is not complete.

- Examples of specific risk areas: Diagnostics, digital healthcare, medication management, home healthcare, surgical procedures, intensive care, emergency care and care transitions
- Examples of preventive work within specific areas of patient harm: Fall prevention, pressure ulcer prevention, preventing bladder overdistension, preventing healthcare-associated infections, preventing suicide as a healthcare injury
- Examples of care situations with specific patient safety challenges: Meeting all patients regardless of age, health literacy, socioeconomic status, language, religious beliefs, physical or intellectual functional level, etc., based on the patient's needs; situations where the patient may pose a threat to themselves or others; situations where protective and restrictive measures may be applicable; situations where healthcare workers are faced with threats and violence.

Appendix A.
Catalogue of questions and search words for review of guidelines for patient safety education in reference countries

- When was framework published?
- Are terms defined?

1. a) General patient safety
1. b) From blame culture to system error
1. c) Evidence based practice

2. a) Human factors, general
2. b) Human factors, staff well-being

3. a) Understanding complexity
3. b) Process and system error thinking

4. a) Teamwork, responsibilities and values
4. b) Psychological safety
4. c) Professional guidance to new tasks

5. a) Learning from errors, near-miss situations
5. b) Reporting of errors/near-misses
5. c) Never-events

6. a) Patient risk management
6. b) System risk management

7. Quality improvement, analysis of reports

8. a) Patient & family engagement
8. b) Communication
8. c) Continuity of care

9. a) Infection safety
9. b) Hand hygiene

10. a) General surgical safety
10. b) Surgical checklist
10. c) Patient identification

11. a) Medication safety
11. b) Device & equipment safety

- Emergency/exceptional circumstances
- Data & digital safety
- Is the framework "just a list" or is it implemented concretely?
- Who is the aim group? Accreditation or post-grad, professional development throughout career
- Planetary/environmental health
- What does the framework discuss that is not mentioned in the WHO guidelines?

About this publication

A Nordic framework for patient safety knowledge and skills – Competence areas for safe healthcare

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This report provides an overview of patient safety learning, knowledge and skills from the perspective of Nordic societies and healthcare systems. It contains a brief literature review, best practices of patient safety education, and a review of patient safety education in the Nordics. It also describes 15 competence areas for patient safety and their key components. The framework can be used as inspiration for basic and further education and training of social and healthcare professionals.

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