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# SWISS RESEARCH AGENDA FOR NURSING

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# SRAN

## 2019-2029

*full version*

## ***Impressum***

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## Introduction

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Research agendas are an indispensable element of research infrastructure within or across disciplines. The content of such an agenda provides focus when facing the wide range of questions to be answered by a discipline. Agendas provide guidance to young researchers at the outset of their career to help identify their contribution to the discipline. Generally, agendas provide a good overview of a discipline's core questions and purpose.

The first Swiss Research Agenda for Nursing (SRAN) was developed in 2007 under the direction of the Swiss Association for Nursing Science (VFP/APSI). For more than a decade, the SRAN has served as a roadmap for nurse researchers' inquiry in the field of clinical nursing research. A decade later, it is time for an update that will identify and bridge knowledge gaps and provide guidance for the direction and development for the next decade of nursing research programs and projects. Like the SRAN 2007-2017, the updated SRAN 2019-2029 supports alignment of nurse researchers and research teams across all areas of nursing research. It is also designed to guide decision makers and funding organizations.

Overall, the updated agenda presents four general priorities for clinical nursing research, each elaborated by specific research themes. These priorities are not focusing on specific populations<sup>1</sup> or health conditions. The aim was to define research priorities broad enough for various researchers and/or decision makers to apply them to their populations and settings. Along with the recommended research priorities, the revised SRAN includes transversal themes relevant to nursing research, e.g. methodological approaches or diversity.

The SRAN 2019-2029 is presented in a full version available in English and in a short version available in English, German, French, and Italian.

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<sup>1</sup> In this document, we use the term "patient" to describe the person at the center of care activities in different settings (e.g., long-term care institutions, home- and community care, hospitals). The term "informal caregiver" describes any person, including a family member, partner, friend or neighbor, who has a personal relationship and provides care and support to the patient.

## Preface

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The update of the Swiss Research Agenda for Nursing (SRAN) is another milestone within the 20 year old history of nursing science in Switzerland. It provides guidance for the eight institutes of nursing science that exist today in all language areas, in conducting high quality research and education towards bachelor, master and doctoral programs. These academic institutions have achieved remarkable reputation within their geographic regions and beyond.

During the past two decades, members of the Swiss Association of Nursing Science have developed a strong network for exchange and expertise, which strengthens the discipline nationwide and internationally.

Looking ahead to the next decade of nursing research in Switzerland, it is time to roll out the SRAN roadmap 2019-2029. I encourage an academic discourse that merits its value, that consequently involves patients and family caregivers as co-researchers, and that embraces other disciplines and policy makers who have recognized that nursing science contributes substantially to the health of the population, and to the individuals we care for.

Prof. Dr. Iren Bischofberger  
President VFP/APSI

Research agendas are internationally regarded as important elements of a good research infrastructure. The updated Swiss Research Agenda for Nursing (SRAN) provides a framework for continuing to align nursing research with the challenges of Swiss healthcare in the future.

It has had an impressive evolution. In 2007, VFP/APSI, under the leadership of Prof. Dr. Lorenz Imhof, adopted the first "Agenda for Clinical Nursing Research in Switzerland". It was drawn up with the involvement of the first specialists to obtain a master's degree in nursing either abroad or in the degree program offered by the Aarau Centre for Further Education for Health Professions with the University of Maastricht.

The VFP/APSI SRAN symposium which was held in 2014 under the presidency of Prof. Dr. Maria Müller Staub showed that SRAN attracts national and international attention. Responsible persons at all Swiss nursing research institutes, universities and partner organizations, as well as international experts, emphasized the importance of its further development. In 2017, the second SRAN Conference took place under the ad interim presidency of Dr. Stefan Kunz, at which the update of the existing agenda was widely discussed and the foundation stone for the present version was laid. SRAN 2019-2029 is now

available and shows that scientifically based nursing focuses on the benefits for patients, whether in connection with patient safety, innovative care models or nursing-specific interventions.

I hope that with this brochure, VFP/APSI will be able to initiate fruitful discussions on the further development of nursing research.

Dr. Stefan Spycher

Head of Health Policy Directorate, FOPH

## Summary of the Swiss Research Agenda for Nursing 2019-2029

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The revised SRAN is divided in two parts. The first part defines four areas of research priorities. In all four priority areas, the main topic is described and elaborated in several subthemes (see table 1). The second part identifies transversal themes which are relevant for all nurse researchers in their scientific work (see table 2).

### Table 1) Overview of research priorities

defined for the Swiss Research Agenda for Nursing 2019-2029

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#### A) New models of care

*New care models outline best care delivery practices via the application of a set of evidence-based practice principles across identified clinical pathways and patient care continuums. They need to be evaluated regarding their impact on improving related health-, patient-, and economic outcomes*

#### A1. Collaboration within new models of care

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Interprofessional collaboration shows positive impact on patient-, informal caregiver- and health outcomes, and needs to be further developed and evaluated within new care models.

Examples of specific sub-themes to be addressed are:

- Conceptual differentiation between teamwork, collaborative practices, and interprofessional collaboration, as well as nurse researchers' contributions to evaluating the structures, processes, and outcomes of various collaboration models, particularly as these pertain to new care delivery approaches
- Teamwork or collaborative practices and their impact on patient care, including family support and patient outcomes
- Power relationships among health professionals and their impact on patient outcomes and experiences

## **A2. Nursing contributions including advanced practice nursing and outcomes**

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New models of care integrating APN roles have shown to improve patient health outcomes; new nurse roles need to be evaluated with respect to these outcomes.

Examples of specific sub-themes to be addressed are:

- New models of care, including roles, tasks, and responsibilities (scopes of practice) of nurses with various levels of education and other members of health care teams
- Effectiveness of new nursing roles (particularly those of APN) with respect to patient-, health- and socioeconomic outcomes
- Interprofessional, policy, and user responses to APN, particularly on patient- and informal caregiver experiences

## **A3. Self-management support by and for patients and informal caregivers**

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Self-management support by nurses and others (e.g. patients, other professionals) has shown positive impacts on patient and informal caregiver health outcomes and needs to be evaluated within new care models.

Examples of specific sub-themes to be addressed are:

- The needs, contributions, and health outcomes of chronically ill patients and their caregivers during the constantly changing course of treatment and care.
- Self-management support for patients and informal caregivers within various care models, including the allocation of community resources and digital health, followed by evaluation of their effectiveness and implementation outcomes
- Patient centeredness and patients' experiences of tailored care delivery approaches; moving toward developing interventions that allow for diversity of populations and cultural perspectives

#### A4. Development of methodology for new models of care

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New models of care are approached as complex health interventions. Further refinements are needed regarding theoretical frameworks and methodologies for evaluation.

Examples of specific sub-themes to be addressed are:

- Theoretical frameworks and methodologies that allow for the evaluation of complex interventions
- Care delivery models that include autonomous nursing roles as sustainable implementation
- Specific theoretical frameworks that provide guidance for the development, implementation and evaluation of nursing roles in models of care.

## **B) Nursing care interventions**

*Nursing care interventions target individuals of all ages, families, and populations in all health conditions, and promote proactive changes in the society. In order for nurses to make informed clinical decisions, research on the development and implementation of patient-centered care, treatments, and technologies as well as interventions to improve health and wellbeing is needed.*

### **B1. Patient reported outcomes and experience**

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Patients points of view are essential for the evaluation of nursing care interventions. Therefore, assessment of patient-related outcomes measures (PROMs) and patient-reported experience measures (PREMs) are important. Further implementation of these measures and the evaluation of aligned interventions are needed.

Examples of specific sub-themes to be addressed are:

- Patient experiences with respect to changing illness, treatment, and care interventions
- Development of PROMs and PREMs for specific patient populations and family caregivers, with targeted and tailored interventions aligned with assessment results
- PROMs and PREMs in registries and clinical routine reports allowing for big data generation and analysis

### **B2. Person-centered care**

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Person-centered care improves the quality of health care, targets the needs of families and patients and fosters self-care. Research efforts are needed to improve patient-centered care in specific and changing fields (e.g., marginalized populations, long-term care, and in populations being treated with personalized medicine).

Examples of specific sub-themes to be addressed are:

- Strategies to communicate well with vulnerable populations that do not have a common language with health care providers
- Counselling programs to improve information, decision making, and education in situations of equipoise or in ethically complex situations (e.g., personalized medicine approaches and their consequences)
- Strategies and interventions to improve interaction between patients and healthcare professionals in situations with limited verbal communication (e.g., trauma, dementia, delirium, mental illness, cognitive impairment)

### **B3. Reduction of suffering and burden**

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Illness but also care interventions and diagnostic and treatment procedures, can cause considerable suffering and burden for patients and families. Relief interventions across all stages of ill-health need continuous development.

Examples of specific sub-themes to be addressed are:

- Self-management or coping support provided or led by nurses for patients and informal caregivers in long-term conditions to reduce disease and treatment burden
- Reducing care- related burden (e.g. in mental health and psychogeriatric care) and development of effective supportive strategies
- Palliative care approaches and coverage across regions and health care settings
- Educating and enabling nurses, nursing teams, and other health care professionals to deal with complex care situations (e.g. dementia care, multi-morbidity)

### **B4. Promotion of health and prevention of disease**

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The evolution of chronic diseases and their negative consequences can be limited by a reduction of modifiable risk factors. Nursing interventions improving health on the individual and population level need to be developed or scaled up.

Examples of specific sub-themes to be addressed are:

- Access to evidence-based interventions to improve health and well-being on the population level
- Effective health promotion programs for marginalized and hard to reach populations
- Targeted nursing interventions improving health for communities and populations, namely improving health literacy and health behavior in all age groups and marginalized groups

## C) Work and care environment

*Healthy and supportive care environments are important for both health care professionals and informal caregivers, and have an impact on patient and health outcomes. Factors contributing to quality care environments need to be better understood and management interventions need to be evaluated.*

### C1. Nursing leadership and management styles

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Nursing leadership is associated with patient, nurse, and informal caregiver outcomes at each organizational level. Studies are required, in which intervention to improve the skills and competency of the nurse leaders are developed and tested, with reference to defined patients-, nurses- and informal caregivers- outcomes.

Examples of specific sub- themes to be addressed are:

- Sustainable nursing leadership skills: at all management levels including frontline, middle and top management embracing clinical, academic and administrative tasks and roles including new technologies for planning, managing, and allocating staff resources.
- Middle-level management competences in terms of leadership-oriented career pathways, knowledge and skills
- Leadership styles (transformational leadership, transactional leadership, management by exception) and healthcare management approaches (lean management, quality improvement tools) and their impact on various outcomes
- Transfer and adoption of essential elements of recognized international healthcare certification /accreditation programs (magnet/beacon designations) to the Swiss context

### C2. Skill/grade mix and nursing resource planning

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Nurse staffing and skill/grade mix levels contribute to safe patient care and sustainable work and care environments. Empirical research and conceptual developments are needed to provide leadership with key figures and algorithms.

Examples of specific sub- themes to be addressed are:

- Skill and grade mix standards and criteria for health care activities performed by nursing teams with various experiences and educational backgrounds
- Methods to determine nurse staffing levels in relation to quality of care (e.g. patient experiences), patient safety (e.g. infection rates), patient characteristics and care demands (e.g. changes in acuity), and financial sustainability.

- Measures for optimal numbers of different grades in a team per unit of required patient care, e.g. undergraduate, and diploma nursing staff as well as vocational training and assistant team members

### **C3. System-level professional collaboration and teamwork**

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Professional and interprofessional collaboration and teamwork are crucial to quality of care and health outcomes. System-level data and intervention is needed.

Examples of specific sub- themes to be addressed are:

- Approaches on strategies and interventions to improve professional and interprofessional collaboration and team work
- Contextual complexity of interprofessional collaboration and teamwork and their underlying mechanisms
- Transferability of intervention results across institutions as well as cultural and linguistic regions
- Research tools to assess and evaluate interprofessional teamwork, collaboration, and learning

### **C4. Reconciliation of employment and family/informal care**

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Informal caregiving is an essential part of health care systems, with important effects regarding patient safety/outcomes. Organizational structures allowing the reconciliation of employment and informal caregiving need to be evaluated.

Examples of specific sub- themes to be addressed are:

- Sustainable work arrangements for employed family caregivers through proactive leadership and friendly workplace strategies
- Awareness in the health care system for double-duty caregiving and implication for communication and collaboration with distance caregivers
- Care coordination and patient safety to establish smooth care pathways, which enable working caregivers to fulfil their workforce responsibilities without being interrupted by unnecessary care duties
- Mindset of “burdened employed family caregivers” towards a more contemporary understanding of competent and resilient working caregivers

## D) Quality of care and patient safety

*Quality of care, including patient safety, is a key dimension to describe, assess, and improve healthcare performance from the individual clinician level to the system level. For nursing care quality, “nursing sensitive outcomes” (NSOs), i.e. outcomes depending on nursing care processes and structures, needs ongoing development. For patient safety, it is vital to monitor clinical practices and evaluate intervention bundles which take human and system factors into account.*

### D1. Nursing quality- measures and improvement

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Health care settings require sound quality measures of processes, structures and outcomes. Research is needed for the use of quality measures for profiling as well as for implementation of quality improvement.

Examples of specific sub- themes to be addressed are:

- Quality measures on processes, structures, and outcomes in all settings
- Barriers and facilitators of quality measures at various health care organization levels
- Interventions to facilitate organizational learning based on quality measures of structures, processes, and outcomes
- Quality measures on standardized and un-standardized routine data in electronic health records in all settings

### D2. Communication and safety culture

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Safety climate and culture relies on core factors including staff members’ individual and collective performance, attitudes, and communication. These factors need to be better understood in order to design system interventions.

Examples of specific sub- themes to be addressed are:

- Evaluation of safe care-oriented teamwork across hierarchical boundaries and improvement of team safety cultures, including positive deviants among care professionals, to model safe patient care practices
- Reliable interventions to overcome poor safety cultures and blame-oriented processes and support for second victims in health care facilities
- Human factors embedded in design and care operations
- Speak-up and interprofessional communication in situations critical to patient safety and medical error disclosure to patients and families

### **D3. Safe systems – measurement, methodology and monitoring**

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Improving patient safety requires complex system-level interventions for which human, technical, and system factors need to be considered. Evaluating the impacts of care activities on health care quality requires consistent monitoring.

Examples of specific sub- themes to be addressed are:

- Theories, models, and context behind interventions to implement patient safety practices
- Robust indicators for patient safety and quality of care sensitive to nursing care based on voluntary reporting and adverse event detection methods in the electronic health record (e.g., nosocomial infections, medication errors) and interoperability of electronic health records among professional groups (e.g., regarding medication processes)
- Identifying and ameliorating latent organizational failures (e.g., availability of proper functioning equipment, organization of work processes)
- Effects of patient safety practices on outcomes, including possible unexpected effects and costs

### **D4. Safe clinical practices, procedures and technologies**

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Safe care depends on reliable and evidence-based operations and best practices. Their implementation needs to be studied in real-life contexts, including nursing care.

Examples of specific sub- themes to be addressed are:

- Health information technology/information systems and patient/informal caregiver involvement effects on patient safety
- Patient safety-oriented design principles such as noise reduction, standardization, minimizing fatigue, immediate accessibility of information, etc.
- Patient safety in neglected areas such as ambulatory care, long-term care, and psychiatric settings including costs and benefits of safe care activities
- Medication safety within electronic health record interfaces

## Table 2) Transversal themes

defined for the Swiss Research Agenda for Nursing 2019-2029

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<b>E) Organization of research</b>
Individual studies incorporated in systematic nursing research programs promote and support professional, interprofessional, and interdisciplinary collaborations. Throughout the research cycle, ethical principles have to be applied and patient involvement needs to be systematically planned and facilitated.
<b>F) Research methodologies, methods and technologies</b>
Methodologies are needed, which accelerate the implementation of complex interventions and evidence into daily nursing practice. Meaningful use of large routine data sets needs to be facilitated, taking data security into account. Intelligent use of digital and technological advancements in healthcare needs to be enhanced, guided by both theory and practices of professionals.
<b>G) Research in health care policy and policies of higher nursing education</b>
Nursing research both guides and follows health care policy and decision making. It consults and informs nursing-related regulation and helps implement national strategies targeting pressing health care issues. Policy research is needed that evaluates these endeavors.
<b>H) Public health perspectives, diverse and vulnerable populations in research</b>
Nursing research serves both individual and public health. In particular, public health perspectives across populations and fields need to be further integrated in research. Likewise, nurse researchers across all fields of research have to account for health care disparities influenced by diversity and vulnerability.

## PART 1: SRAN RESEARCH PRIORITIES

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Congruent with the first SRAN version, research priorities are described as broad themes relevant to nursing practice and nursing science in Switzerland, also considering international developments. The priorities can be adapted to all populations (e.g., children, working age, older adults), all care settings (e.g., acute, long-term, home care, hospice), and diverse health conditions (e.g., acute, chronic, healthy).

Each research priority is introduced with a short statement, followed by sub-themes highlighting specific areas for nursing research within that priority.

### Priority A: New models of care

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Health care systems are continuously challenged to revise evidence-based care delivery in order to maintain or improve patient-, health- and economic outcomes. Changes in existing models of care are unavoidable due to multiple reasons: demographic aging, consequences of modern life styles, increasing chronic illnesses, growing cultural diversity, novel diagnostics and treatments, shifted patient and families care needs, and constraints in resources, particularly regarding qualified health professionals (1,2). Innovative new care models outline best care delivery practices via the application of a set of evidence-based practice principles across identified clinical pathways and patient care continuums. as well as patient empowerment endeavors (3). Reorganizing care models means adapting or replacing of division of labor and collaboration patterns (4) and empowering patients (3). Hence, health professional roles are in flux in clinical practice and in professional education (5–8). The models need to be evaluated regarding their impact on improving related health-, patient- and economic outcomes but also regarding implementation in practice.

#### A1. Collaboration within new models of care

Collaborative and interprofessional practice applies to diverse health care settings and includes thoughtful communicating on systematically agreed goals for patient wellbeing across settings (9). While interprofessional collaboration shows positive impact on patient-, informal caregiver- and health outcomes, it has been adopted to various degree in health care settings. In particular coordination of chronic care roles demand further investigation (10). This is particularly relevant within new models of care. These emphasize the relationship between evidence based care and high-quality interprofessional collaboration that results in improved patient outcomes, namely fewer adverse events, complications, and mortality and higher satisfaction (11). However, there is a lack of common understanding of the concept of interprofessional collaboration in relation to patient care, and whether or not this differs significantly from simple teamwork (10,12,13).

Examples of specific sub-themes to be addressed are:

- Conceptual differentiation between teamwork, collaborative practices, and interprofessional collaboration, as well as nurse researchers' contributions to evaluating the structures, processes, and outcomes of various collaboration models, particularly as these pertain to new care delivery approaches
- Teamwork or collaborative practices and their impact on patient care, including family support and patient outcomes
- Power relationships among health professionals and their impact on patient outcomes and experiences

### **A2: Nursing contributions including advanced practice nursing and outcomes**

New models of care transform nursing roles in all settings and educational qualification. This needs systematic evaluation. Internationally models integrating Advanced Practice Nursing (APN) roles have shown to improve patient- and health- outcomes. Considering the relatively short history of APN in Switzerland, their scope of practice, competencies and impacts on patient- and health- outcomes requires specific attention (14). Evaluation should focus on the patient and informal caregiver needs that can be met by the clinical skills of APN and on related patient- and health- outcomes. Evaluation results should allow to make informed decisions on implementation and sustainability of APN roles within various organizational or health care contexts. Research results are, thus, essential for decision makers in policy and practice.

Examples of specific sub-themes to be addressed are:

- New models of care, including roles, tasks, and responsibilities (scopes of practice) of nurses with various levels of education and other members of health care teams
- Effectiveness of new nursing roles (particularly those of APN) with respect to patient-, health- and socioeconomic outcomes
- Interprofessional, policy, and user responses to APN, particularly on patient- and informal caregiver experiences
- Added value and patient-centeredness of new models of care involving APN
- New models of nurse-led care focusing on healthy populations for disease prevention and health promotion provided by nurses (particularly APN)

### **A3: Self-management support by and for patients and informal caregivers**

Self-management is broadly defined as the day-to-day management of chronic conditions by individuals over the course of their illness (15,16). Nurse-led self-management support, also provided by other health professionals and peers, has shown positive impacts on health outcomes and quality of life in people living with chronic diseases and their informal caregivers. Therefore, particularly in the area of chronic illness management, any new models of care need to integrate self-management support strategies that include patients and their informal caregivers as partners in the health care team during the illness trajectory.

Self-management practice and policy need to be firmly rooted in empirical evidence. The researchers' findings should facilitate the evaluation of complex, tailored self-management support while accounting for treatment approaches and social conditions that are embedded in patients' and family caregivers' lived experiences (17).

Examples of specific sub-themes to be addressed are:

- The needs, contributions, and health outcomes of chronically ill patients and their caregivers during the constantly changing course of treatment and care.
- Self-management support for patients and informal caregivers within various care models, including the allocation of community resources and digital health, followed by evaluation of their effectiveness and implementation outcomes
- Patient centeredness and patients' experiences of tailored care delivery approaches; moving toward developing interventions that allow for diversity of populations and cultural perspectives

#### **A4: Development of methodology for new models of care**

New care models are complex health interventions. They are highly context-dependent and involve numerous components. The potential inter-reactivity makes them difficult to measure in terms of influences on planned and unplanned outcomes. Accordingly, developing, implementing, evaluating and sustaining complex models of care require innovative methodologies and sound theoretical frameworks.

Examples of specific sub-themes to be addressed are:

- Theoretical frameworks and methodologies that allow evaluation of complex interventions
- Care delivery models that include autonomous nursing roles as sustainable implementation
- Specific theoretical frameworks that provide guidance for the development, implementation and evaluation of nursing roles in models of care.

### **Priority B: Nursing care interventions**

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Nursing care interventions target individuals of all ages, families, and populations in all health conditions, and promote proactive changes in the larger society (18). This also involves participation in the constant evolution of the organization and sustainable financing of care as well as the patient-centered development of treatments and technologies for individuals and populations. Ironically, the tremendous benefits of medical and technological innovations extend patients' lives also with difficult health conditions. This is challenging for health care professionals including nurses in the provision of effective care and treatment. In particular, caring for a growing patient and family caregiver population – many are older adults or living with multiple ill-health conditions – requires a large set of person-centered interventions to reduce burden of illness and treatment and to promote health and wellbeing in individuals and groups. In order for nurses to make informed decisions, research on the development

and implementation of patient- centered care, treatments, and technologies as well as interventions to improve health and wellbeing is needed.

## **B1: Patient reported outcomes and experience**

Highlighting the importance of patients' perspectives and experiences, clinical and health service researchers are increasingly planning their activities to be patient-centered. In fact, patients' points of view are now recognized as essential when evaluating the six core dimensions of health service quality – safety, effectiveness, patient centeredness, timeliness, efficiency and equitability (19). This has led to the development of numerous PROs (patient related outcomes) and PREs (patient related experiences), i.e., reports made directly by patients about their health conditions and experiences with no interpretation by clinicians or anyone else (20). While traditional survival, disease and physiological outcomes demonstrate the physiological effects of care, PROs provide a more holistic interpretation and assessment (21). For research purposes, two interrelated measurement options were developed: patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs).

PROMs allow identification of benefits or deficiencies related to the disease, treatment and care that are detectable only by the patient. While permitting clinicians and researchers to quantify the severity, frequency or duration of specific symptoms and their impacts on patients' functionality, PROMS can also illuminate more complex concepts such as health related quality of life (22). Studies show that PROMs are more concordant with the patient's overall health status and result in earlier communication of symptom occurrence and severity than clinicians' reports, which tend to underestimate these experiences (23,24). In addition, the integration of electronic reports made by the patients themselves in routine care settings has been associated with increased survival (25).

PREMs compile patient ratings of specific experiences and their satisfaction with the associated health services (26,27). They encompass the full range of patient interaction with the healthcare system, including hospital care, general practice care and home-based care, as well as transitions between health services (e.g., from hospital to home-based care) (28). One key aspect of developing PREMs and understanding patients' experiences is learning to elicit their narratives on illness, treatment and care experiences in diverse social and care settings.

Examples of specific sub-themes to be addressed are:

- Patient experiences with respect to changing illness, treatment, and care interventions
- Development of PROMs and PREMs for specific patient populations and family caregivers, with targeted and tailored interventions aligned with assessment results
- PROMs and PREMs in registries and clinical routine reports allowing for big data generation and analysis
- Large-scale observational PROM / PREM studies for defined patient populations
- Targeted and tailored interventions aligned with PRO assessment results and their effectiveness

## **B2: Person-centered care**

Diagnostic procedures, care and treatment inherently include the interaction and communication between health care professionals, patients and often their informal caregivers as well. Person-centered care in general is defined as “putting people and their families at the center of decisions and seeing them as experts, working alongside professionals to get the best outcome” (29). It has shown to improve the quality of health care, targets the needs of patients and families and fosters self-care (29,30). Thus, person-centered care is at the central focus of nursing care. Whereas these approaches are implemented in the Swiss health care system to some extent, overall efforts are needed to improve person-centered care in specific and changing fields (e.g., marginalized populations, long-term care, and in populations being treated with personalized medicine).

Examples of specific sub-themes to be addressed are:

- Strategies to communicate well with vulnerable populations, that do not have a common language with health care providers
- Counselling programs to improve information, decision making and education in situations of equipoise or in ethically complex situations (e.g. personalized medicine approaches and their consequences)
- Strategies and interventions to improve interaction between patients and professionals in situations with limited verbal communication (e.g. trauma, dementia, delirium, mental illness, cognitive impairment)

## **B3: Reduction of suffering and burden**

Illness can cause considerable suffering and burden in patients and their informal caregivers. Nursing care needs to relieve illness related pain and suffering in all stages of ill-health trajectories. Diagnostic procedures and treatment approaches are continuously improved and new approaches are developed to optimize health outcomes and quality of life for individuals (31). Research shows that despite benefits of a medical treatment on survival or disease progression, patients might not be ready to start, do not completely adhere or terminate these treatments (ref). Various reasons for such behaviors have been described, such as treatment-complexity, symptom-burden, treatment fatigue and the change of care provider (32). Additionally, diagnostic or nursing care procedures itself might burden the patients, for example by the experiences of pain or anxiety. Research shows that thought through nursing interventions such as injection anxiety-reducing programs or self-management support during cancer treatment, or easily applicable glucose treatment for preterm born children before painful interventions can reduce patient burden (33–35).

Therefore, based on patient or family reported experiences and outcomes, nursing interventions are needed and evaluated that aim to reduce the burden resulting from ill-health or from medical and care procedures. Support is needed for the patients and informal caregivers to enable them in coping or managing the consequences of ill-health, treatment and care in inpatient, outpatient or home settings or when transitioning between settings.

Examples of specific sub-themes to be addressed are:

- Self-management or coping support provided or led by nurses for patients and informal caregivers in long-term conditions to reduce disease and treatment burden
- Reducing care related burden (e.g. in mental health and psychogeriatric care) and development of effective supportive strategies
- Palliative care approaches and coverage across regions and health care settings
- Educating and enabling nurses, nursing teams and other health care professionals to deal with complex care situations (e.g. dementia care, multi-morbidity)

#### **B4: Promotion of health and prevention of disease**

The evolution of chronic diseases and their negative impact can be limited by a reduction of modifiable risk factors (e.g. nutrition, physical activity, smoking and alcohol) (36). Nursing care is not only concerned with reducing risk factors and improving the health of individuals but also the health of communities and populations as a whole by applying a public health perspective. Internationally, cost-benefit research findings have suggested that public health nursing interventions are efficient and effective and could be widely successful in addressing health problems such as obesity and mental health (37). In the Swiss context, public health nursing has a varying tradition across the country, e.g. with activities in school nursing as one example of a public health role. Research is needed to cohesively develop, adapt, implement and evaluate public health nursing interventions in respect to: 1) access of communities/populations; 2) improvement of the persons experienced with interventions and 3) a reduction of per capita costs of healthcare (38).

Examples of specific sub-themes to be addressed are:

- Access to evidence-based interventions to improve health and well-being on the population level
- Effective health promotion programs for marginalized and hard to reach populations
- Targeted nursing interventions improving health for communities and populations, namely improving health literacy and health behavior in all age groups and marginalized groups

#### **Priority C: Work and care environment**

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Healthy and supportive care environments are important for both health care professionals and informal caregivers, and have an impact on patient and health outcomes.

The quality of work environments and, more specifically, of the nurses work environment has received considerable attention from nurse researchers in relation to magnet hospitals in the United States (39). In the 1980ies, many hospitals reported serious nurse shortages, whereas others reported no problems recruiting and retaining nursing personnel. Factors to explain the success of so called “magnet hospitals”, fourteen features (magnet forces) were identified that contribute to a healthy and attractive work environment: e.g., high-quality nurse

leadership and staffing structures, collaborative, interdisciplinary relationships, a decentralized organizational structure, a culture that promotes interdisciplinary collaboration and safety, and recognition of nurses' contributions to the quality of patient care and patient safety (40). Not only in magnet hospitals but in health care institutions in general, professional and interprofessional collaboration is recognized as key characteristic of healthy and supportive work and practice environments (41). More recently, the value of informal caregivers' efforts to the overall care and work environment has been recognized regarding improved economic and patient health outcomes (42,43). Additionally, research on the quality of the nurse work environment shows how findings regarding US magnet hospitals can be transferred to the Swiss and European contexts, where no magnet hospital accreditation systems exist.

### **C1: Nursing leadership and management styles**

At each organizational level, both the quality of nursing leadership and the characteristics of leadership styles is associated with patient, nurse, and informal caregiver outcomes as well as quality of care. Currently, findings from studies (44,45) on magnet hospitals' nurse work environments lack generalizability, because the studies are predominately cross-sectional and were conducted in the context of single institutions (41). Improving the quality of nursing management and linked organizational features, intervention studies are required which evaluate changes and the effectiveness on patient and nurse outcomes will. The studies should focus on the development, implementation and evaluation of interventions to build leadership qualifications, competencies and skills at every organizational/management level. The interventions should also consider the educational system and daily health care practice. Since nursing executives are also accountable for quality of care and relevant budgets, the studies should also include the development, implementation and evaluation of instruments to monitor quality of care.

Examples of specific sub-themes to be addressed are:

- Sustainable nursing leadership skills: at all management levels including frontline, middle and top management embracing clinical, academic and administrative tasks and roles including new technologies for planning, managing, and allocating staff resources.
- Middle-level management competences in terms of leadership-oriented career pathways, knowledge and skills
- Leadership styles (transformational leadership, transactional leadership, management by exception) and healthcare management approaches (lean management, quality improvement tools) and their impact on various outcomes
- Transfer and adoption of essential elements of recognized international healthcare certification /accreditation programs (magnet/beacon designations) to the Swiss context

## **C2: Skill/grade mix and nursing resource planning**

Health care providers are responsible to ensure high quality care while simultaneously managing limited or increasingly reduced financial and personnel resources. To achieve this goal, health care managers are pressurized to define skill and grade mix systems appropriate to meet the needs for person-centered care. Skill mix refers to the staffing of care teams in terms of skills and experiences acquired during careers. Grade mix refers to the composition of teams and their educational qualifications. Miscalculation or insufficient planning can lead to a skill and grade mix which is inadequate to ensure the safety of persons in need of care or nursing personnel. In addition, few standards exist, which define appropriate skills and grades for care activities required in specific health care setting. To date in Switzerland, several local or institutional research studies were conducted to evaluate the required nurse staffing and skill/grade mix levels. However, interinstitutional or national studies are missing. As a result, evidence on skill and grade mix models used in Swiss health care institutions (e.g. hospitals, long-term-, community care institutions) is limited (46).

Examples of specific examples of specific sub-themes to be addressed are:

- Skill and grade mix standards and criteria for health care activities performed by nursing teams with various experiences and educational backgrounds
- Methods to determine nurse staffing levels in relation to quality of care (e.g. patient experiences), patient safety (e.g. infection rates), patient and staffing characteristics and care demands (e.g. changes in acuity), and financial sustainability.
- Measures for optimal numbers of different grades in a team per unit of required patient care, e.g. undergraduate, and diploma nursing staff as well as vocational training and assistant team members
- Methods and strategies to maintain care quality despite limited resources (especially time and available skill/grade mix), to retain nursing personnel; and to train and educate a sufficient number of new nurses to match projected needs.

## **C3 System-level professional collaboration and teamwork**

Professional and interprofessional collaboration and teamwork contribute to improve nurse outcomes, i.e., job satisfaction and turnover (47–49) and lower rates of missed and or unfinished nursing care (50). Over the past decade, particularly within the context of health care reforms, improvement of interprofessional collaboration and teamwork have become a key strategy for single institutions and across health care systems to optimize care delivery, to meet patient care needs and to ensure the quality and safety of care (48,51,52). Current evidence on this topic indicates that practice-based interventions designed to improve interprofessional collaboration, including patient and nurse outcomes, can have a positive effect on collaboration and teamwork (49). Major challenges for researchers in this field are the lack of precise assessment and evaluation tools in interprofessional teamwork, collaboration and learning (53). Additionally, system-level data evaluation and intervention are needed.

Examples of specific sub- themes to be addressed are:

- Approaches on strategies and interventions to improve professional and interprofessional collaboration and team work
- Contextual complexity of interprofessional collaboration and teamwork and their underlying mechanisms
- Transferability of intervention results across institutions as well as cultural and linguistic regions
- Research tools to assess and evaluate interprofessional teamwork, collaboration, and learning

#### **C4: Reconciliation of employment and family/informal care**

Reconciling employment and family caregiving – known in Switzerland as „work & care“ – has become an issue for family caregivers themselves, but also for health care providers (54). Family/informal caregivers with concurrent employment obligations have limited time to interact with health care staff. Therefore, they need flexible schedules in the care trajectory and a reconciliation friendly service culture (e.g., for visiting hours) which facilitates communication between staff and working caregivers (55). Compared to professionals in other sectors of the labor market, health professionals are more likely to support ill or frail own family members. These so called double-duty caregivers use their know-how both for their professional duties, and privately for their family members (56). Research results from Switzerland showed double-duty caregivers to be particularly sensitive to patient safety issues (57). Reconciliation of work and family caregiving often includes some degree of distance caregiving (supporting family members from a geographical distance). Health care teams are required to develop virtual communication skills to match with family caregivers' employment duties (58). The Swiss federal government has responded to this issue by integrating work & care, first in the Federal Council's action plan on the situation of family caregivers in Switzerland (59), later in a federally funded research and development program to support family caregivers (2017-2020). In 2019, a federal legal framework was initiated to support reconciliation endeavors.

Specific sub- themes to be addressed are:

- Sustainable work arrangements for employed family caregivers through proactive leadership, and friendly workplace strategies
- Awareness in the health care system for double-duty caregiving and implication for communication and collaboration with distance caregivers
- Care coordination and patient safety to establish smooth care pathways, which enable working caregivers to fulfil their workforce responsibilities without being interrupted by unnecessary care duties
- Mindset of „burdened employed family caregivers“ towards a more contemporary understanding of competent and resilient working caregivers

## Priority D: Quality of care and patient safety

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Quality of care, including patient safety, is a key dimension to describe, assess and improve healthcare performance from the individual clinician level to the system level.

For nursing care quality, “nursing sensitive outcomes” (NSOs), i.e. outcomes depending on nursing care processes and structures, needs ongoing development(60,62). Nurses contribute to the prevention of adverse events and improved health outcomes(61). NSOs are often used by health researchers as indicators to gauge overall quality of care (63). A defining feature of NSOs is that the processes (e.g., interventions) or structures (e.g., staffing) provided or influenced by nurses are associated with care-sensitive outcomes. The development, assessment and improvement of nursing sensitive outcome measures provide bridges between system-level decision-making and organization-level improvement (64), their targets are populations rather than individuals.

Patient safety-oriented practice is vital in all care settings and are defined as: *“The avoidance, prevention and amelioration of adverse outcomes or injuries stemming from the process of healthcare”* (65). International and national studies show that adverse events during hospitalization or in homecare settings affect approximately 5-15% of patients, with a substantial proportion of these events deemed preventable (66–69). Across all settings, patient harm due to medical care leads to serious negative outcomes not only for patients and their families, but also for involved health professionals as “second victims”, institutions and health care systems. Improving and sustaining safe, high-quality health care will require a strong ongoing commitment to monitoring health care safety practices and failures (70). These depend, in turn, on reliable measurement and methodological approaches. Disseminating and maintaining improvements will require intervention bundles that take human and system factors into account regarding such issues as nosocomial infections, medical and other care errors.

Furthermore, patient safety-oriented principles that can be applied to health care facility architecture have wide-ranging implications for research, e.g., when designing health-promoting environments for patients or promoting intuitive, safety-promoting behavior among health care professionals (72).

### D1: Nursing quality- measures and improvement

In all settings of healthcare, meaningful quality measures of processes, structures and outcomes are required. Development of such measures includes the involvement of key stakeholders such as patients, families, clinicians, management, researchers and health policy makers. Also, robust research methodology is needed to assess the reliability and validity of the measures. The use of standardized nursing language (SNL) can provide interoperable data across nursing care settings, health care providers, and patients and families (73).

Furthermore, research about the use of diverse quality measures for profiling as well as on the implementation of quality improvement is needed.

Specific sub- themes to be addressed are:

- Quality measures on processes, structures and outcomes in all settings
- Barriers and facilitators of quality measures at various healthcare organization levels
- Interventions to facilitate organizational learning based on quality measures of structures, processes and outcomes
- Quality measures on standardized and un-standardized routine data in electronic health records in all settings

## **D2: Communication and safety culture**

Safety climate and culture relies on core factors including staff members' individual and collective performance, attitudes, and communication. For example, lack of communication and coordination, but also blame oriented processes among health care professionals are key research priorities for patient safety improvements according to the WHO (71). Among all health care professionals, nursing teams have a strong direct influence on their institutional safety cultures. The factors influencing communication and safety culture need to be better understood in order to design system and nursing relevant interventions.

Specific sub-themes to be addressed are

- Evaluation of safe care-oriented teamwork across hierarchical boundaries and improvement of team safety cultures, including positive deviants among care professionals, to model safe patient care practices
- Reliable interventions to overcome poor safety cultures and blame-oriented processes and support for second victims in health care facilities
- Human factors embedded in design and care operations
- Speak-up and interprofessional communication in situations critical to patient safety and medical error disclosure to patients and families

## **D3: Safe systems – measurement, methodology and monitoring**

Improving patient safety requires complex system-level interventions for which human, technical and system factors need to be considered. In all cases, theoretically grounded methodological development is essential: Reliably evaluating the impacts of care activities and standards on health care quality will require valid measures and consistent monitoring.

Specific sub- themes to be addressed are:

- Theories, models, and context behind interventions to implement patient safety practices
- Robust indicators for patient safety and quality of care sensitive to nursing care based on voluntary reporting and adverse event detection methods in the electronic health record (e.g., nosocomial infections, medication errors) and interoperability of electronic health records among professional groups (e.g., regarding medication processes)

- Identifying and ameliorating latent organizational failures (e.g., availability of proper functioning equipment, organization of work processes)
- Effects of patient safety practices on outcomes, including possible unexpected effects and costs

#### **D4: Safe clinical practices, procedures and technologies**

Safe care depends on the application of reliable, evidence-based interventions and best practices. It also considers design principles affecting patient safety across the full range of prevention and treatment strategies, programs and interventions. Their implementation needs to be studied in real-life contexts, including nursing care.

Specific sub-themes to be addressed are:

- Health information technology/information systems and patient/informal caregiver involvement effects on patient safety
- Patient safety-oriented design principles such as noise reduction, standardization, minimizing fatigue, immediate accessibility of information, etc.
- Patient safety in neglected areas such as ambulatory care, long-term care, and psychiatric settings including costs and benefits of safe care activities
- Medication safety within electronic health record interfaces

## PART 2: TRANSVERSAL THEMES

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Transversal themes are relevant for nurse scientists across priorities and sub-themes when planning, conducting, evaluating and disseminating research. They range from issues on organizing research projects, to methodological approaches, and to research in the nursing education context. Part 2 concludes by describing the commonalities between nursing research and health care policy.

### E) Organization of research

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Given Swiss universities' late start of graduate and post-graduate nursing education in the year 2000, nursing research is still a young discipline. In order to bundle resources and maximize the value of nurse researchers' output, individual studies should be oriented toward **systematic research programs**. Such programs address knowledge gaps in relation to their programmatic aims, and typically consist of a series of planned and related projects, each of which stand alone and contribute stepwise to achieving the program overall aims (74). Not only are nursing research programs valuable for individual research careers, they contribute tremendously to the discipline of nursing and improvements in patient care (75). The research priorities described in this agenda highlight knowledge gaps that could be bridged by well-coordinated multi-study programs led by nurse researchers. To do so, such programs would have to be oriented toward the systematic development of evidence and the advancement of diverse methodological approaches.

Given the complexity of current and projected socioeconomic and demographic shifts and health-care issues, the programs will certainly engender **interprofessional collaborative research** at national and international level. No longer can single-discipline, single-study approaches reasonably be used against the most pressing health care problems. These demand both systematic research programs (76) with strong, collaborative leadership. To answer the research questions in these programs, require primary investigators to propose, develop and maintain multidisciplinary collaborations. In turn, these nurse researchers must actively contribute their expertise to projects led by other disciplines.

As a discipline, nursing has traditionally been oriented toward serving the health care needs of individuals, groups or entire populations (77). However, **public and patient involvement** has been embraced only in specific areas such as psychiatric care, and need to be implemented in the entire health care system, to align care-oriented research with individual and collective needs. The UK National Health Service defines (non-professional) involvement in research as the active role of patients, family caregivers, and the public in general in all phases of the research process (78). Accordingly, nurse researchers are continuously developing methodologies that maximize these stakeholders' collaborative and reciprocal involvement in their projects. Throughout the research cycle, **ethical principles** have to be applied and patient involvement needs to be systematically planned and facilitated.

## F) Research methodologies, methods and technologies

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Robust and knowledge driven research needs an informed decision about designs, methods and the integration of technology with regard to answering the research question(s). Nursing research has traditionally combined qualitative, quantitative and mixed method methodologies and designs. Additionally, nursing research and its practice-driven mindset, also requires a sound understanding of implementing research results into practice.

With respect to the research priorities, three methodological approaches are most important: 1) to research rapid implementation of complex interventions/models of care into practice settings; 2) to support methodologies that use large databases to ultimately influence care and care systems; and those that allow sustainable user-and patient-centered implementation of innovative technologies into care and care delivery systems. Currently, researchers across a variety of disciplines are rapidly advancing all these approaches. The following paragraphs highlight fields which are particularly relevant to nursing research.

**Implementation science:** While nursing research in Switzerland has grown rapidly over the past two decades, growth has outpaced the development of corresponding dissemination and implementation research. The U.S. National Institutes of Health (NIH) define implementation science as “the study of methods to promote integration of research findings and evidence into healthcare policy and practice” (79). This calls for nurse scientists to accelerate the translation and implementation of their findings into practice – clinical, educational, managerial or policy. This will call for innovative dissemination and implementation techniques (80). This includes consensus finding on the definition and description of processes and factors, that interfere with implementation in a regulated clinical and educational sector. Hence, real-life settings have their own principles and strategies of embracing or rejecting research insight and evidence. Therefore, nursing researchers have to tie strong alliances with practice and policy in order to prepare implementation of their research results.

**Digital Health:** Increasingly, nurse researchers have to address the digital development in Health 4.0 – the fourth and latest developmental step related to information and communication technology in health care and related research. Recently, a report defined Digital Health as an umbrella term and summarized and organized several commonly used terminologies in four domains (81): (1) Trend Health (lifestyle-oriented trends, for example, the growing use of fitness monitoring applications); (2) eHealth (clinical-oriented uses of new information technology, for example, electronic health records, telemedicine); (3) Data Health (data-focused applications that can be health-related, for example, Big Data, the Internet of Things, and Artificial Intelligence) and (4) Tech Health (hardware-oriented, for example, the use of medical high-tech products and robots for care for patients). Regarding the SRAN research priorities, nurse researchers are encouraged to contribute to all four of these domains by participating actively and advancing nursing-related research questions. For example, due to the increasing trend to monitor health-related data beyond inpatient care into patient's homes, more research is needed in respect to the appropriate content, function

and design of applications or devices to strengthen the ties between patient and health care professional. Here, communication and coordination tools and processes support individual patient's needs related to self-management and life-style changes. In relation to the national strategies, like the Swiss strategy eHealth 2.0 (82–85), more research is needed on the efficient input, storage, and exchange of nursing-related data incorporated in electronic patient health records and personal health records. Concerning the growing amount of large data sets, more insights of the use of nursing-related data in analytical tools (algorithms) and its impact on personalize healthcare for patients and their formal and informal caregiver is needed. Additionally, nurse researchers are currently challenged to participate actively in the development, evaluation and long-term implementation of useful types of robotics (e.g. service, care-related or social assistive robots). Issues arise in this respect to the meaning of human interaction for patients, patient-centered care, professionals or in an ethical and socio-technical perspective (86,87).

### **G) Research in health care policy and policies of higher nursing education**

Nursing research can both inform and influence and be informed and influenced by health policy. In a federal country such as Switzerland, cantonal and communal governments are primarily responsible for policy making on health care delivery and, thus, population health. Cantonal health care policies can adopt federal recommendations on national strategies (e.g. palliative care, non-communicable diseases NCD, eHealth). Also, cantonal health departments license and supervise health care providers, including self-employed nurses.

The federal government together with cantonal health policy makers is mainly responsible for legislating and regulating social insurances. These are relevant for paying long-term care facilities as well as covering acute care, thus influencing access to care and payment of care delivery. Also, the federal government together with cantonal bodies is responsible for the implementation of specific health care structures, such as the electronic patient record which will be enacted in spring 2020. In this context, care coordination and its financing structures remain high priorities at the national, cantonal, and local levels (92–97).

Undergraduate programs in nursing science will be accredited by the federal government, based on the Health Profession Act, which will most probably be enforced in 2020. Graduate programs in nursing science, however, are not federally regulated in this act. Therefore, universities of applied sciences and universities together with care providers are fully responsible for the scope of practice of graduate nurses. Evaluations are required to analyze the impact of new graduate programs, particularly with a focus on clinical nursing science, in order to assess quality and safety of care and other outcomes. Therefore, nursing research in collaboration with other disciplines is highly relevant in this context of health care policy and academic nursing education in Switzerland.

## H) Public health perspectives, diverse and vulnerable populations in research

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Nursing research serves both individual and public health. In particular, public health perspectives across populations and fields need to be further integrated in research. Likewise, nurse researchers across all fields of research have to account for health care disparities influenced by diversity and vulnerability

Health care disparities, which affect numerous patient groups, are strongly influenced by diversity and vulnerability. Health outcomes of those populations include inadequate diagnosis and disease management, increased morbidity and mortality, avoidable suffering and heavy health care system costs (88). For nurse researchers working with increasingly diverse populations, avoiding discrimination and guaranteeing equal access to health care services means to consider the needs of specific minorities and vulnerable patient groups (89).

Diversity includes not only and typically age, gender and ethnicity (90), but broader characteristics such as socio-economic level, geographic origin, education, physical functionality, personality traits, lifestyle, sexual preference, and others. Some populations are particularly vulnerable and in need for special protection. These vulnerable patient groups can be heterogeneous and may include children, adolescents as well as particular groups of (older) adults (91). Likewise, pregnant woman with very young or higher childbearing age, adults with limited capacity for autonomy (e.g., care-dependent, cognitively or physically impaired, in particular people with dementia, end-of life situations), or individuals in precarious living situations (e.g., recent migrants, other discriminated, marginalized groups, individuals in correctional facilities or receiving emergency services) are particularly vulnerable. In the past, vulnerable groups were excluded in some research approaches such as clinical trials to eliminate any risk their participation might entail for them (namely pregnant women or women in childbearing age).

However, systematic exclusion of specific groups from nursing research may ultimately increase their vulnerability (91). Where knowledge and understanding gaps relate to care and treatment, for example, unanticipated effects of medications or other care interventions can lead to disadvantages, health disparities and other negative outcomes. For these reasons, among others, future research plans should account for diversity and vulnerable groups and individuals. This is especially true where inclusion would not increase their vulnerability, but might actually help them meet their needs, especially where these involve impediments to their care and support.

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