

BMJ Open Advanced practice nurses, registered nurses and medical practice assistants in new care models in Swiss primary care: a focused ethnography of their professional roles

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ABSTRACT

Objectives We aimed to analyse roles and tasks of advanced practice nurses (APNs), registered nurses (RNs) without advanced practice education and medical practice assistants (MPAs) with regard to chronic care in Swiss primary care (PC). The objective of this study was to explore the potential of new care models, involving these health professionals, which could meet changing future healthcare needs.

Design An ethnographic design comprising semi-structured interviews and non-participant observations was conducted.

Setting Health professionals who worked in 10 primary care practices in the German-speaking part of Switzerland were included in the study.

Participants In total, 16 interviews were conducted with four APNs, six MPAs, two RNs and four general practitioners (GPs). Nine of the health professionals were subsequently observed in their primary care practice.

Results APNs and MPAs were both involved in chronic care in the PC practice. While APNs cared for older, multimorbid patients with more complex needs, MPAs were involved in counselling of younger patients with chronic disease such as type 2 diabetes. Additionally, APNs were involved in many home visits and visits in elderly peoples — and nursing homes. APNs worked with a high degree of autonomy while MPAs had worked mostly in delegation. Task division between GPs and APNs or MPAs was not clear in every case yet.

Conclusions APNs and MPAs have a high potential to contribute to optimal care in new care models, which address needs of the elderly population. The experience from our sample may inform international health policymakers and practitioners about the tasks and responsibilities those health professionals can take over in PC when implementing new models of care. The practical experience with new models of care involving APNs and MPAs may also influence the future regulation with regard to the scope of practice of these health professionals in Switzerland.

INTRODUCTION

Chronic disease is a global epidemic, as recognised by the WHO.¹ Currently, chronic

Strengths and limitations of this study

- An ethnographic design allowed the authors to analyse in detail new care models involving health professionals for chronic care management.
- Observations allowed the researchers to verify whether statements made in the qualitative interviews were evident in practice.
- The study faces limitations as only a small number of participants could be recruited since only a small number of Swiss primary care practices have implemented new models of care involving advanced practice nurses, medical practice assistants and registered nurses.
- Furthermore, participants were recruited only in the German-speaking part of Switzerland, which limits the representativeness of our results for the whole of Switzerland.

non-communicable diseases account for nearly half of the burden of disease in high-income countries.² As life expectancy rises and the risk of chronic disease increases with age, such diseases are expected to pose a bigger healthcare burden to societies worldwide.^{3–5} Today, chronic diseases such as diabetes, cardiovascular diseases, cancer or chronic respiratory diseases are one of the greatest public health issues in low- and middle-income countries as well as high-income countries. The four main risk factors for these diseases — tobacco use, the harmful use of alcohol, unhealthy diets and physical inactivity — all lie in the non-health sectors and therefore require close collaboration with powerful economic operators.⁶ Public health programmes therefore aim to prevent and control chronic diseases by targeting for example fiscal and marketing policies of the food industry or promoting active living and

mobility as well as individual-level prevention of chronic diseases.⁷

Due the high prevalence of patients with chronic diseases, existing models of care are more and more called into question because they still largely focus on curing diseases, instead of long-term management of chronic diseases.⁸

New models of care and advanced practice nursing

In 2018 the WHO Declaration of Astana has emphasised the need to strengthen primary healthcare and set new directions for the development of primary healthcare as a basis of healthcare systems.⁹ Primary care (PC) is seen as the ideal point to deliver prevention and care for frail and chronically ill older patients.⁸ In the *Framework on Integrated People-centred Health Services* the WHO has proposed to build strong PC-based systems with interdisciplinary teams, which adopt a family-based and community-based approach. In addition, the health workforce should be reoriented to tackle workforce shortages and create interdisciplinary teams which work across professional boundaries.¹⁰

Integrated person-centred care models, which build on interdisciplinary teams¹¹ to care for patients with diverse health problems, are seen as a promising approach to tackle future challenges in the provision of care for the elderly. In addition to interdisciplinarity, integrated care models often involve one or more of the following elements: comprehensive assessment, case management, systematic risk factor screening, patient education, professional education, home visits and medication review.¹²

Evidence from the USA shows that integrating advanced practice nurses (APNs) into PC teams plays a central role in alleviating physician workforce pressures and improving the management of chronic care needs in the patient community.^{13–15} Research has also shown that APNs can provide equally high-quality care to patients as physicians in primary care^{16–19} and that they achieved even better outcomes than general practitioners (GPs) in secondary prevention of chronic diseases.²⁰

The Swiss context

The study about which we report here was conducted in Switzerland, a country with one of the highest life expectancies in the world.²¹ Accordingly, the population is relatively old and chronic diseases are highly prevalent in the elderly population. In 2011 chronic diseases were accountable for nearly 80% of the healthcare costs in Switzerland.¹⁴

In the past the Swiss PC sector has mainly relied on GPs operating in solo practices. However, in recent years, the ageing physician workforce and the feminisation among physicians have led to structural changes in the organisation of Swiss PC. In 2018, the mean age of GPs was 54.8 years,¹³ which implies that many GPs will be retired within the next few years and a shortage of GPs is to be expected. Furthermore, in 2017, around 62% of medical students were female¹³ and it is assumed that female physicians will

work more part-time in the future than previous physicians have done in the past. These developments call for more flexible personnel in PC and a redistribution of tasks and responsibility.

Health policymakers in Switzerland have recognised that a system change from ‘cure to care’ needs innovative ways of care organisation, coordination, financing to meet the needs of these multimorbid patients.¹⁵ Therefore, in 2017 a Swiss national strategy on chronic non-communicable diseases and an action plan were approved by the Federal Office of Public Health.^{22–23} The national strategy proposes, among other actions, to promote innovative new models of care for the population of chronically ill people.

In recent years, the Swiss primary care sector has introduced new models of care involving APN and medical practice assistants (MPAs) in a handful of practices. MPAs have long been an established workforce to fulfil administrative and coordinative tasks in GP practices. New care approaches now involve MPAs with advanced competencies in health coaching for chronically ill patients.^{24–26}

However, the roles and specific clinical tasks that these health professionals fulfil in PC are yet rarely studied. Therefore, the study on which this article is based on, is aimed at exploring the newly evolving roles for APNs, registered nurses (RNs) and MPAs in PC with regard to chronic care management (CCM) in Switzerland. In this article, we specifically aimed to answer the following main research question:

How are new roles for APN, RN and MPA implemented within new primary care models in Switzerland?

In order to answer this research question, we specifically answered three subordinate research questions:

- ▶ Which tasks do APN, RN and MPA fulfil in primary care practices?
- ▶ How do they themselves and GPs see their role in primary care and in chronic disease management?
- ▶ How is the clinical activity of these health professionals organised within new care models in primary care?

METHODS

For this study, an ethnographic^{27–28} design comprising semi-structured interviews and non-participant observations was adopted. Within an interpretivist research paradigm, the focused ethnographic design was chosen to explore the nature and context of new roles for health professionals in PC and their relevance for public health. Focused ethnography has enabled researchers to interpret the meanings and functions of human actions by investigating in detail a small number of cases.^{29–30} Semi-structured interviews were conducted with a participant-led sequence of questions to enable free-flowing conversations that would capture the authentic views of APNs, RNs and MPAs with regard to their role in PC.³¹

Subsequently, non-participant observations were conducted in order to better understand the context of the health professionals’ working environment and to explore how health professionals enacted their new

Table 1 Professional figures under study

	Qualifications according to the EHEA*	Skills and professional profile (in Switzerland)
Medical practice assistants (MPAs)	Higher vocational training of 3 years (not classified in the EHEA)	MPAs work in primary care practices as practice assistants. Main tasks involve administrative organisation of the practice as well as simple clinical tasks such as blood sampling or vaccinations.
Registered nurses (RNs)	First cycle qualification (bachelor's degree)	Nurses work in hospitals as well as outside in community care organisations. They are skilled in nursing and care of patients with diverse healthcare needs .
Advanced practice nurses (APNs)	Second or third cycle qualification (master's or doctorate's degree)	APNs often work in hospitals as well as primary care settings and are able to take over specific medical tasks such as clinical assessments and drug adjustments as well as the care of complex, multimorbid patients.

*According to the framework of qualifications for the European Higher Education Area.⁴⁸
EHEA, European Higher Education Area.

roles also considering interactions with patients. Non-participant observations in which the subject under study is aware of the researcher's identity and the research purpose²⁷ have been considered eligible to observe health professionals in practice.

Setting and participants

Contact lists for the recruitment of participants were available through a previous study that the first author had conducted with APNs and MPAs.³² In this previous study a convenience sampling strategy was applied to recruit group practices for an online survey in the whole of Switzerland. Primary care practices (PCPs) were included if they operated as a group practice with three or more primary care doctors. Through the online survey group practices who employed APNs, RNs or MPAs were identified and potential participants for the current study could be recruited via phone or email by the first author from December 2018 to January 2019. [Table 1](#) gives an overview over the professional figures under study and their qualifications. In total, 16 interviews were held with health professionals and GPs at their workplace. Subsequently, nine health professionals were observed in their PCP or outside the practice if they visited patients at home for a short period of 1.5 to 2.5 hours. Since only very few PCPs which employ APNs, RNs or MPAs with specific roles in chronic care, it was not feasible to recruit a greater number of participants. All interviews and observations were conducted in the German-speaking part of Switzerland in which new roles for APNs and MPAs in PC are further-developed compared with the French-speaking and Italian-speaking parts of the country. Two APNs, two nurses and one MPA were not willing or allowed to participate in the study overall because of time pressure at work or because the institution they worked for did not agree with their participation.

Semi-structured interviews and observations

Before the interviews were conducted, an interview guide was created by the first and the second authors. The three subordinary research questions guided the

development of the interview guide. Authors followed the advice by Braun and Clarke³³ on designing and piloting the interview guide. Interview questions were drafted by the first author and revised by the second author. Through discussion among authors the interview questions were finalised. The main topics of the interviews were the roles and clinical tasks of the health professionals in the PCP as well as how new roles of health professionals influenced teamwork and the coordination of care. Participants were also asked about their perception of new roles in CCM and the possible advantages and disadvantages of the introduction of these roles. GPs were interviewed about their motivation for employing health professionals in their practices and their perceptions of new roles for health professionals in PC. Each interview lasted about 45 min.

With the consent of participants, interviews were audio-recorded and transcribed verbatim. The researcher took memos after the interviews, to record important thoughts about the interview for qualitative analysis.

Non-participant observations, used as an instrument for focused ethnography,³⁰ were conducted in order to collect data on the enactment of the roles of APNs, RNs and MPAs in new care models in Swiss PC. As these roles are new to the PC sector these data provide important information on how these new roles are enacted in practice shortly after implementation. The on-the-job observation focused on the tasks fulfilled by the health professionals and whether their statements made during the interviews could be verified in practice. During the observations, an observation scheme was used to record field notes. The observation scheme was based on themes elucidated in the interviews. After the observations, notes taken were finalised and missing elements were complemented. After the completion of the field notes they were critically reflected by the first author. The aim of this was to assess possible biases in and own feelings towards the observed situation.^{34 35} All interviews and observations were conducted by the first author from February 2019 to April 2019.

Ethical considerations

The Ethics Committee did not require ethical approval, as this study is not covered by the Swiss Human Research Act.³⁶ Ethical approval was waived by the cantonal ethics committee in Bern because no patient data was collected. However, written consent was still obtained from all participants prior to the interviews and observations. All confidential information was protected by removing personal details from the data.

Data analysis

The first author coded transcripts of the interview data, as well as field notes of the observations and observation schemes using Atlas.ti 8. Text data coming from the interviews was coded and then extracted to compare and discuss the linked citations of each code or concept among researchers. In order to identify themes from the data and to analyse them, authors followed the six-stage framework for thematic analysis proposed by Braun and Clarke.³³ Identified concepts and themes were also used to code the field notes of the observations. Data from interviews and observations were triangulated and analysed using thematic analysis. Thematic analysis was chosen as data analysis method because of its flexibility in terms of theoretical framework as well as research question.³³ Numerous other studies in the field of nursing have already used thematic analysis for ethnographic data.^{37–39}

Reliability

While the first author coded all data gained through interviews and observations, a research fellow coded 25% of the total amount of data and served thereby as reliability coder. This approach served to establish inter-rater reliability with the first coder.⁴⁰ Minor discrepancies between the codes of the research fellow and the first author were resolved by discussion and in case of non-accordance, the second author was involved in the discussion. This approach gave evidence for the reliability of the first author's codes. Therefore, the codes of the first author were used for the final analysis.

RESULTS

Four APNs, two RNs without APN education, six MPAs and four GPs participated in the study. All participants were female except the physicians. All four APNs, one RN and four MPAs agreed to be observed in practice. Participants worked in 10 different PCPs. Practice and participant characteristics are summarised in [tables 2 and 3](#).

Three core themes were identified in the data: tasks of APNs, RNs and MPAs; professional roles of APNs, RNs and MPAs and organisation of new care models involving APNs, RNs and MPAs.

Tasks of APNs, RNs and MPAs

The analysis of the data coming from the observations and interviews showed that tasks which were fulfilled by APNs differed largely from those of RNs and MPAs. The

tasks of RNs and MPAs were similar as the two RNs in the sample worked in the role on an MPA in the PCPs. Therefore, for purpose of analysis, the sample was divided into the group of health professionals with advanced education (APNs) and the group with basic education (RNs and MPAs).

The first theme comprised the following concepts: type of patients cared for, areas of responsibility of APNs/RNs/MPAs, demarcation between APNs and RNs/MPAs, clinical tasks of APNs and RNs/MPAs, organisational tasks of APNs and RNs/MPAs and consulting tasks of APNs and RNs/MPAs. These concepts allowed the authors to answer the first subsidiary research question.

While health professionals with basic education (MPAs and RNs) often cared for younger people with diabetes type 2 without comorbidities, APNs with advanced education cared for older patients or patients with diverse and more complex need. Furthermore, APNs sometimes took over care of a very diverse range of patients in a PCP. One APN described it as such:

In the practice it's ranging from babies to pregnant women to men, women, all. The range of illnesses is also huge; it can be a fracture, a torn ligament, gastrointestinal influenza or chronic illnesses such as a coronary heart disease. (APN4)

We observed that both groups of health professionals (with basic and advanced education) were involved in CCM and prevention in the observed PCPs. The types of tasks that were fulfilled differed however largely. The areas of responsibility of the two groups differed because they cared for different patient populations. APNs often did home visits or visits in elderly and nursing homes in collaboration with GPs or they may substitute the GP in these home visits. Additionally, they conducted follow-up consultations of chronically ill people in the PCP. In contrast to that, MPAs and RNs were more responsible for routine tasks. As described by an APN during interviews:

If it comes to organisational stuff and routine tasks which should not be forgotten, MPA's are more competent. (APN1)

Besides that, MPAs and RNs were involved in consultations of chronically ill patients (mostly diabetic patients). In the thematic analysis based on the observations, we found that tasks could be divided into clinical, organisational and consulting tasks. [Table 4](#) describes the differences in these tasks of APNs with advanced education versus RNs and MPAs with basic education.

Professional roles of APNs, RNs and MPAs

This theme comprised the following concepts: characteristics of the role of the APN/RN/MPA, professional education of APN/RN/MPA and importance of clinical experience. With the analysis of this theme the first part of the second subsidiary research question was answered. The point of view of GPs regarding the roles of APNs,

Table 2 Practice characteristics

	Professional group		Age	Highest education		Further education			Clinical work experience years	Research participation activities			
	APN	Nurse		MPA	GP	Vocational training	Higher vocational training	Master in Nursing Sciences		Doctor of Medicine	ANP +or other DAS	Diabetes and/or nutrition module for MPA	CCM modules 1 & 2
GP1			x									x	
GP2			x										x
GP3			x										x
GP4			x										x
APN1	x												x
APN2	x												x
APN3	x												x
APN4	x												x
MPA1			x										x
MPA2			x										x
MPA3			x										x
MPA4			x										x
MPA5			x										x
MPA6			x										x
RN1	x												x
RN2	x												x

ANP +and DAS: Diploma of Advanced Studies for APN. CCM Modules: chronic care courses for MPA. APN, advanced practice nurse; GP, general practitioner; MPA, medical practice assistant; RN, registered nurse.

Table 3 Participant characteristics

Practice #	Practice type		Number of health professionals with specific roles in CCM			Location of practice			Practice type
	Group practice	Solo practice	APN	MPA	RN	Canton	Urban	Rural	General practice
1	x		2			ZH	x		x
2	x			1		BE		x	x*
3	x		1	1		ZH		x	x
4	x		1	1		SZ		x	x
5	x			1		BE	x		x
6		x			1	BE		x	x
7	x				1	BE		x	x
8	x			1		ZH	x		x
9		x	1			GL		x	x
10	x			1		ZH	x		x

*General practice with focus on psychosomatic diseases with a high share of chronically ill patients.

APN, advanced practice nurse; BE, Bern; CCM, chronic care management; GL, Glarus; MPA, medical practice assistant; RN, registered nurse; SZ, Schwyz; ZH, Zürich.

RNs and MPAs is highlighted under the third theme of this analysis.

The roles of the two groups of health professionals with basic and advanced education were characterised differently. The largest differences were found in the degree of personal responsibility. Furthermore, the thematic analysis revealed that education, professional experience and the own attitude had an influence on how the own role was enacted.

Characteristics of the role of the APN

APNs describe themselves as being independent and relatively free but with a high degree of personal responsibility in their role as APN. One APN said:

I need to take many decisions alone and that burden I carry myself. (APN4)

Another APN described her high degree of personal responsibility as follows:

I work self-reliant, I would say nearly 90% of my work, I give feedback to the GPs and sometimes the GPs also come back to me to ask. (APN1)

APNs often validate their clinical opinion with GPs or give feedback to GPs during or after the consultation. For GPs this is important:

As I said, she is doing a good job because she really protects herself by coming back to me and discussing stuff with me. (GP4)

Because APNs worked mostly independently, they felt the need to constantly educate themselves further to stay up to date to form secure clinical opinion for the benefit of patients. Their professional education as well as the professional experience they have made before taking on the new role was very important to them in order to provide secure care for patients. One APN explained:

Table 4 Clinical, organisational and consulting tasks of APNs, RNs and MPAs

RNs/MPAs (basic education)			APNs (advanced education)		
Clinical	Organisational	Consulting	Clinical	Organisational	Consulting
Vital signs, blood sampling	Appointment arrangement	Specific instructions regarding diabetes type 2	Clinical assessment (cardiocirculatory, respiratory, etc)	Consultations in complex care situations	Coordination with home care institution (Spitex)
Follow-up consultation of diabetic patients	Organisation of appointments with eye specialist, podiatrist or dietician	Consultation on how to use and take medication, importance of foot and eye control	Follow-up consultation of chronically ill patients	Medication consultation	Coordination with nurses in old peoples or nursing homes
Wound control		Generic information about the disease and about disease management	Wound control (complex cases) Adjustments of drugs (with limitations)	Symptom management and dealing with the disease	Coordination with GP in the practice, task division

APNs, advanced practice nurses; GP, general practitioner; MPAs, medical practice assistants; RNs, registered nurses.

Had I not worked in the emergency department, the intensive care unit or my experience of many years in other clinical settings I would completely ‘drown’ in this new role. (APN4)

APNs did not see their roles as being substitutes for GPs but as a supplement. One APN said regarding her role very clearly:

We (the APN and the MPA in the practice) are not a replacement for resident physicians in primary care. We are a supplement, this is important, we don’t substitute anyone, we don’t fill a gap but we supplement. (APN1)

Characteristics of the role of the MPA/RN

In contrast, MPAs and RNs described their role as being varied and interesting but with less personal responsibility.

The responsibility always stays with the GP, I work on delegation. (MPA6)

In practice, MPAs and RNs had personal responsibility over consultations that they provide alone but they always report back to the GP after the consultation as explained by a MPA:

I work relatively self-reliant, I carry out the examinations on my own, I document everything and then I report back to the GP. (MPA6)

MPAs and RNs also see their role as relieving GPs because they do have more time for specific consultations and instructions. They saw the value of their role mainly in having more time for the patient.

Furthermore, MPAs and RNs saw themselves sometimes also as intermediaries between the GP and the patient. Because they have more time to forge relationships with patients, they feel that patients are more willing to open up to them regarding personal matters, compared with doctors who may spend a limited amount of time with patients.

Organisation of new care models including APNs, RNs and MPAs

This theme comprised the following concepts: organisation of work structures with health professionals in the PCP, challenges in everyday work, task division between health professionals and task division between MPA/RN/APN and GP. These concepts allowed the authors to answer the third subordinary research question.

The implementation of new care models requires new forms of care organisation within healthcare teams in PC. From the observations we found that the integration of APNs, RNs and MPAs into the observed PCP has worked well and is already well organised. As involving APNs, RNs and MPAs in primary care and in CCM is new to the Swiss PC sector and the roles of health professionals in PC are not clearly defined yet, practices had to define competencies and responsibilities in the beginning. One MPA explained:

Before I started working here, we defined together with the GPs which tasks I am allowed to fulfil in self-responsibility and which not. (MPA)

Some PCPs had clearly defined pathways and guidelines that defined the competencies of MPA and the content of their consultations.

In the case of the APN, who’s scope of practice in Switzerland is not yet regulated, it was important to clarify the competencies with respect to medication prescriptions and adjustments as explained by one APN:

The GPs made a list of which medications I am allowed to increase or decrease and which I would be allowed to also prescribe by myself. (APN3)

Participants mentioned that especially in the beginning it was sometimes a challenge to divide tasks and to define who does what. Teams in the observed PCP were open-minded for new roles and collaborated well as reported by an APN:

It does not matter if I am the APN or the doctor or an MPA, but one says, do you know how to do it? Do you have experience in it? So you do it. (APN1)

Task division between APNs and MPAs was mostly clearer and both said that there has been little overlap of competences and tasks so far. One GP explained the idea of these new care models in the following way:

The idea is really that everyone does what he is competent for and what he likes to do with the aim to provide best care for patients. (GP1)

In general, we found, that new roles of APNs, RNs and MPAs within new care models are well accepted among GPs in the observed practices. GPs in our sample appreciated that APNs as well as RNs and MPAs could take over certain tasks and thereby relieve them in their practice. However, in the Swiss primary care setting there are still many obstacles to the further implementation of such new care models. One GP explained why he thinks new roles and new models of care are not yet implemented in more PCP’s:

The professional roles of these health professionals are not clarified yet and there are not enough GPs that have implemented such new care models yet. And furthermore, questions regarding billing of services provided by them are not answered yet. (GP2)

DISCUSSION

Our study is the first of its kind to explore and analyse new roles and tasks of APNs, RNs and MPAs in CCM in Swiss PC.

The Swiss experience from the observed practices in this study has shown that within integrated models of care not only APNs and RNs but also MPAs with further training can take over tasks in the care of the elderly with



chronic diseases and thereby relieve GPs. The education levels of APNs, RNs and MPAs however differ largely which leads these health professionals to fulfil different tasks in practice. APNs who are trained on master's level were for example involved in the comprehensive assessment of patients, case management in collaboration with the GP, disease management in complex patients, home visits and medication review. MPAs and RNs who are trained vocationally or on bachelor's level on the other hand were involved in patient education and disease management in less complex patient situations. We found that practices in our sample had implemented a care model which involved several of the above defined elements of integrated care. Integrated person-centred models of care which involve different healthcare providers are today seen as a promising approach to tackle future public health challenges imposed by the prevalence of chronic diseases in the population.¹¹

Other European countries such as the Netherlands, Sweden and the UK have successfully introduced new care models involving nurse practitioners and APNs in primary care and have documented positive experiences.^{41–44} International literature has shown that substituting physicians with APNs or nurses for the care of the aged, has no effect which means that care quality is equally high.¹⁶

The outcomes and effects of health coaching provided by MPAs or RNs was researched with regard to diverse chronic illnesses,^{24 25 45} but new care models involving medical assistants for chronic care counselling are so far only rarely implemented. In Europe only in Dutch PCP integrative interdisciplinary care models involving APN and so called 'Dokterassistenten' have been widely adopted for CCM.⁴⁶ The Dutch 'Dokterassistenten' have a similar job profile as MPA with further education in Switzerland.⁴⁷

In Swiss PC these new care models are so far only rarely implemented due to lacking role definitions and lacking scopes of practice for APNs. Today APNs see their role as complementary to the GPs role and not as substitute as they have limited practice authority (eg, not allowed to prescribe medication) and are therefore dependent on the GP. Furthermore, lacking regulatory frameworks on a federal level inhibit the further development of the professional role and the enactment of the role in practice. The underuse of APNs, RNs and MPAs in primary care implies that their potential is not fully exhausted. In many cases, their roles and competencies are not known to GPs or policymakers and they are therefore not recruited for PC. Regulation is insufficient, especially in defining the scope of practice of these health professionals, and therefore also the rules for the reimbursement of activities carried out. In many countries, the roles and responsibilities of APNs, RNs and MPAs with further training are better clarified than in Switzerland because these roles have already been introduced many years ago. In Switzerland, new roles are not yet defined in PC and the scope of practice of APNs is not yet regulated by law,

which hinders a nationwide implementation of new care models for the future. Further research is also needed to show the effectiveness of the use of these health professionals in PC with regard to clinical outcomes.

CONCLUSION AND IMPLICATIONS

This study has deepened the understanding of roles and tasks of APNs, RNs and MPAs in Switzerland. It emerged from our analysis that APNs, RNs and MPAs contribute substantially to the care of chronically ill patients in PC. Within integrated care models, they have a high potential for public health to contribute to optimal care for the elderly in future. The experience from our sample practices can inform international health policy-makers and practitioners about the tasks and responsibilities those health professionals can take over in PC when implementing new models of care. Moreover, the Swiss experience with an integrated model that combines APNs and MPAs or RNs is unique and shows that interdisciplinary care approaches are effective for the care of the elderly. The practical experience with new models of care involving APNs, RNs and MPAs may also influence the future regulation of the scopes of practice of these health professionals in Switzerland.

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REFERENCES

- 1 World Health Organization. Stop the global epidemic of chronic disease, 2007. Available: https://www.who.int/chp/advocacy/chp_manual.EN-webfinal.pdf?ua=1 [Accessed 29 Jul 2019].
- 2 Prince MJ, Wu F, Guo Y, *et al*. The burden of disease in older people and implications for health policy and practice. *Lancet* 2015;385:549–62.
- 3 Ferrucci L, Fabbri E. Inflammageing: chronic inflammation in ageing, cardiovascular disease, and frailty. *Nat Rev Cardiol* 2018;15:505–22.

- 4 Franceschi C, Garagnani P, Parini P, *et al.* Inflammaging: a new immune-metabolic viewpoint for age-related diseases. *Nat Rev Endocrinol* 2018;14:576–90.
- 5 Fulop T, Witkowski JM, Olivieri F, *et al.* The integration of inflammaging in age-related diseases. *Semin Immunol* 2018;40:17–35.
- 6 Chen FF. *Ten years in public health, 2007-2017*, 2017.
- 7 WHO Regional Office for Europe. Action plan for the prevention and control of noncommunicable diseases in the WHO European region, 2016. Available: http://www.euro.who.int/__data/assets/pdf_file/0008/346328/NCD-ActionPlan-GB.pdf?ua=1 [Accessed 25 Oct 2019].
- 8 Cesari M, Prince M, Thiyagarajan JA, *et al.* Frailty: an emerging public health priority. *J Am Med Dir Assoc* 2016;17:188–92.
- 9 WHO, UNICEF. Declaration of Astana. Available: <https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf> [Accessed 28 Oct 2019].
- 10 World Health Organization. Framework on integrated, people-centred health services. Available: http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_39-en.pdf?ua=1&ua=1 [Accessed 16 Jul 2019].
- 11 Araujo de Carvalho I, Epping-Jordan J, Pot AM, *et al.* Organizing integrated health-care services to meet older people's needs. *Bull World Health Organ* 2017;95:756–63.
- 12 Briggs AM, Valentijn PP, Thiyagarajan JA, *et al.* Elements of integrated care approaches for older people: a review of reviews. *BMJ Open* 2018;8:e021194.
- 13 Hostettler S, Kraft E. Wenig Frauen in Kaderpositionen. *Schweizerische Ärztezeitung* 2019;100:411–6.
- 14 Wieser S, Tomonaga Y, Riguzzi M, *et al.* Die Kosten Der nichtübertragbaren Krankheiten in Der Schweiz. *Bundesamt für Gesundheit BAG, Bern* 2014.
- 15 Schweizerisches Gesundheitsobservatorium. Gesundheit in Der Schweiz – Fokus chronische Erkrankungen, 2015. Available: <http://www.bfs.admin.ch/bfs/portal/de/index/infothek/publ.Document.195686.pdf> [Accessed 28 Jul 2017].
- 16 Lovink MH, Persoon A, Koopmans RTCM, *et al.* Effects of substituting nurse practitioners, physician assistants or nurses for physicians concerning healthcare for the ageing population: a systematic literature review. *J Adv Nurs* 2017;73:2084–102.
- 17 Swan M, Ferguson S, Chang A, *et al.* Quality of primary care by advanced practice nurses: a systematic review. *Int J Qual Health Care* 2015;27:396–404.
- 18 Dierick-van Daele ATM, Metsemakers JFM, Derckx EWCC, *et al.* Nurse practitioners substituting for general practitioners: randomized controlled trial. *J Adv Nurs* 2009;65:391–401.
- 19 Laurant M, Reeves D, Hermens R, *et al.* Substitution of doctors by nurses in primary care. In: *Cochrane database of systematic reviews*. 114. Chichester, UK: John Wiley & Sons, Ltd. The Cochrane Collaboration, 2005.
- 20 Martínez-González NA, Tandjung R, Djalali S, *et al.* The impact of physician-nurse task shifting in primary care on the course of disease: a systematic review. *Hum Resour Health* 2015;13:55.
- 21 United Nations Department of Economic and Social Affairs, Population Division. Profiles of ageing 2019, 2019. Available: <https://population.un.org/ProfilesOfAgeing2019/index.html> [Accessed 16 Jul 2019].
- 22 Bundesamt für Gesundheit BAG, Schweizerische Konferenz der kantonalen Gesundheitsdirektorinnen und -direktoren (GDK). Nationale Strategie Prävention nichtübertragbarer Krankheiten (NCD-Strategie) 2017–2024, 2016. Available: <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/strategie-nicht-uebertragbare-krankheiten.html> [Accessed 17 Jul 2019].
- 23 Bundesamt für Gesundheit BAG, Schweizerische Konferenz der kantonalen Gesundheitsdirektorinnen und -direktoren (GDK), 2016. Available: <https://www.bag.admin.ch/dam/bag/de/dokumente/nat-gesundheitsstrategien/ncd-strategie/ncd-massnahmenplan.pdf.download.pdf/ncd-massnahmenplan.pdf> [Accessed 17 Jul 2019].
- 24 Thom DH, Hessler D, Willard-Grace R, *et al.* Health coaching by medical assistants improves patients' chronic care experience. *Am J Manag Care* 2015;21:685–91.
- 25 Willard-Grace R, Chen EH, Hessler D, *et al.* Health coaching by medical assistants to improve control of diabetes, hypertension, and hyperlipidemia in low-income patients: a randomized controlled trial. *Ann Fam Med* 2015;13:130–8.
- 26 Sahli R, Jungi M, Christ E, *et al.* «Chronic Care Management»-Programm in der hausärztlichen Praxis. *Swiss Medical Forum – Schweizerisches Medizin-Forum* 2019.
- 27 Atkinson P, Hammersley M. Ethnography and participant observation. In: *Handbook of qualitative research*. Thousand Oaks, CA, US: Sage Publications, 1994: 248–61.
- 28 Savage J. Ethnography and health care. *BMJ* 2000;321:1400–2.
- 29 Cruz EV, Higginbottom G. The use of focused ethnography in nursing research. *Nurse Res* 2013;20:36–43.
- 30 Wall S. Focused ethnography: a methodological adaptation for social research in emerging contexts. *Forum Qualitative Sozialforschung*
- 31 Roulston K, Choi M. Qualitative Interviews. In: *The SAGE handbook of qualitative data collection*. 1. London: SAGE Publications, 2018.
- 32 Josi R, De Pietro C. Skill mix in Swiss primary care group practices – a nationwide online survey. *BMC Fam Pract* 2019;20:39.
- 33 Braun V, Clarke V. *Successful qualitative research: a practical guide for beginners*. Los Angeles: SAGE, 2013.
- 34 Maharaj N. Using field notes to facilitate critical reflection. *Reflect Prac* 2016;17:114–24.
- 35 Phillippi J, Lauderdale J. A guide to field notes for qualitative research: context and conversation. *Qual Health Res* 2018;28:381–8.
- 36 Human Research Act. Federal act on research involving human beings (human research act, HRA), 2014. Available: <https://www.admin.ch/opc/en/classified-compilation/20061313/index.html> [Accessed 4 Jun 2018].
- 37 Kennedy HP, Lyndon A. Tensions and teamwork in nursing and midwifery relationships. *J Obstet Gynecol Neonatal Nurs* 2008;37:426–35.
- 38 Zahran Z, Curtis P, Lloyd-Jones M, *et al.* Jordanian perspectives on advanced nursing practice: an ethnography. *Int Nurs Rev* 2012;59:222–9.
- 39 Gamlen E, Arber A. First assessments by specialist cancer nurses in the community: an ethnography. *Eur J Oncol Nurs* 2013;17:797–801.
- 40 Syed M, Nelson SC. Guidelines for establishing reliability when coding narrative data. *Emerg Adulthood* 2015;3:375–87.
- 41 den DQvan, de RF. Physician assistants in the Netherlands. *J Am Academy PA* 2014;27:10–11.
- 42 Dierick-Van Daele A. *The introduction of the nurse practitioner in general practice*. Maastricht University, 2010.
- 43 Lindblad E, Hallman E-B, Gillsjö C, *et al.* Experiences of the new role of advanced practice nurses in Swedish primary health care—a qualitative study. *Int J Nurs Pract* 2010;16:69–74.
- 44 Drennan VM, Halter M, Brearley S, *et al.* Investigating the contribution of physician assistants to primary care in England: a mixed-methods study. *Health Serv Deliv Res* 2014;2:1–136.
- 45 Chapman SA, Blash LK. New roles for medical assistants in innovative primary care practices. *Health Serv Res* 2017;52(Suppl 1):383–406.
- 46 Nolte E, Knai C. *Assessing chronic disease management in European health Systems country reports*. World Health Organization, 2015. https://www.ncbi.nlm.nih.gov/books/NBK458742/pdf/Bookshelf_NBK458742.pdf
- 47 Profil Doktersassistent, 2018. Available: <https://assistentensite.nl/doktersassistent/> [Accessed 12 Feb 2019].
- 48 European Higher Education Area (EHEA). Framework of qualifications for the European higher education area, 2005. Available: http://www.ehea.info/media/ehea.info/file/WG_Frameworks_qualification/85/2/Framework_qualificationsforEHEA-May2005_587852.pdf [Accessed 20 Oct 2019].