

Multimorbidity



■ ■ Technical Series on Safer Primary Care



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Preface

Safer Primary Care

Health services throughout the world strive to provide care to people when they are unwell and assist them to stay well. Primary care services are increasingly at the heart of integrated people-centred health care in many countries. They provide an entry point into the health system, ongoing care coordination and a person-focused approach for people and their families. Accessible and safe primary care is essential to achieving universal health coverage and to supporting the United Nations Sustainable Development Goals, which prioritize healthy lives and promote well-being for all.

Health services work hard to provide safe and high quality care, but sometimes people are inadvertently harmed. Unsafe health care has been recognized as a global challenge and much has been done to understand the causes, consequences and potential solutions to this problem. However, the majority of this work up to now has focused on hospital care and there is, as a result, far less understanding about what can be done to improve safety in primary care.

Provision of safe primary care is a priority. Understanding the magnitude and nature of harm in primary care is important because most health care is now offered in this setting. Every day, millions of people across the world use primary care services. Therefore, the potential and necessity to reduce harm is very considerable. Good primary care may lead to fewer avoidable hospitalizations, but unsafe primary care can cause avoidable illness and injury, leading to unnecessary hospitalizations, and in some cases, disability and even death.

Implementing system changes and practices are crucial to improve safety at all levels of health care. Recognizing the paucity of accessible information on primary care, World Health Organization (WHO) set up a Safer Primary Care Expert Working Group. The Working Group reviewed the literature, prioritized areas in need of further research and compiled a set of nine monographs which cover selected priority technical topics. WHO is publishing this technical series to make the work of these distinguished experts available to everyone with an interest in *Safer Primary Care*.

The aim of this technical series is to provide a compendium of information on key issues that can impact safety in the provision of primary health care. It does not propose a "one-size-fits-all" approach, as primary care is organized in different ways across countries and also often in different ways within a given country. There can be a mix of larger primary care or group services with shared resources and small services with few staff and resources. Some countries have primary care services operating within strong national support systems, while in other countries it consists mainly of independent private practices that are not linked

or well-coordinated. The approach to improving safety in primary care, therefore, needs to consider applicability in each country and care setting.

This technical series covers the following topics:

Patients

Patient engagement

Health workforce

- Education and training
- Human factors

Care processes

- Administrative errors
- Diagnostic errors
- Medication errors
- Multimorbidity
- Transitions of care

Tools and technology

■ Electronic tools

WHO is committed to tackling the challenges of patient safety in primary care, and is looking at practical ways to address them. It is our hope that this technical series of monographs will make a valuable and timely contribution to the planning and delivery of safer primary care services in all WHO Member States.

1 Introduction

1.1 Scope

People often live with many health conditions. Ageing populations and the increase in long-term conditions mean that the number of people with multiple health conditions is set to rise. This "multimorbidity" or the coexistence of two or more chronic conditions in the same individual has a specific impact on safety issues in primary care. To improve safety in primary care, it is essential to take into account care of people with multiple health conditions. Multimorbidity is also more common in disadvantaged groups, thus contributing to health inequalities. This monograph provides an overview of the issues and some potential solutions for consideration by the World Health Organization (WHO) Member States.

The term "multimorbidity" is used throughout to mean people with multiple health conditions. These are often long-term health conditions which require complex and ongoing care.

1.2 Approach

To compile information for this monograph, WHO sought the advice of experts in the field recommended by the Safer Primary Care Expert Working Group and reviewed relevant research, the published literature and educational curricula.

International experts in delivering safe primary care provided feedback, examples of strategies that have worked well around the world and practical suggestions about potential priorities for countries for improving the safety of primary care services.

2 Multimorbidity

Patient safety incidents involve active events, such as adverse drug events, intervention complications, infections and care failures (e.g. pressure ulcers), as well as precursors, such as inappropriate prescribing, over- or underuse of drugs, medication non-adherence and delayed diagnosis. The manner in which the safety of the patient is maintained throughout their interactions with health care reflects the different challenges that occur as a function of the life course or "cradle-to-grave" health requirements. People with multiple health conditions pose a particular challenge to patient safety at all stages of the life cycle.

Patients with multimorbidity are at higher risk of safety issues for many reasons, including (1):

- polypharmacy, which may lead to poor medication adherence and adverse drug events:
- complex management regimens;
- more frequent and complex interactions with health care services leading to greater susceptibility to failures of care delivery and coordination;
- the need for clear communication and patient-centred care due to complex patient needs;
- demanding self-management regimens and competing priorities;
- more vulnerability to safety issues due to poor health, advanced age, cognitive impairment, limited health literacy and comorbidity of depression or anxiety.

Patient safety can be approached from a systems perspective in which the interactions between elements of the system generate conditions that challenge the normal bounds of operation. The multiple interactions and treatments in multimorbidity have the potential to generate a range of significant patient safety challenges.

2.1 Burden of multimorbidity

Life expectancy has improved dramatically over recent decades and now exceeds the age of 75 years in nearly 60 countries (2). Childhood survival has also improved and more than one-quarter of the world's population are adolescents and young people, 86% of whom reside in low- and middle-income countries (3). However, the number of people with or at risk of long-term conditions, such as diabetes, mental health conditions, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and cancer is also growing rapidly (4).

People living with a long-term condition often have multiple rather than a single condition (5). Such multimorbidity is common and has been rising in prevalence

over recent years (6). In one developed country, a large study found that more than 40% of the population (all ages included) had at least one long-term condition and almost 25% of the entire population had more than one long-term condition (7).

Recent work has also shown high levels of multimorbidity in low- and middle-income countries (8). This means that there is a potential increase in problems associated with multimorbidity, which may impact on patient safety.

People often have both physical and mental health issues simultaneously (9). A systematic review of 86 studies found that people with mixed mental and physical multimorbidity had the highest risk of active patient safety incidents and precursors of safety incidents (10).

The prevalence of multimorbidity increases substantially with age. However, the absolute number of people with multimorbidity has been found to be higher in those younger than 65 years due to the age distribution of the population. This is especially true in areas of high deprivation. Thus, a life cycle approach to multimorbidity and to the challenges it poses to safety in primary care is vitally important (11).

One study found that above the age of 55 years, multimorbidity was most likely to comprise people with multiple physical health conditions. In younger age groups, multimorbidity was most likely to involve mixed physical and mental health conditions. This was two to three times more common in the most deprived compared with the least deprived groups. Depression and pain were featured in the top five conditions across all age groups (12).

Gender is also a well-recognized determinant of multimorbidity (5). As well as differences in the number of conditions between people of different genders, there are also differences in disease clusters between men and women. In particular, cardiovascular metabolic disorders have been found to be less prevalent in women, but psychogeriatric diseases are more prevalent (13).

3 P

3 Potential solutions

3.1 Systems-based approach

Multimorbidity is associated with socioeconomic deprivation. A study in one developed country found that those living in the most deprived areas suffer more multimorbidity, which develops 10 to 15 years younger than in the least deprived decile of the population (7). This highlights the importance of a systems approach to safer primary care for people with more than one condition. Unless a whole systems approach is used to deal with the interactions between multimorbidity and the social, political and economic drivers of deprivation, the safety improvement interventions will fail to address the problem at multiple levels.

People with multiple conditions may have a higher overall vulnerability to diseases and less resistance to acute health threats (for example, higher susceptibility to infections). The interacting influences lead to a complex pattern in the use of health services. Multimorbidity leads to an increased likelihood of referrals between different providers of health care. This can increase costs and lead to more fragmented care, thus compromising patient safety through poor integration of care, and poor communication and coordination (14).

A practical solution is raising awareness among policy-makers and health care providers that multimorbidity is the norm and not the exception among people with long-term conditions. Policies are required that tackle the social determinants of health and provide universal coverage for comprehensive health care.

Providers and the public could be made aware of the relationships between different conditions, demographic characteristics and other aspects of the system to help advocate and works towards equity in health and health care.

Health care planning sometimes views health care as an expense rather than an investment. Multimorbidity is an area where the business case for proactive and preventive care is potentially strong and this might be an important area for policy-makers to explore.

The care delivery system needs to be designed so that expert generalists accomplish good work together with other members of the broader health care system.

Systems design can be thought about at macro, meso and micro system levels. At the macro system level, a policy to promote access and equity to services is a key element. Policy-makers can also consider how to support the delivery of good system-wide primary care in the context of their health care systems. In some contexts, investments may be useful in large system infrastructures. An example of this is investing in information systems if financially feasible. Financing systems that incentivize proactive and preventive care are important.

At the meso system level, providers may need to invest in enabling systems and relationships with the community and other partners so that care teams can function effectively. Much of the resource pool in the community may not reside in the health part of the system. Aspects of social care might be administered by different policy-makers and have different resources. At the organization level, building connections can help care teams to design integrated care processes.

At the micro system level, systems to support safe care are needed, as well as investment in skills and the capacity for continual improvement.

3.2 Primary care coverage

Universal coverage is important because it focuses on increasing access. Access to services is most meaningful if the system being accessed is designed to deliver care that prevents, minimizes and delays multimorbidity and provides safe care when there is multimorbidity. Thus, both access and delivery system design with safety as the focus would need to be considered within a wider systems approach.

Managing people with multiple conditions safely and effectively in primary care depends on a well-organized and strong primary care system, which is usually defined as one that offers comprehensive care over a period of time to a defined population. This means that patients can be followed up, chronic diseases monitored and managed, and different problems can be dealt with by the same team, thus integrating care around the patient.

Countries with strong primary care systems have been found to deliver safer and more cost-effective care. However, a pervasive problem in primary care systems around the world is the continuing existence of the "inverse care law". This states that the availability of good medical care tends to vary inversely with the need for it in the population served (15). This is most obvious within health care systems that are largely privately run for-profit, requiring out of pocket fees (16). It can also affect systems that offer universal coverage within a national health service, both because primary care services are often distributed by population rather than the health needs of the local population and, also, if the financial package for coverage does not align the payments to the needs of the most vulnerable in the population (17).

People who live in poorer areas often have worse access to safe and high quality care, including longer waiting times to see a primary care provider and a shorter consultation length (18). Primary care providers in deprived areas have also been found to be more stressed due to the greater demand and clinical complexity of patients. Burnout of health care staff is more common under such circumstances and poses a threat to patient safety (19).

The "inverse care law" results from policy decisions by governments. Thus, there is a role for both policy-makers and health care providers to be active advocates of the need for change. For example, in one high-income country, primary care doctors working in the 100 most deprived areas formed a pressure group, which actively documented the problems they and their patients faced, including issues surrounding patient safety (20).

Strengthening primary care by providing universal health care coverage is an important step, but countries must also be mindful of the "inverse care law" and the complex needs of patients with multimorbidity for high quality medical care at the point of first contact.

3.3 Promoting generalism

People with multiple conditions may need specialist care in an episodic fashion, but their overall health care needs are likely to be best met by medical generalists who combine a community base and comprehensive clinical skills with "interpretive medicine", integrating multiple sources of knowledge with individual needs assessment (21). This is increasingly the remit of family medicine and countries that use family doctors in primary care teams are known to provide more effective care for patients with multiple problems (22). Thus, to improve safety, comprehensive primary care systems that support generalism could be placed at the heart of managing people with multimorbidity. A review of medical generalism in one high-income country suggested that this is a core commitment of strong primary care and concluded that more emphasis needed to be given to training family doctors and medical generalists (23).

From this perspective, primary care providers need to be trained as "expert generalists" and take a tailored, patient-centred care approach for people with multiple conditions, including postgraduate training to incorporate an awareness of safety issues. There is also a need to embed multimorbidity in medical education at the undergraduate level and in-service health care training in general.

In many health systems, there is increasing fragmentation of care and people with multimorbidity experience a multitude of biomedical investigations. This increases the risk of adverse events and may not lead to good outcomes. Strengthening capacity at the primary care level would help in coordinating these investigations and providing more comprehensive, person-centred care.

3.4 Guidelines for multimorbidity

Clinical guidelines review and summarize evidence about the most effective treatments for specific conditions and provide recommendations for their use. However, guidelines are almost always focused on single conditions. For instance, among others, there are individual guidelines for diabetes, asthma and stroke. Guidelines rarely take into account multimorbidity (24). The randomized trials on which guidelines are based very often exclude people with multiple conditions from taking part. The socioeconomic characteristics of participants in the trials are rarely reported, making it difficult for primary care providers to use the evidence for their diverse patient case mix (25). The potential for interactions between medications and between conditions makes the application of single disease-based clinical guidelines potentially hazardous for people with multiple conditions (26).

A recent Cochrane review of interventions specifically for people with multimorbidity found only 10 randomized trials published worldwide (27).

A solution is for policy-makers and research funding bodies to prioritize randomized trials and other studies that focus on people with multimorbidity, including studies on safety in primary care. There is a need for clinical guidelines to consider multimorbidity.

Health care providers could personalize and tailor care to the needs of individual patients, combining the best evidence with clinical knowledge and judgement and using shared decision making to better understand patients' goals, values and preferences (28).

4 Practical next steps

The ageing population, less healthy lifestyles and an increasing incidence of chronic conditions mean that multimorbidity is on the rise. This trend is a major health care challenge facing all countries across the world.

In order to safely manage people with multiple conditions, primary care teams need to be well trained, resourced and organized. Care needs to be proactive and anticipatory, taking a life cycle approach and including preventive care for those at risk of developing multiple conditions.

In addition, primary care systems need to be better integrated with other parts of health, education and social care systems. Primary care should be community facing and link directly with local community assets, thus contributing to individual and community resilience and social capital.

Strategies that Member States could consider prioritizing to address safer care for people with multimorbidity include (29):

1. Making changes at a policy level

- integrating policies on the social determinants of health with equity of primary care so as to overcome the "inverse care law";
- prioritizing the development of strong primary care within universal health care coverage. This requires workforce planning and education at undergraduate and postgraduate level on generalism and the management of multimorbidity;
- prioritizing research into safely managing people with multiple conditions in primary care.

2. Taking a systems approach

- developing systems for enhanced communication and coordination across different health care system levels and better supporting integrated care across the primary and secondary, health and social care sectors;
- thinking holistically about care. Conditions cannot be understood outside the context of the person who suffers from them. It is necessary to consider each patient's co-existing physical conditions, as well as their mental health and social circumstances. This will help to identify specific safety issues, for example, lack of medication adherence because the patient is unemployed and cannot afford to buy medicines;
- integrating the work of doctors, nurses, pharmacists and other members of the multidisciplinary team in managing people with multiple conditions, including integrated care plans;

- avoiding reliance on single-condition clinical guidelines, which do not take into account people with multiple conditions;
- reconciling recommendations from single disease-based guidelines and including information about care at primary, secondary and tertiary levels to support integration;
- training professionals in how to support people with multimorbidity.

3. Identifying people in need of extra support

- having a way of identifying people with multiple conditions at each primary care setting and those at risk to help with prevention. Electronic medical record systems and registers can assist;
- recognizing that people with multimorbidity are often older and more frail so targeted interventions, such as falls prevention, can improve patient safety;
- recognizing the links between mental and physical health;
- prioritizing the diagnosis and treatment of mental health conditions. People with combined mental and physical health multimorbidity are at the highest risk of safety incidents. Depression is particularly common in multimorbidity, but often under-recognized and associated with poor outcomes;
- considering longer consultations for people with multiple conditions, either by always offering them more time or allowing more flexibility in the appointment system;
- stratifying care delivery to conserve resources for those who need them most.

4. Prioritizing care coordination and self-management support

- increasing the number of generalist practitioners;
- including case/care managers as part of the team;
- increasing training about effective consultation skills;
- enhancing the extent to which people see the same provider or providers that have shared information;
- improving care coordination by ensuring that each patient has a named primary care health care provider who is clearly responsible for their care;
- promoting self-management to help people with multiple conditions take responsibility for their well-being and safety;
- implementing patient education and engagement strategies;
- supporting informal caregivers, such as friends, carers and family;
- using shared medical records and information systems;
- using tools for safe handovers, including structured communication tools such as SBAR (Situation, Background, Assessment, Recommendation) and referral templates within practices, as well as across organizations;
- using read-back, teach-back and other ways to make sure what was communicated was understood;

- taking steps to reduce the inconsistent use of abbreviations across multiple providers;
- using general clinics rather than clinics for specific conditions.

5. Simplifying treatment regimens

- advocating for appropriate polypharmacy, working with health care providers to simply treatment regimes, using medication aids to promote adherence, ensuring that patients understand their treatments and stopping prescriptions of treatments of limited value;
- reducing the tendency to define conditions as illnesses that need treatment; for example, osteoporosis is a risk factor for fracture, but it is not necessarily a disease state. Similarly, hypertension can be seen as a risk factor rather than a disease. Being careful about how risk factors are managed may help to reduce polypharmacy and maximize opportunities to use non-pharmacologic measures to improve health;
- maintaining a current medication list and recognizing that transitions of care are particular risk points;
- introducing technology, such as alerts for drug interactions and reminders for patients about the timing, type and dose of medications, which is particularly useful for polypharmacy.



5 Concluding remarks

Primary care services are at the heart of health care in many countries. They provide an entry point into the health system and directly impact on people's well-being and their use of other health care resources. Unsafe or ineffective primary care may increase morbidity and preventable mortality, and may lead to the unnecessary use of scarce hospital and specialist resources. Thus, improving safety in primary care is essential when striving to ensure universal health coverage and the sustainability of health care. Safer primary care is fundamental to the United Nations Sustainable Development Goals, particularly to ensure healthy lives and promote well-being for all at every age.

Understanding the magnitude and nature of harm in primary care is important because a significant proportion of health care is offered in this setting, yet there is little clarity about the most effective ways to address safety issues at this level.

This monograph summarizes the evidence and experience about managing care for people with multiple health conditions for patient safety in primary care. However, interventions to design care delivery systems for caring for the patient with multimorbidity would need to be implemented in conjunction with other important aspects covered in this series.

The *Technical Series on Safer Primary Care* addresses selected key areas that WHO Member States could prioritize according to local needs. This section summarizes the key messages from all of the monographs and provides a list of 10 key actions that are likely to have the most impact on improving safety in primary care. Links to online toolkits and manuals are also referenced in order to provide practical suggestions for countries and organizations committed to moving forward this agenda.

1. Set local priorities

Countries and regions differ and a strategy that works well in one area may not transfer well to another. Similarly, issues in need of improvement in some regions may not be a priority for others. In seeking to improve safety in primary care, countries could use local information about their safety issues to identify key priorities at the national or regional level. Priority setting could be accomplished by drawing on input from patients and professionals, sourcing local statistics on safety issues and comparing key themes from the literature with local circumstances (30).

Checklists are also available to help identify potential patient safety issues such as environmental risks in primary care services (31).

One practical way to move forward is creating mechanisms for bringing together key stakeholders to consider the local information available and develop strategic and operational plans for improving safety in primary care. Communicating proposed priorities widely and amending them based on feedback from health care professionals and patients would help to obtain their buy-in, as well as raise awareness of the importance of improving patient safety in primary care.

Regular measurement of safety related performance indicators could be considered as one of the priorities. Policy-makers can use measurements to help identify local issues where performance is suboptimal and then evaluate different types of interventions for improvements. Priorities could be reviewed every few years to ensure that they remain in line with local needs and good practice.

2. Take a wider systems approach to improving safety

Although the series has described specific technical areas, each monograph refers to interlinkages with other areas. Focusing on improving just one factor may not have a large or sustainable impact on patient safety overall. It may be important to simultaneously improve communication with patients, train health care professionals and introduce new tools to support more streamlined care.

Taking a systems approach to safer primary care means looking at how different components relate to one another and considering various factors which could influence safety. These include factors such as workforce availability and capability.

A practical systems level initiative is to focus on increased communication and coordination across different types of care including primary, secondary and also social care. This may include strengthening technical systems for sharing records and communicating what is happening.

It is also important to build relationships between care professionals. At a policy level, this may involve considering how to develop supportive infrastructure, such as having a directory of services to help build networks of professionals and align resources. If hospital, primary care and social care professionals are able to meet and discuss safety issues, this could foster supportive relationships and increase understanding of each other's roles. Regional forums or meetings could be set up so that professionals from different organizations can get to know each other and share their successes and challenges in improving patient safety.

Manuals and reference lists are available with further ideas for improving coordination and reducing fragmentation across systems (32,33).

3. Communicate the importance of safety in primary care

Policy-makers, health care professionals, patients and families may not always be aware that there are important safety issues to consider in primary care. Raising awareness of this as a priority area will help stakeholders to understand why safety in primary care is essential to improve people's well-being and for safeguarding scarce health care resources.

Serious consequences due to the lack of safety in primary care, particularity relating to poor transitions of care between primary and other levels, and administrative, diagnostic and medication errors could be highlighted to raise awareness on the need to improve patient safety in primary care.

Practical ways to increase awareness include incorporating safety-related information into the training of health professionals, communicating effectively to professionals and patients through channels that would be most appropriate for them and spreading key messages through media campaigns. A communications plan could be developed in tandem with local priority setting discussed earlier.

4. Focus on building a positive safety culture

Effective leadership and supportive culture are essential for improving safety in primary care. This means creating an environment where professionals and patients feel able to speak up about safety issues that they are concerned about, without fear of blame or retribution. It means promoting an environment where people want to report risks and safety incidents in order to learn from them and reduce their recurrence, and where incidents are seen as caused largely by system failures rather than individuals. This also includes the importance of having feedback mechanisms in place to explain any improvements made after safety issues have been raised. Promoting transparency is key to building a strong safety culture.

A number of tools are available describing approaches to support the development and measurement of a positive safety culture (34,35).

Practical steps that could be taken to strengthen safety culture include: leadership walkrounds, whereby senior managerial and clinical leaders "walk the floor" (in this case, leaders visiting clinics and speaking with staff and patients about what is working well and not so well); starting team meetings with a patient story; using reflective practice to focus on safety issues, such as audits; and having mechanisms for reporting safety issues, such as through regular team meetings. Such approaches may need to be adapted for use in smaller primary care clinics. Regardless of the specific method, the focus should be on raising awareness, encouraging safety discussions and taking concrete follow-up actions to build a safety culture.

5. Strengthen ways of measuring and monitoring patient safety

It is important to measure and monitor patient safety improvements over time. This may include having clear definitions of patient safety incidents and indicators to be measured annually, setting up national or local incident reporting systems where data is compiled regularly, or using tools to assess patient experiences and measure improvements in patient safety.

Using checklists in individual practices can both improve the quality of care and act as a structured form of record keeping. A number of examples of checklists to improve safety monitoring are available (36).

Data quality is fundamental to measuring improvements in patient safety. If accurate and comprehensive medical records are not kept, then errors and omissions are more likely to occur. As health systems mature, clinical governance processes tend to strengthen. This includes having processes for managing risks and identifying strategies for improvement.

A number of tools are available to measure and monitor different aspects of safety in primary care and countries could examine what is currently available and adapt materials based on local priorities (37,38).

6. Strengthen the use of electronic tools

The adoption of electronic tools will be critical to improving safety in many ways. Examples include the use of electronic health records for more accurate and complete patient records; timely and reliable sharing of health data; supporting the diagnosis, monitoring and management of diseases and conditions; effecting behaviour change and reduction of health risk, and empowering and engaging patients and families in their own care. eHealth can help structure communication between professionals in a way that reduces errors and improves coordination. It can reduce unnecessary consultations and hospitalizations and improve access to knowledge about health conditions and their management for both professionals and patients. However, to achieve their full potential, electronic tools need to be integrated with other parts of service delivery and adapted to the local context.

It takes time and resources to implement electronic tools, and requires the capacity to use and maintain them. It is therefore important to be strategic and to understand the foundations and design of systems in order to ensure the best return on investment. Linking the implementation of electronic tools in local settings to a national eHealth strategy is essential as it provides the foundation, justification and support needed to go forward in a coordinated way.

Irrespective of the status of the health system, it is important to strengthen the use of electronic systems to improve patient safety. For some countries, this may involve the introduction of electronic health records to replace paper records. For others, it may mean having integrated electronic systems between primary care and hospital and social care, or making the tools easier for professionals and patients to use. Countries could draw on lessons learned from other countries about implementing electronic health records, including the challenges faced and how these were overcome, and what best practices could be applicable to their own setting.

7. Involve patients and family members

Empowering and encouraging patients to speak up, for example when something does not seem right or when a symptom is inadequately explained, can be fundamental to improving patient safety. Family members play a key role as advocates and informal carers and therefore supporting and educating them can help to improve safety.

Proactive engagement of patients and families can help to accelerate the implementation of health care safety initiatives. When systems open themselves up to patients rather than being reactive, this is likely to improve system efficiency and the quality of care.

A number of tools have been evaluated to enhance patient and family involvement and awareness, including those with limited or low literacy skills (39-42).

8. Strengthen workforce capacity and capability to improve safety

There is a need to strengthen the primary care workforce in many settings by training a large pool of generalist workers, including doctors, nurses and those with supporting roles.

Strengthening the workforce also involves focusing on recruitment and retention, including taking steps to enhance the physical and physiological safety of health care workers. Professional burnout, fatigue and stress can all adversely affect patient safety.

The education and training of health care professionals to manage and minimize potential risks and harm that can occur in primary care are central to improving safety at all levels of care. This includes providing training on patient safety for students (including students who may not be training to work in primary care to ensure understanding across the different care pathways), multidisciplinary and inter-professional education, as well as continuing professional development. A number of free training course materials are available to help with this (43-45). As a further step, consideration could be given to making involvement in safety and quality improvement a requirement for ongoing training and professional licensure.

In addition to formal education, informal approaches could also be applied to build the capacity of health workforce to improve safety. This may include holding regional meetings and coaching sessions to review patient safety incidents and areas for improvement and holding small team meetings to upskill staff.

9. Focus on those at higher risk of safety incidents

Some people are at greater risk of safety incidents in primary care. These include children, older people, those living in residential care or nursing homes and people with multiple health conditions. People with simultaneous mental health and physical health issues are also at increased risk of safety incidents.

Focusing on groups at higher risk may improve the quality and safety of care by providing more personalized care and ensuring smoother transitions between and within services. For instance, upskilling professionals in how to identify and treat depression may have an impact given the high rate of adverse events among those with combined mental and physical health issues.

Across the world, most systems were not designed to care for people with multimorbidity. Systems may thus need to focus more on what can be done to improve care for people with multiple conditions, including whether social interventions would be more worthwhile than increasing medicalization.

A number of guidelines and toolkits suggest practical steps to better support people at higher risk of safety incidents (46-50).

10. Celebrate successes and share learning with others

Local teams, regions and countries should celebrate their successes and share learning with others. Hearing what has worked well can spark ideas in others and help to continue the momentum towards safer primary care.

Ongoing research plays a key role in identifying what works best to improve safety and how to implement best practices and success stories across diverse care settings. Although the technical series has drawn together a wide range of evidence and expertise, it has also highlighted a number of gaps about what works best to improve patient safety in the primary care context. By continuing to promote learning through research, and publishing and disseminating findings, countries could contribute to knowledge in this area.



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References

- 1 Phillips RL, Bartholomew LA, Dovey SM, Fryer GE, Miyoshi TJ, Green LA. Learning from malpractice claims about negligent, adverse events in primary care in the United States. Qual Saf Health Care. 2004;13(2):121-6.
- World Mortality Report 2013. United Nations Department of Economic and Society Affairs, Population Division; 2013 (http://www.un.org/en/development/ desa/population/publications/pdf/mortality/WMR2013/World_Mortality_2013_ Report.pdf, accessed 19 September 2016).
- 3 Blum RW, Bastos FI, Kabiru CW, Le LC. Adolescent health in the 21st century. Lancet. 2012;379(9826):1567-8.
- 4 Sawyer SM, Drew S, Yeo MS, Britto MT. Adolescents with a chronic condition: challenges living, challenges treating. Lancet. 2007;369(9571):1481-9.
- 5 Violan C, Foguet-Boreu Q, Flores-Mateo G, Salisbury C, Blom J, Freitag M, et al. Prevalence, determinants and patterns of multimorbidity in primary care: a systematic review of observational studies. PloS One. 2014;9(7):e102149.
- 6 Uijen AA, van de Lisdonk EH. Multimorbidity in primary care: prevalence and trend over the last 20 years. Eur J Gen Pract. 2008;14(s1):28-32.
- 7 Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet. 2012;380(9836):37-43.
- Wang HH, Wang JJ, Wong SY, Wong MC, Li FJ, Wang PX, et al. Epidemiology of multimorbidity in China and implications for the health care system: cross-sectional survey among 162,464 community household residents in southern China. BMC Med. 2014;12(1):188.
- 9 Lyness JM, Niculescu A, Tu X, Reynolds CF, 3rd, Caine ED. The relationship of medical comorbidity and depression in older, primary care patients. Psychosomatics. 2006;47(5):435-9.
- 10 Panagioti M, Stokes J, Esmail A, Coventry P, Cheraghi-Sohi S, Alam R, et al. Multimorbidity and patient safety incidents in primary care: a systematic review and meta-analysis. PloS One. 2015;10(8):e0135947.
- 11 Schafer I, Hansen H, Schon G, Hofels S, Altiner A, Dahlhaus A, et al. The influence of age, gender and socio-economic status on multimorbidity patterns in primary care. First results from the multicare cohort study. BMC Health Ser Res. 2012;12:89.

- 12 McLean G, Gunn J, Wyke S, Guthrie B, Watt GC, Blane DN, et al. The influence of socioeconomic deprivation on multimorbidity at different ages: a cross-sectional study. Br J Gen Pract. 2014;64(624):e440-7.
- 13 Abad-Diez JM, Calderon-Larranaga A, Poncel-Falco A, Poblador-Plou B, Calderon-Meza JM, Sicras-Mainar A, et al. Age and gender differences in the prevalence and patterns of multimorbidity in the older population. BMC Geriatrics. 2014;14:75.
- 14 Glynn LG, Valderas JM, Healy P, Burke E, Newell J, Gillespie P, et al. The prevalence of multimorbidity in primary care and its effect on health care utilization and cost. Fam Pract. 2011;28(5):516-23.
- 15 Hart JT. The inverse care law. Lancet. 1971;1(7696):405-12.
- 16 GosdenT, Forland F, Kristiansen I, Sutton M, Pedersen L, Leese B, et al. Capitation, salary, fee-for-service and mixed system of payment: effects on the behaviour of primary care physicians. Cochrane Database Syst Rev. 2000;(3):CD002215.
- 17 McLean G, Guthrie B, Mercer SW, Watt GCM. General practice payment systems underpin the persistence of the inverse care law. Br J Gen Pract. 2015;65(641):e799-805.
- 18 Furler J, Harris E, Chondros P, Powell Davies G, Harris M, Young D. The inverse care law revisited: Impact of disadvantaged location on GP consultation times. Med J Aust. 2002;177(2):80-3.
- 19 Mercer SW, Watt GC. The inverse care law: clinical primary care encounters in deprived and affluent areas of Scotland. Ann Fam Med. 2007;5(6):503-10.
- 20 Deep End Report 2: Coping with needs, demands and resources. University of Glasgow; 2010 (http://www.gla.ac.uk/media/media_146571_en.pdf, accessed 19 September 2016).
- 21 Reeve J, Dowrick CF, Freeman GK, Gunn J, Mair F, May C, et al. Examining the practice of generalist expertise: a qualitative study identifying constraints and solutions. JRSM Short Rep. 2013;4(12):2042533313510155.
- 22 Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83(3):457–502.
- 23 Guiding patients through medical complexity. An independent commission into medical generalism. London: The Health Foundation and the Royal College of General Practitioners; 2011.
- 24 Guthrie B, Payne K, Alderson P, McMurdo ME, Mercer SW. Adapting clinical guidelines to take account of multimorbidity. BMJ. 2012;345:e6341.
- 25 Furler J, Magin P, Pirotta M, van Driel M. Participant demographics reported in "Table 1" of randomised controlled trials: a case of" inverse evidence"? Int J Equity Health. 2012;11(1):1-4.

- 26 Zulman DM, Asch SM, Martins SB, Kerr EA, Hoffman BB, Goldstein MK. Quality of care for patients with multiple chronic conditions: the role of comorbidity interrelatedness. J Gen Int Med. 2014;29(3):529-37.
- 27 Smith SM, Soubhi H, Fortin M, Hudon C, O'Dowd T. Managing patients with multimorbidity: systematic review of interventions in primary care and community settings. BMJ. 2012;345.
- 28 Roland M, Paddison C. Better management of patients with multimorbidity. BMJ. 2013;346:f2510.
- 29 Patton GC, Coffey C, Cappa C, Currie D, Riley L, Gore F, et al. Health of the world's adolescents: a synthesis of internationally comparable data. Lancet. 2012;379(9826):1665-75.
- 30 Improving safety in primary care. London: The Health Foundation; 2011; (http://www.health.org.uk/publication/improving-safety-primary-care, accessed 19 September 2016).
- 31 Primary risk in management services. Cardiff: Public Health Wales; 2015 (http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=73076, accessed 19 September 2016).
- 32 The improving chronic illness care program. Primary care team guide. Seattle, WA:The MacColl Center; 2016 (http://www.improvingchroniccare.org/downloads/reducing_care_fragmentation.pdf accessed 19 September 2016).
- 33 Care coordination resource list. Beerse: Janssen Pharmaceuticals Inc.; 2014 (http://www.janssenpharmaceuticalsinc.com/sites/default/files/pdf/Carecoordination-resource-list.pdf accessed 19 September 2016).
- 34 Seven steps to patient safety. London: National Patient Safety Agency; 2004 (http://www.nrls.npsa.nhs.uk/resources/collections/seven-steps-to-patient-safety/?entryid45=59787, accessed 19 September 2016).
- 35 Safety and improvement in primary care. Edinburgh: NHS Education for Scotland; 2011 (http://www.nes.scot.nhs.uk/media/3437356/Safety-and-Improvement-Educational%20Resources-A-Toolkit-for%20Safe-Effective-Person-Centred-Care.pdf, accessed 19 September 2016).
- 36 Accreditation handbook for ambulatory health care Skokie, IL: Accreditation Association for Ambulatory Health Care, (http://www.aaahc.org/Global/Handbooks/2015_Accreditation%20Handbook_FNL_5.22.15.pdf, accessed 19 September 2016).
- 37 Tools. Cambridge, MA: Institute for Healthcare Improvement; 2016 (http://www.ihi.org/resources/Pages/Tools/default.aspx, accessed 19 September 2016).
- 38 Patient safety toolkit. London: Royal College of General Practitioners; (http://www.rcgp.org.uk/clinical-and-research/toolkits/patient-safety.aspx, accessed 19 September 2016).

- 39 Partnering with patient and families to enhance safety and quality: a mini toolkit. Bethesda, MD: Institute for Patient- and Family-Centered Care; 2013 (http://www.ipfcc.org/tools/Patient-Safety-Toolkit-04.pdf, accessed 19 September 2016).
- 40 Health literacy toolkit for low-and middle-income countries. New Delhi: World Health Organization Regional Office for South-East Asia; 2015 (http://www.searo.who.int/entity/healthpromotion/documents/hl_tookit/en/accessed 19 September 2016).
- 41 Health literacy universal precautions toolkit. Rockville, MD: Agency for Healthcare Research and Quality; 2016 (http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/index.html, accessed 19 September 2016).
- 42 The Boston Medical Center patient navigation toolkit. Boston, MA; The AVON Foundation and the National Cancer Institute; (https://nciphub.org/resources/1600/download/BMC_Patient_Navigation_Toolkit_-_Vol_1.pdf, accessed 19 September 2016).
- 43 Patient safety research: introductory course (on-line). Geneva: World Health Organization; 2016 (http://www.who.int/patientsafety/research/online_course/en/, accessed 19 September 2016).
- 44 Master in Health Administration. 65+ free online healthcare courses. Davis, CA; University of California; 2016 (http://mhadegree.org/free-online-healthcare-courses/, accessed 19 September 2016).
- 45 Patient safety network. Training catalog. Rockville, MD: Agency for Healthcare Research and Quality; 2016 (https://psnet.ahrq.gov/pset, accessed 19 September 2016).
- 46 Age-friendly primary health care centres toolkit. Geneva: World Health Organization; 2008 (http://www.who.int/ageing/publications/AF_PHC_Centretoolkit.pdf, accessed 19 September 2016).
- 47 Patient safety collaborative manual. Hamilton/Mount Gambier/Warrnambool; Greater Green Triangle/Australian Primary Health Care Research Institute; 2016 (http://www.greaterhealth.org/resources/patient-safety-collaborative-manual, accessed 19 September 2016).
- 48 Toolkit for general practice in supporting older people with frailty and achieving the requirements of the unplanned admissions enhanced (2014). NHS England South Region; 2014 (http://www.nhsiq.nhs.uk/media/2630779/toolkit_for_general_practice_in_supporting_older_people.pdf, accessed 19 September 2016).
- 49 Stay independent falls prevention toolkit for clinicians. Health Quality and Safety Commission New Zealand; 2015 (http://www.hqsc.govt.nz/our-programmes/reducing-harm-from-falls/publications-and-resources/publication/2232/, accessed 19 September 2016).
- Prevention and control of noncommunicable diseases: guidelines for primary health care in low-resource settings. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/76173/1/9789241548397_eng.pdf, accessed 19 September 2016).



This monograph on 'Multimorbidity' is part of a technical series of nine monographs which explore different aspects of safety in primary care services. The other topics include:

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Patient engagement

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- Education and training
- Human factors

CARE PROCESSES

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- **■** Transitions of care

TOOLS AND TECHNOLOGY

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