European Agency for Safety and Health at Work

ISSN: 1831-9343

Current and emerging issues in the healthcare sector, including home and community care

European Risk Observatory
Executive summary

European Agency for Safety and Health at Work

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Cataloguing data can be found on the cover of this publication.
Luxembourg: Publications Office of the European Union, 2014
ISBN: 978-92-9240-498-7
doi:10.2802/33116

Executive summary

The European health care sector has a critical role to play in the achievement of the goals of the Europe 2020 strategy by contributing to the overall health and well-being of the workforce and society as a whole. In addition, the health and social care sector is also an important employer, whose significance is likely to grow in the context of demographic change. As a result, healthcare employers are not only affected by trends towards an ageing population in terms of the rising demand this places on service delivery, but also in the context of emerging labour market shortages resulting from declining birth rates. By 2030, the population of working age in the European Union (EU) could be reduced from the present 303 million to 280 million. This has implications not only for potential growth and the sustainability of pensions, but also for the funding of the health and social care sector and for the recruitment of workers to provide these services. Although demand for care workers and staff shortages are expected to grow, research shows that the sector often offers poor working conditions and remuneration compared to sectors requiring equivalent levels of skills and training. This has already led to significant mobility of workers within and outside the EU, and could serve to exacerbate skills shortages in the future.

The health and social care sector is one of the largest sectors in Europe, employing around 10 % of workers in the EU, with women accounting for 77 % of the workforce. A significant proportion of healthcare workers are employed in hospitals; however, they can also be found in other workplaces, including nursing and care homes, medical practices and in other health-related activity areas.

This state-of-the-art report considers the occupational safety and health (OSH) issues in the health and social care sector in the EU Member States. The activities associated with healthcare in institutions such as hospitals and nursing homes, as well as those activities undertaken in patients' own homes, have been explored. Workers employed in the healthcare sector have to deal with a wide range of activities and environments that pose a threat to their health and put them at risk of occupational disease or work-related accidents. Many of the settings in which healthcare workers carry out their jobs and the multiplicity of tasks they perform when, for example, delivering frontline care for the physically or mentally impaired, handling patients or providing cleaning services, can present a **great variety of hazards. Healthcare workers are exposed to a large number of concomitant risks such as:**

- biological risks, such as infections caused by needlestick injuries and other communicable diseases;
- chemical risks, including from drugs used in the treatment of cancer and from disinfectants;
- physical risks, such as from ionising radiation;
- ergonomic risks, for example, during patient handling; and
- psychosocial risks, including violence and shift work.

The combination of these diverse risks makes healthcare a high-risk sector for workers.

In addition to the well-known hazards, there are several new developments and trends that the health and social care sector in Europe have to face, and these have resulted in a number of new OSH challenges that need to be addressed and overcome. These include demographic, epidemiological, social, technological and cultural trends within EU countries that have an impact on existing care patterns. Examples include increasing shortages of healthcare professionals; an ageing healthcare workforce with insufficient new recruits to replace those who are retiring; the emergence of new healthcare patterns to tackle multiple chronic conditions; the growing use of technologies requiring new skill mixes; and imbalances in skill levels and working patterns. These changes have an impact on the working conditions and ultimately on the well-being and safety of healthcare workers.

The main objective of this report is to explore and gain an overview of current and emerging OSH risks and issues in the healthcare sector, including home and community care, in the EU. The report focuses on the question: ***What are the current and emerging OSH risks and issues for healthcare professionals and how will these issues affect the safety and health of healthcare workers and influence the overall service that they provide?***

While trying to answer this question, the report explored the following issues in detail:

- The main differences in healthcare systems across Europe, highlighting any current developments.
- The main categories of healthcare professionals in the healthcare sector in Europe.

- The main demographic, societal and technological trends and changes that have an impact on OSH in the healthcare sector across Europe.
- The main risks associated with activities undertaken and with the working environment for healthcare professionals, including non-professionals in home care. The impact of these risks on the work and the services provided by these care professionals is analysed.
- Identification of the healthcare professionals most at risk.
- The emergence of new risks across Europe based on the contextual changes and current risks and analysing the impact they could have on the work of and the service provided by healthcare professionals.

The importance of home and community care has been emphasised in the report and the following aspects have been taken into consideration:

- The differences between the categories of home care workers across Europe. How do training, salaries and working conditions vary in different Member States?
- How home care work is organised across Europe, identifying current structures (public, mixed or private) and the foreseen future challenges for home care workers.
- The level of protection that informal or unregistered homecare workers receive, and if there have been any changes in the way the OSH of homecare workers is managed since the implementation of ILO Convention No 189.
- The OSH risks that workers providing home care are exposed to and how these differ from those faced by other healthcare professionals.

Two main activities were used to gain information to answer the research questions:

1. desk-based research (literature search); and
2. a request from EU-OSHA (European Agency for Safety and Health) to its national focal points (questionnaire).

Desk-based research was used to assess the literature published throughout the EU on healthcare infrastructure, trends, OSH risks and their impact on the work of and the service provided by care providers. The information and data reviewed in the report were sourced from well-known organisations such as the International Labour Organisation (ILO) and the European Commission, experts, structured databases (for example EU statistical databases) and databases of peer-reviewed journals (such as Scopus, ScienceDirect, PubMed). In addition, Google was used to identify any other relevant information.

A questionnaire was designed to gather information from individual EU countries at national level via EU-OSHA'S national focal points. The focus of the questionnaire was to identify current and emerging OSH risks at national level. The majority of the responses came from representatives of national labour inspectorates, ministries with OSH responsibilities, OSH institutes, worker organisations and the healthcare sector. In general, the respondents had more than five years of OSH experience in fields such as safety, ergonomics, occupational medicine or psychology. In total, 21 questionnaires were received from 16 countries: Albania, Belgium, Cyprus, the Czech Republic, Estonia, France, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Slovakia, Sweden, Switzerland and the United Kingdom.

The information from and findings of the desk-based study have been integrated with the data from the questionnaire.

What are the main differences in healthcare systems in Europe (northern, southern, western and eastern) and what are the current developments?

There is a wide variety of healthcare systems in Europe. Most of them are undergoing a process of reform, influenced by developments in several areas, for example changes in evidence-based medicine, cost reduction, quality management, the ageing population (increased focus on integrated care), increased focus on health promotion and prevention, and changes in information and communication technology (ICT) (in the clinical and management areas). Comparing healthcare systems and the impact they have on the OSH of their workers is very difficult because of the lack of

up-to-date and comparable data. In addition, most healthcare indicators identified in the review are quality related and not very objective. Financing mechanisms differ between countries; however, there is no clear relationship between these mechanisms and efficiency. Although one could argue that the performance of a healthcare system (for example in terms of the efficiency, quality and safety of care services) and the OSH of its workers are interrelated, no studies were identified that focused specifically on the relationship between these characteristics and indicators on OSH. In the absence of any available data, an attempt has been made to try to identify any trends, strengths or weaknesses in the various systems that would have an overall influence on the OSH of healthcare professionals.

Across Europe, healthcare is barely managing to cover its costs. Not only are the methods of raising funds to cover costs inadequate, but, of even greater concern, the costs themselves are set to soar. The overriding concerns of Europe's healthcare sector are finding ways to balance budgets and restraining spending. Unless that is done, the funds to pay for healthcare will soon fall short under either of the systems in operation in Europe. For example:

- In the Beveridge system, the healthcare ministry must battle with other policy areas for its share of tax revenue. In addition, demographic changes will lead to an increased burden on tax revenues both quantitative (increased number of old people) and qualitative (more expensive healthcare services and technology).
- In the Bismarck system, because of demographic changes, the system needs to support a steadily increasing number of retirees who no longer pay into it. In addition, financial cutbacks by companies, caused by the economic crisis, have led to a steep climb in the unemployment rate and, as a result, fewer employees are contributing to the system.

This future healthcare funding crisis is also linked to the ageing of the population, the parallel rise in chronic disease and the rising cost of medical technologies, factors which are interlinked.

Healthcare restructuring and changes in the delivery of patient services will naturally affect the work environment. Work-related injuries, violence in the workplace and stress on the job are interrelated aspects of work conditions that are sensitive to both internal changes (such as staff cutbacks) and external changes. Healthcare workers' safety and health have implications for patient care and costs because staff turnover and lost work days affect continuity of care and availability of trained staff. Healthcare professionals will want to help people in need, but the sheer logistics of expanded care delivery, the current and growing shortage of personnel, and the limited resources available in already overloaded healthcare systems will result in:

- Distribution shortfalls, leading to a continued inability to meet local demand for healthcare.
- Disproportionate ratios of healthcare professionals to patients, leading to doctors and nurses working extended shifts of more than 12 hours. With a diminished workforce, maintaining sufficient ratios to ensure the required level of care will be difficult. For example, nurses working longer shifts are more likely to experience burnout and job dissatisfaction while at the same time not being able to provide the level of service that they would like to.
- An increase in lone working. This becomes a concern when workers have to undertake manual handling operations or interact with patients or family members with a known history of violent or aggressive behaviour.
- Higher expectations and unrealistic demands. Doctors and nurses will be rushed, with insufficient time to be able to provide good care.
- A need for higher intensity of care. As more patients suffer from chronic diseases, there will be an increase in the number of additional care hours required to ensure good-quality care.
- An increase in the need for home care, leading to more healthcare professionals working away from traditional institutions. Those professionals who have to go into a patient's home are more at risk of verbal and physical abuse.

Without a strong and growing workforce operating under better working conditions, the OSH of healthcare professionals will not improve and nor will the quality of care that they provide. Working in healthcare is difficult with adequate personnel; it will be much more so with the anticipated shortfall of workers. Increased work-related stress will affect and aggravate the mental and emotional health of these workers. There will be heavier workloads, which will be seen to increase dramatically as more patients enter healthcare systems across Europe. With a reduced workforce, this will overwhelm already

overstressed medical professionals. The need for staff members to do more paperwork, again linked to projected shortages of staff, will reduce the time spent with patients, and this is seen as a burden on the workforce, who would much rather have direct patient care hours.

What are the main categories of workers and healthcare professionals in the sector in Europe and what are the developments in the labour market?

The healthcare sector incorporates several subsectors dedicated to providing healthcare services and products. The United Nations (UN) International Standard Industrial Classification categorises human health and social care activities as the provision of health and social work activities. The activities are wide-ranging, from healthcare provided by trained medical professionals in hospitals and other facilities to residential care activities that involve some healthcare activities to social work activities that do not involve healthcare professionals at all. Many people also work indirectly for the healthcare sector, including those employed in industries and services supporting it, for example, the pharmaceutical industry, the medical device industry, health insurance, health research, eHealth, occupational health and spas. These workers who are indirectly employed in the sector are excluded from this report.

The employment trend observed in the health and social care sector will continue, but at the same time reductions in healthcare expenditure are being made in EU countries. Countries face different human resources challenges and needs; however, some general challenges can be identified, including the need for information systems to monitor the labour market for healthcare workers and the need to address workers' needs for new skills through the promotion of training and lifelong learning. Since effective healthcare systems and the provision of quality healthcare depend on the performance of an adequately educated, skilled and motivated workforce, maintaining proper working conditions is important.

Overall, there is an increasing trend towards more community-based care and therefore an increasing demand for home care workers. The group of home care workers is not made up of one specific profession and might include informal carers and domestic workers. Informal care-givers, migrant workers and domestic workers are vulnerable groups; in general, they have less favourable working conditions and less social security and they receive lower wages. The introduction of ILO Convention No 189 aims to ensure the effective protection of domestic workers. Unfavourable working conditions are among the reasons for current staff shortages in home care. These shortages are expected to increase. The results of the questionnaire answered by OSH experts revealed that home care workers are less protected by OSH legislation than those working in health institutions.

What are the main risks in the work and the work environment of healthcare professionals (including home care workers)?

To get an overview of the main risks in the healthcare sector, available data at EU level were collected and analysed including the European Working Conditions Survey (EWCS) and the European Union Labour Force Survey (LFS). These statistics produced show that:

- Health and social care workers have the fourth-highest rate of serious work-related health problems in the previous 12 months, just behind industries such as manufacturing and construction. The highest proportion of occupational diseases was found in the sectors 'manufacturing' (38 %), 'construction' (13 %), 'wholesale retail trade, repair' (7 %), and 'health and social work' (5 %).
- Women in the health and social work sector were more likely to have had one or more than one accident or to have suffered from an occupational disease than women working in other sectors.
- According to the Fifth European Working Conditions Survey, exposure to biological and chemical risks is most prevalent in the healthcare sector, where doctors and nurses frequently have to handle infectious materials as well as the chemicals that are used to disinfect instruments and the workplace.
- For posture-related risks, the healthcare sector is in fifth position, after construction, agriculture, industry, and wholesale, retail, food and accommodation, according to the EWCS.

- Work-related stress, violence and harassment are recognised as major challenges to occupational safety and health. All of these psychosocial risks are of greatest concern in health and social work, followed by education and public administration.

EU-OSHA's European Survey of Enterprises on New and Emerging Risks (ESENER) also provided relevant information on risk management activities in the healthcare sector and the results showed that issues such as sickness absence and psychosocial risks are of major concern. These results showed that:

- For applying risk assessment or similar measures, health and social work is just above the EU average but behind sectors such as construction and manufacturing.
- The level of sickness absence monitoring in the health and social work sector is the highest in the EU.
- The health and social work sector is the sector with the highest concern regarding work-related stress, and violence or threat of violence.

Based on the statistics collected, the literature reviewed and responses to the questionnaire, the following risks were considered to be relatively high in the healthcare sector and have been examined in more detail:

Risks	Literature review	Responses to questionnaire
Biological	▪ bloodborne pathogens ▪ airborne pathogens ▪ contact diseases	▪ Exposure to biological agents ▪ Contact with specific agents for example: Pseudomonas, legionella, tuberculosis, hepatitis or HIV ▪ Sharp injuries ▪ Lack of vaccination programmes ▪ Overcrowded hospitals ▪ Change in Biocidal products Directive
Chemical	▪ Exposure to chemicals used in healthcare settings, for a variety of reasons, for example to treat patients (medications and anaesthetic agents); in laboratory work; or to clean, disinfect and sterilise surfaces and supplies (cleaners/disinfectants). In some situations, drugs or other medications used to treat patients can have unintended consequences for workers who are exposed to them when preparing and administering solutions or are exposed to the off-gassing during	▪ Contact with specific chemicals for example: carcinogenic drugs and cytostatics, nanomaterials, disinfectants, anaesthetic gases and radioactive materials. ▪ Allergies ▪ Home care work ▪ Lack of training

Risks	Literature review	Responses to questionnaire
	anaesthesia and aerosolised breathing treatments	
Safety risks	▪ Noise ▪ Radiation (ionising and non-ionising) ▪ Slip trips and falls	▪ Slip, trips and falls ▪ Equipment safety (use of failure) ▪ Specific exposure to physical risks for example x-rays or radiation
Ergonomic risk	▪ Lifting ▪ Pushing ▪ Awkward positions ▪ Repeated movements ▪ Prolonged standing and sitting	▪ Lack of training ▪ Bad ergonomic design and unavailable /unsuitable equipment ▪ Shift towards home care ▪ High workloads increasing risks of musculoskeletal disorders.
Psychosocial risks	▪ Working hours ▪ Drug abuse ▪ Emotional demands ▪ Stress- and burnout-related factors ▪ Violence and bullying	▪ High workload and time pressures resulting in stress ▪ Lack of control over work ▪ Poor organisational climate ▪ Language difficulties, lack of optimal working times ▪ Emotional events ▪ Economic crisis ▪ Lone working ▪ Violence and harassment ▪ Multitasking.

Home care specific risks

The home care setting is a challenging work environment in terms of home care workers' safety for a number of reasons. First, residential settings may present household-related hazards, such as poor indoor air quality or toxic substances that are associated with numerous negative health effects. Second, many of the same well defined hazards related to healthcare in clinical settings, such as spread of infections, development of resistant organisms and medication errors, are also found in home care settings. Third, home care may be delivered under conditions that are not controlled. Fourth, healthcare providers may have limited training or expertise in the area of patient safety and often have little or no direct supervision. Finally, risk management is especially problematic in home care because each home is, in essence, a 'worksite', yet all the necessary healthcare workplace protections, for both workers and patients, may not be in place or readily available. For these reasons, controlling hazards in home care can be difficult.

There are many common risk factors for healthcare workers in institutional settings and for home care workers. However, home care may represent a particular safety challenge for care workers travelling

between, and working in, patients' homes. Injuries resulting from road traffic accidents, overexertion (and repetitive movements) when assisting patients, and slips, trips and falls inside and outside their homes are the main causes of lost working time among care workers. Other causes of accidents and diseases among care workers include exposure to hazardous chemicals (caustic, irritant, toxic or allergenic substances), being struck by objects, assaults and violent acts or behaviour. In addition, home care workers may be exposed to infectious diseases (e.g. hepatitis, HIV, flu, TB, measles and chickenpox) when providing direct client care, such as dressing or bathing, or cleaning and cooking for, infected clients. Various working conditions may also lead to mental or emotional fatigue in care workers. Dealing with clients and family members who may be stressed and difficult to work with and working independently in unfamiliar and uncontrolled situations are examples of situations that may cause stress to these workers.

The main risks identified for home care workers in the literature review and in the responses to the questionnaire included:

Ergonomic risks:

- Rooms in patients' homes are often small or crowded. About 40–48 % of a home healthcare worker's time may be spent in poor posture combinations, including bent forward and twisted postures, which are associated with shoulder, neck and back problems. Inadequate space to shower/bath the client results in ergonomic and manual-handling risks.
- The most important problem in patients' homes is non-adjustable beds (problems with the bed's height, width, and placement). Patients' homes usually do not have equipment to help with transfers; normal aids and equipment generally found in hospitals will not be available in patients' homes.
- Home healthcare workers frequently endure long periods of standing or walking.
- Heavy lifting, lifting in awkward postures and lifting without assistance are significant predictors of permanent work disability in home healthcare workers. Work-related musculoskeletal disorders caused by transferring patients to and from bed or helping patients to walk or stand are a major problem in the home healthcare industry (specific risks in this area include changes in client mobility that require excess exertion by the worker, the use of inappropriate equipment, having inadequate space to move the patient and not having help in lifting the patient). In 2007, sprains and strains were the most common lost-work-time injuries to home healthcare workers and, in comparison with other workers, home care workers take more frequent sickness leave as a result of work-related musculoskeletal symptoms.
- Providing help with activities of daily living (dressing, eating, walking and toileting) may be connected with a risk of musculoskeletal disorders because of the weight of the patient.

Physical risks:

- The physical environment inside the home: good housekeeping is an important factor in maintaining a safe work area for home care workers. Many home care workers are injured because they trip, stumble or step on objects in their way. Adequate lighting must be available to enable staff to work safely. Furthermore, if a home is cluttered and poorly lit, it may be difficult to leave quickly in the event of an emergency or an attack on a home care worker.
- Oxygen is both a prescribed treatment and a fire hazard. Fires can occur unexpectedly and smoking is the most frequent cause of house fires.
- Very often, clients' homes are not adapted to care workers' needs. A Spanish study involving 500 patients' homes concluded that only 6.5 % had adjustable articulated beds and only 16.1 % had adaptable showers; globally, only 12.9 % of homes surveyed had adequate conditions to meet care workers' needs and to enable them to work in a healthy and safe manner.
- The physical environment outside the home: the physical environment may present hazards; slips, trips and falls inside and outside the home are frequent causes of accidents to home care workers. Pavements, particularly uneven ones, steps, wooden ramps covered with water, ice, snow, leaves or moss, items left on pavements and pathways, and poor lighting represent other

hazards that may be responsible for accidents outside the home. In addition, when a care worker goes outside with a client, the risks for the carer and client may be far greater than when the carer is outside alone.

Safety risks:

- Slip, trips and falls: accidents may be caused by, for example, walkways, wet floors or wet carpeting (less controllable circumstances).
- Driving to patients' homes: road traffic accidents are one of the most frequent causes of occupational accidents in home care workers and the most important cause of fatal accidents. Such hazard and risk can be minimised by, for example, wearing a seatbelt, checking tyres for wear and tear, attending to vehicle maintenance, reducing speed and distractions, being particularly cautious at intersections and not driving while sleepy or under the influence of alcohol or other drugs.
- Burns and scalds: people working in home care settings are often exposed to hazards that may cause burns, for example hot water, kettles, electrical appliances and chemicals. Burns are most commonly caused by exposure to flames, hot objects, hot liquids, chemicals or radiation. Scalds are caused by contact with wet heat, such as boiling water or steam.

Biological and chemical risks:

- Unsanitary conditions are a special concern, since the ease with which infectious disease spreads within a household is well documented and various procedures in home care can present a risk of infection. Cross-contamination, such as the transfer of pathogens through direct and indirect contact with contaminated inanimate objects, can place home care workers at risk. Unsanitary homes may also harbour pests, including rodents, lice, scabies and termites.
- Household laundry is also a concern because it has been shown to be a route for the spread of disease. For example, the spread of Staphylococcus aureus via laundry has been documented.P PA review on domestic hygiene noted that changes in household laundry practices — such as lower temperatures, less use of household bleach and use of lower volumes of water — had an adverse impact on laundry hygiene in general.P PThese changes could place home care patients and workers at increased risk of infection (Gershon, et al., 2007).
- The patient's health condition: home care workers may come into contact with infectious diseases such as hepatitis, HIV, flu, TB, measles and chickenpox. Most bloodborne occupational infections occur through injuries from sharps contaminated with blood, resulting from accidents or unsafe practices.
- Mismanagement of medical waste may also be a cause for concern in the home care environment because it can be a source of pathogenic microbes.
- Home care workers may be at risk from animal bites or injury caused by animals
- Exposure to sharp equipment: home healthcare workers are responsible for the use and disposal of any sharps. Patients and their families often do not dispose of sharps appropriately (contaminated sharps may be left around the home or in wastebaskets), which is one of the main risk factors for workers. Furthermore, syringes and lancets are often left uncovered in various places in the home.
- Another area of concern is the reuse of certain single-use disposable items. For example, it has been reported that many diabetes patients repeatedly reuse insulin syringes, without disinfection, until the needle is no longer sharp. Similarly, in the home care setting, drainage bags may be disinfected and reused, a practice that rarely occurs in hospitals.
- Lack of water: home healthcare workers may encounter homes without running water or with poor-quality water.
- Domestic duties may expose workers to chemicals: chemical exposure risks increase in the home care environment because the correct procedure for handling chemicals is not always possible. In addition, many home care workers do not always know what kind of medications the patient is taking or the consequences of exposure to them.

Psychosocial risks:

- There may be a mismatch between the assistance required by the client and that available from the care worker.
- No supervisor: home care workers' work is not directly supervised; they generally work alone, they may travel through unsafe neighbourhoods, and they may have to face alcohol or drug abusers, family arguments, dangerous dogs or heavy traffic. Some studies suggest that they may have more on-the-job stress than teachers or childcare workers, as they have reported having less control over and being less stimulated by their work. Home healthcare workers took the most long-term sickness leave (30 days or more per year) and had the second highest frequency of absenteeism.
- The dangerous behaviour of people outside the home: the home may be in a high-crime or unsafe area or an isolated location. In such locations, healthcare workers may be at risk of assaults. The presence of gangs, drug abusers or alcohol abusers may pose an increased risk of work-related assault.
- Family members and visitors (violence): violence to care workers may result from patients and occasionally from hostile family members and visitors who feel stressed, disturbed, frustrated, vulnerable or out of control. Family members may become argumentative because of their frustration with the client's condition or the care arrangements.

What are the main demographic, societal and technological trends and changes that have an impact on OSH in the healthcare sector across Europe?

Recent decades have seen significant technological advances in the workplace, which, together with rapid globalisation, have transformed work for many throughout the world. The effects of such changes on OSH in the healthcare sector have also been significant. In some cases, more traditional hazards and risks have been reduced or eliminated, but new technologies have also created new risks. At the same time, many workers are exposed to 'new' risks emerging from changing patterns of work, for example increased pressures to meet the demands of modern working life. Workforce age profiles are also changing, as is the gender balance in many workplaces. These changes in employment patterns have created evident risks that were either less prevalent or less obvious previously.

There are several trends and changes that have an impact on the workforce and therefore on the OSH of workers in the healthcare sector. The main trends and changes in Europe found in the literature review and supported by the questionnaire responses included:

- demographic changes (ageing of the patient population and workforce);
- changes in family patterns (declining availability informal care);
- lifestyle factors (chronic diseases such as obesity);
- higher number of workers with a chronic disease;
- migration and employment mobility (multicultural and multilingual workforce);
- economic crisis (lack of investment);
- new technologies and innovations (biotechnologies, nanotechnologies, robotics, virtual reality, developments in ICT);
- globalisation and economic crisis (restructuring, job insecurity, work intensification, decreasing quality of care, more people receiving less care, increase in the number of vulnerable patients);
- greater patient mobility; and
- different working conditions for workers crossing borders.

Ageing population: A common trend in nearly all the European countries is the ageing of the population. The number of elderly people (aged 65 and over) is projected to almost double over the next 50 years, from 87 million in 2010 to 152.7 million in 2060. With more people needing care the demand for healthcare will increase dramatically. A discrepancy between demand and availability of care jobs is quickly becoming a problematic trend.

Ageing workforce: The large numbers of workers who will retire within the next 10 to 20 years will drastically shrink the EU's healthcare workforce. In 2009, about 30 % of all doctors in the EU were over

55 years of age, and by 2020 more than 60,000, or 3.2 %, of all European doctors are expected to retire annually. Based on data collected by some Member States, the average age of nurses employed today is between 41 and 45, with not enough young recruits coming through the system to replace those who leave. Employment in the healthcare sector is increasing particularly among older workers and the number of physicians is mainly increasing in the older age groups. Older workers are in general exposed to many of the same workplace hazards as other workers. The most prevalent events leading to job-related injuries or fatalities are falls, assaults, harmful exposures and transportation incidents. Older workers often suffer from more severe injuries than those suffered by younger workers. Older workers who receive a workplace injury may require longer recovery periods than their younger counterparts.

Changes in family patterns: In particular the fact that older people increasingly do not live with their children under one roof any more, as well as the increase in female employment and families in which both parents work, will lead to the decline of informal care provided within the family and to an increased demand for formal care. As a result of many changes occurring to the family structure, the elderly cannot rely on their family members for support to the extent that they have done in the past. One of the reasons for this is migration. People, who migrate for an increased salary or for employment, often leave behind their older parents and, in some cases, even their children. Because of the instability of families and the tendency for women to develop professional careers, the elderly will need more formal care in the future. In contrast to the consequences of ageing on healthcare, which are well anticipated, the impact of these other demographic and social changes on future healthcare needs and related healthcare costs have not really been explored and require further investigation and research and development activities (European Commission, 2009a).

Changes in lifestyle: It is not only age-related illnesses that are a factor contributing to changes in demand for healthcare. So-called civilisation illnesses, caused by changes in nutritional habits, unhealthy diets, smoking, alcohol and drug consumption and lack of physical activity, will lead to an increased demand for care of patients with, for example, obesity, diabetes or coronary heart disease. These lifestyle-related diseases have been recognised as one of the main causes of avoidable illness.

Migration and workforce mobility: Healthcare worker migration has been increasing worldwide over the past decades, especially from lower income countries with already fragile healthcare systems. Over the last 30 years, the number of migrant healthcare workers increased by more than 5 % per year in many European countries. A positive consequence of this workforce mobility is that it creates an opportunity to increase occupational and personal qualifications for the migrating staff. However, a negative consequence of this activity is the inability of countries with low incomes to protect inhabitants' rights to proper healthcare, since qualified staff leave the country. Maintaining patient and worker safety can be an additional challenge in multicultural and multilingual working environments. The situations of these workers, including culture-specific perceptions and attitudes concerning work and occupational risks, must be taken into account when it comes to safety and health and related research.

Cross-border healthcare: This has become a more prominent phenomenon in the EU. The growth in 'imports' and 'exports' of patients together with other stakeholders and services has been fuelled by a number of factors. Technological advances in information systems and communication allow patients or third-party purchasers of healthcare to seek out quality treatment at lower cost and/or more immediately from healthcare providers in other countries. Increases in the portability of health cover, as a result of regional arrangements with regard to public health insurance systems or developments in the private insurance market, are also further increasing patient mobility. Patient mobility in Europe may see further growth as a result of an EU directive adopted in 2011 which supports patients in exercising their right to cross-border healthcare and promotes cooperation between healthcare systems - Directive 2011/24/EU. The directive applies to individual patients who decide to seek healthcare in a Member State other than the Member State of affiliation. However, cross-border healthcare is not restricted to patients. Medical doctors and nurses go abroad for training, to provide services temporarily or to establish themselves in another Member State. Increasingly, individual doctors and hospitals in different Member States cooperate with each other. In some cases, not only patients or providers but health services themselves move across borders, through telemedicine.

New technologies and innovations: Innovations in the healthcare sector are mainly connected to new services, new ways of work and/or new technologies (new medications or types of surgery). Innovations in the healthcare sector are the driving force in balancing reduction of costs and quality of care. These issues are key elements of work performance and competitiveness. In recent years, genomics and new

biotechnologies have become important focal areas for healthcare innovation, and they are likely to remain so for the foreseeable future. They are followed closely by nanotechnologies and robotics (sometimes in combination with genomics and biotechnologies). The resulting innovations may revolutionise healthcare, although there are concerns about spiralling costs. Developments in these areas are expected to lead to — among other things — improved technologies and treatments for 'typical' age-related diseases, as well as to the means to prevent or delay the emergence of age-related illness or loss of functional ability. Other important innovations are in the field of information and communication technology (ICT).

Globalisation and the economic crisis: A general driver for the changing world of work is globalisation and the growth of the service sector (including healthcare), resulting in more competition, increased economic pressures, more restructuring and downsizing, more precarious work and an increase in job insecurity, as well as increased intensification and increased time pressures at work. The current crisis in Europe has increased the economic pressures on companies and this in turn intensifies the effects on EU employees. The European Hospital and Healthcare Federation (HOPE) in its report The Crisis, Hospitals and Healthcare, claims that the main consequences of the resources restrictions caused by the economic crisis on healthcare professionals are visible in employment policies and retirement reforms adopted by most EU Member States. In several cases, the government fostered policies aimed at firing or at least not replacing staff retiring or implementing restrictive policies on new recruitment and appointment of substitutes. A further package of measures consisted in cutting wages, a trend common to the entire public sector. Falling salaries in some countries — wage cuts have been as high as 25 % — have resulted in healthcare professionals moving abroad to further their careers.

What emerging risks can be expected across Europe based on the contextual changes and current risks and what will the impact on the work of and the service provided by care professionals be?

The main emerging and new risks identified in the literature review and the questionnaire responses included:

- An increase in exposure to relatively new chemical agents such as nanoparticles is expected, with unknown consequences for workers. Extra caution by workers working with nanomaterials is required and further research is needed on the effects of these materials.
- Exposure to biological agents may increase owing to an increase in travelling and mobility of patients. Furthermore, exposure to agents (particles from animals and so on) at people's homes is likely to increase, as the number of home care workers is expected to rise.
- Exposure to noise and physical risks (for example radiation) as a result of the use of new medical techniques (such as MRI) may increase as new devices are developed. This may bring new risks for workers and a need for further research into the impact of such exposure.
- Language barriers among workers and between workers and patients owing to immigration may pose an extra safety risk.
- The economic downturn may increase the risk of equipment failure since organisations invest less on maintenance, repair or buying new ones.
- The increase in costs of care together with the limitations on public spending, has increased the pressure on the system to improve on the services provided whilst maintaining the focus on a high standard of care.
- Hospitals have closed down due to the economic situation and this has resulted in fewer hospitals being available in close proximity to patients. Also with a reduction in staff there is a need to increase service efficiency and this will continue to put a strain on the existing workers.
- High physical workloads will remain an issue with the following factors contributing to it: lack of devices (such as lifting tools) in home care or an increase in long-term care for patients with chronic diseases such as obesity. The increasing implementation of ICT tools also influences physical issues. Mobile devices pose other ergonomic threats.
- Working time will remain an issue if workers have to do more hours (owing to high workloads) and if more workers (for example domestic workers and home care workers) are not protected by OSH legislation.

- Work intensification may increase because of budget constraints, restructuring, a lack of staff, a larger patient population and a greater need for efficiency. The increasing use of ICT may also influence this, as may a possible increase in the number of people who have more than one job. Home care workers and workers in other subsectors where there is a lack of staff may also suffer from this. Owing to restructuring within the sector, job insecurity is increasing.
- Work–life balance may remain an issue and affects particularly the large number of female workers in the healthcare sector.
- Violence and bullying, combined with emotional work; are still major issues in healthcare. Experts participating in EU-OSHA's Expert Forecast on Emerging Psychosocial Risks were of the opinion that, although these risks are not new, they are a growing concern, especially in the healthcare sector. The growing empowerment of patients will only contribute more to these risks.
- EU Directive 2011/24/EU on the application of patient's rights in cross border healthcare will have a negative impact in some of the EU-28 Member States. Although in theory the cooperation of healthcare professionals in initiatives that will allow patient mobility will permit them to learn from each other, being trained in new medical procedures and approaches, it will also have an array of potential effects on healthcare workers. Patient mobility will affect employment opportunities and workloads. In the country receiving these patients, it will mean that capacity will need to be extended, with additional staff; however, with the current shortage in healthcare professions (for example nurses), this will probably mean that there will be an increase in workload. In addition, these healthcare professionals may be confronted with expectations and attitudes that differ from those of domestic patients, and this will result in communication and cultural difficulties and even harassment and violent behaviours. For the countries that are losing healthcare professionals, their existing resources will be stretched to the limit, resulting in burnout of staff and a high turnover of workers.
- Shift towards home care: With the imminent implementation of policy changes which highlight a move from institutional caring to community care more attention will have to be paid to OSH in the health care sector. People with pathology are not only seen in hospitals but also in home care and elderly homes. The pressure will increase on GPs and home care workers to take over more tasks from higher level healthcare institutions.

In addition to national societal and demographic changes, other changes and developments are expected to have a positive impact on OSH within the healthcare sector in the future.

Positive expected changes

More attention to sharps injuries:

- Amendments of national legislation will take more into account Council Directive 2010/32/EU of 10 May 2010 implementing the Framework Agreement on prevention from sharps injuries in the hospital and healthcare sector.
- With the implementation of this directive, it is expected that OSH enforcement, in terms of targeted inspections and cooperation between authorities, will improve. The same precautions regarding prevention from sharps injuries in health sector cover also other professions in the health sector (e.g., cleaning services, waste disposal, etc.). It is expected that these measures will have an impact on services and quality of care in a positive way.

Managing safety and health at work:

- More occupational health specialists in the healthcare section are expected. With more OSH specialists in hospitals (or any other establishment) with the power to make changes for example: insist on vaccination programs, provide help and support to workers with disability, provide rehabilitation programs etc. the OSH of healthcare workers should improve considerably.
- There are ongoing discussions on how to achieve better integration between health and social care which would result in a better quality of care. The implementation of "virtual hospitals" where a considerable amount of the treatment being undertaken is delivered in the homes of older

people may improve service provision and outcomes. Having closer integration of clinical and OSH risks will have the potential to improve the management of both.

Legislation and inspection:

- Fulfilment of the legal framework, a strengthening of inspection bodies and an increase in awareness are expected.

Future research and practice

More in-depth research is needed to gain insights into the safety and health outcomes for specific risks and groups of workers and occupations, the interaction between risks, the interaction between OSH and quality of care, and the possible effects of healthcare systems on risks, OSH activities and outcomes.

Recommendations for research:

- There is a lack of recent comparable data at EU level on working conditions, exposures and safety and health outcomes for specific risks and groups of workers and occupations in the healthcare sector. More detailed data are needed to enable prioritisation of specific risks and groups of workers most at risk.
- There is limited information on the impact of current trends and existing risks on the quality of care patients are receiving; more research on the interaction between OSH and quality of care is needed.
- The impact of combined risks on healthcare workers has not been suitably studied; more research into these combined effects is needed, for example the interaction between ergonomic and psychosocial risks.
- Although one could argue that the performance of a healthcare system is interrelated with the OSH issues that their workforce are exposed too, no studies were identified focusing specifically on this relationship at macro level. More research in this area is of interest. For example, it would be worthwhile to study the impact of both efficiency and prevention activities on quality of care and OSH at different levels (organisation, country).

Directions for practice are:

- More practical initiatives are needed at national level to improve the working conditions of home care workers; based on the responses to the questionnaire, relatively few initiatives were identified. This relates to both formal and informal care-givers. About the latter group, relatively little information is available.
- The exchange of knowledge (such as in the form of examples of good practices) in the field of occupational health should be explored further.
- Owing to the ageing workforce, there may be an increased need for OSH interventions that take into account the working conditions of and the impact of risks on older workers; these interventions could target all age groups.
- Policies aimed at improving work–life balance and reducing wage differences between men and women are important.
- As a result of the increase in migration of healthcare workers, there may be a rise in language and cultural barriers in the workplace; extra attention should be paid to these issues, and proper and clear communication around OSH issues is needed. Equal working conditions and quality standards are desirable.
- Owing to the economic circumstances, the benefits of OSH need to be continually highlighted, for example by using the business case to show the added value that good OSH management brings.
- The introduction of new technologies, such as telemedicine, and new ICT systems requires continual training of workers. Furthermore, the related risks should be included in risk

assessments. OSH could be taken into account in the design phase of new applications and other new technologies.

- New technologies, for example the introduction of robotics and exoskeletons, could also contribute to the improvement of working conditions. A further exploration of the possibilities, for example in a home care setting, is of interest.

TE-RO-14-004-EN-N

The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1996 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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