

On health employment growth and structural change in care delivery

Maria M. Hofmarcher^{1,2}, Eva Festl², Leslie B. Tarver²

1 Corresponding author. HS&I Health System Intelligence and Medical University Vienna, A-1080 Wien, Josefstädterstraße 14/60, +4314022724, maria.hofmarcher@healthsystemintelligence.eu

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Abstract

While rising costs of healthcare have put increased fiscal pressure on public finance, job growth in the health sector has had a stabilizing force on overall employment levels – not least in times of economic crises. At the same time productivity of this growing health work force has not tapped its full potential yet. Policy measures have emerged that focus on enhancing the productivity of the health labor force through structural reform. New forms of better-aligned care models appear promising to improve efficiency and quality in the health system while addressing fractured service delivery. This fragmentation increasingly becomes a barrier to improved performance especially as chronic care demands are growing. The long-term stability of the health system will require new care delivery models that better utilize a growing health work force. We identified three aspects, which might be promising in this respect. First, greater leadership and good governance on the central government level seems to be a prerequisite to initiating consistent and strategic change of care delivery. Second, financial incentives are indispensable in order to promote multidisciplinary delivery models that re-define the roles of health professionals. Finally, care delivery likely fosters both quality and productivity when payment schemes are reformed towards bundled payments on the basis of episodes.

Keywords: health workforce, productivity, delivery models

Introduction

Health policy is increasingly a concern of economic policy. The labor force is the most important input in any health care system. In recent decades job growth in the health and social care sector has even over-compensated for job reductions in industry and manufacturing in many EU countries (Eurostat 2015). Yet employment growth in health and social care sectors is likely to accelerate further. First, on-going technological progress including digitalization will attract high-skilled labor into this sector. Second, emerging chronic care needs require more and diverse labor inputs to meet a broad range of care demands. Thus social and health care sectors may provide employment opportunities in times where unemployment levels resulting from recessions remain high and where, in advanced economies, an overall shift in the labor force from manufacturing to service sectors is taking place. Even though there is some evidence that the health sector suffers from “Baumol cost disease” (Baumol 1993; Hartwig 2008; Hartwig 2011) recent analysis shows that this effect on health expenditure growth is rather moderate if existing at all (Colombier 2012; Medeiros/Schwierz 2013). This suggests that policy measures may well be effective in lifting labor pro-

ductivity. We define labor productivity as output per hour. By convention the volume measure of output is measured either by gross domestic product or by gross value added; labour input is measured either by the total number of hours worked of all persons employed or total employment, often head counts. In health care labor productivity is calculated as the growth in medical services over the growth in the labor input (Triplett 2012, see also footnote 2).

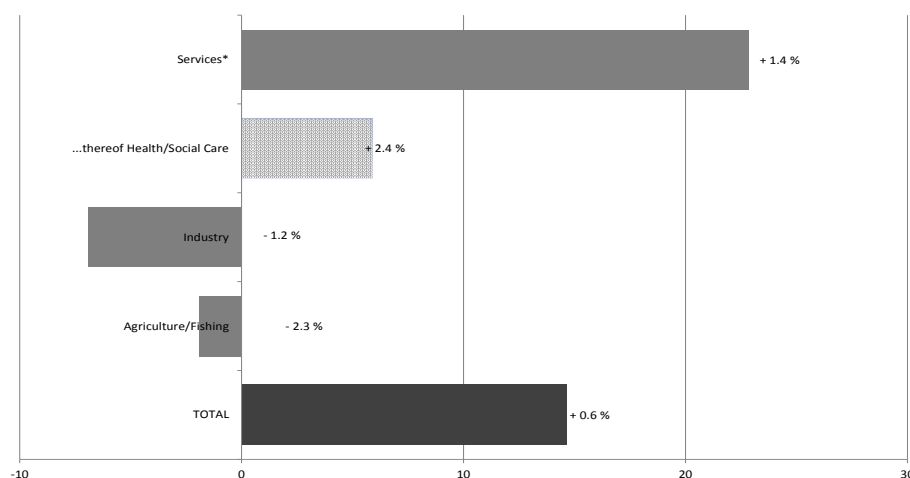
The objective of this paper is to outline the nexus of the impact of health sector employment growth on economic performance and key policy areas that appear promising in enhancing productivity of a growing health work force. First, we look at employment trends in Austria, Belgium, Denmark, Germany, France, The Netherlands, Sweden and Switzerland between 2000 and 2014 using Eurostat data (Eurostat 2015).¹ We infer from these trends that the importance of labor productivity enhancing policy measures in care delivery should be addressed. Thus, secondly the paper illustrates areas whe-

1 The selection of countries was made to ensure a mix of high-income European countries with high levels of social and health protection. We do not classify health care models as traditional boundaries between tax-financed versus social health insurance approaches have become increasingly blurred (OECD 2010a).

re policies should be developed. This is done through a literature survey. We found that good governance at the central government level, financial incentives to promote multidisciplinary delivery models and episode-based payments have potential to promote the performance of a growing health labor force. This paper does not aim to evaluate delivery models in detail. It uses a conceptual model to sketch the impact of employment growth in health and social care and intends to stimulate discussion on the nexus between employment growth and health labor productivity by highlighting policy measures which appear promising in improving health system performance.

Health employment and labor market trends

In 2014 EU-15 countries employed 21 million people in the social and health care sector (Eurostat 2015). Between 2000 and 2014 employment in this sector has risen by 5.9 million corresponding to an increase of 39 percent, almost double the rate of growth observed in the service sector (22 percent). In contrast and in the same period employment in industry went down as a whole almost everywhere generating job losses on the order of 6.9 million (Figure 1). Consequently, the share of employed persons in the health and social care



* other service categories' growth: wholesale and retail trade (+0.3), transport, storage and communications (+2.6), hotels and restaurants (+2.0), financial intermediation (+0.1), real estate, renting and business activities (+2.5), public administration and defense; compulsory social security (+0.1), education (+1.7), other community, social and personal services activities (0.3), activities of private households as employers and undifferentiated production activities of private households (+2.3), extraterritorial organizations and bodies (1.5)

Sources: EUROSTAT, NACE rev1.1 and 2, own calculations 2015, EUROSTAT data report head counts of employment per economic activity (NACE). The classification of rev 1.1 of the NACE was revised to become NACE rev 2 as EU-standard from 2008 on. While in NACE rev 1.1 Section N reports employment in "Health and social work", the corresponding section NACE rev 2 is Q reporting employment in "Human Health and social work activities". The revision excludes veterinary services and as previously also excluded, public administration including employees of compulsory social security.

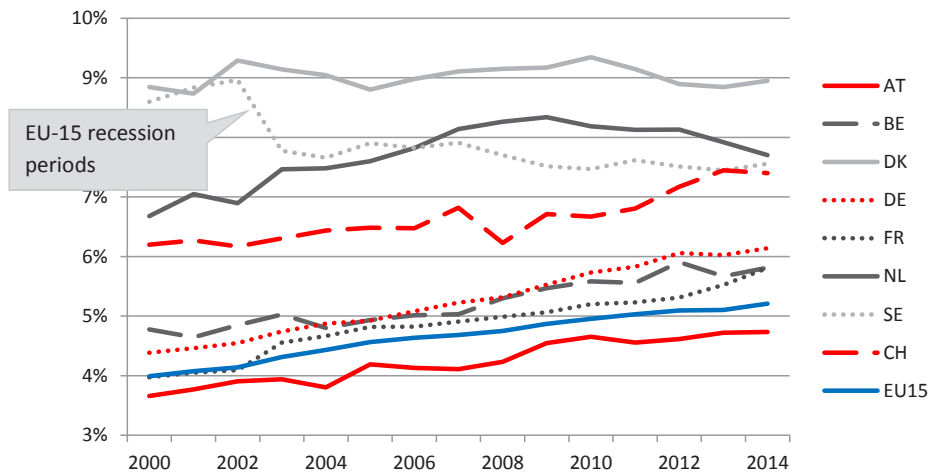
Sources: EUROSTAT, NACE rev1.1 and 2, own calculations 2015

Fig. 1. Employment according to economic activity, absolute change in millions 2000-2014, EU-15

sector in total employment rose across Europe (EU-15) from 9.5 percent to 12.1 percent between 2000 and 2014, on a per-100-capita basis the increase was from 4 health and social care workers to over 5 in 2014, Figure 2.

Labor endowment of the health and social care sector measured in head counts shows a wide dispersion across countries, ranging from 5 health professionals per 100 capita in Austria to almost 9 per 100 capita in Denmark in 2014, Figure 2. When looking at the composition of the health and social

work force, human health activities, i.e. activities related to hospitals as well as medical and dental practices, still comprised by far the largest share of the health and social care labor force in EU-15 countries in 2014 (55%), see Figure 3. However, while labor inputs in the human health activities are less varied across countries, between 2008 and 2014 labor input growth has shifted towards residential care activities and social work as indicated by Figure 3. With ongoing specialization in medicine in parallel to emerging chronic care needs, these occupations become increasingly important in

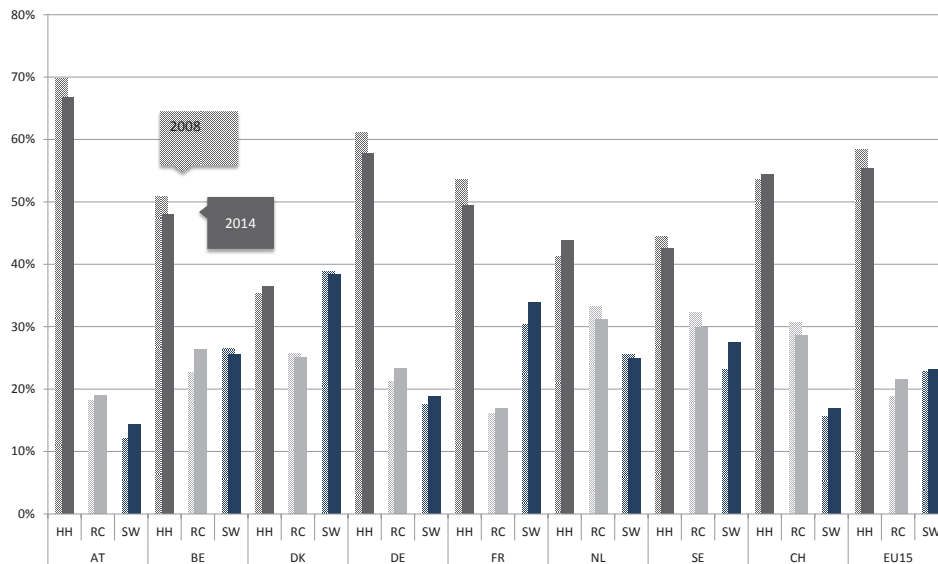


Recession as defined in Table 1

Sources: EUROSTAT, NACE rev. 1.1 and 2, own calculations 2015, EUROSTAT data report head counts of employment per economic activity (NACE). The classification of rev 1.1 of the NACE was revised to become NACE rev 2 as EU-standard from 2008 on. While in NACE rev 1.1 Section N reports employment in "Health and social work", the corresponding section NACE rev 2 is Q reporting employment in "Human Health and social work activities". The revision excludes veterinary services and as previously also excluded, public administration including employees of compulsory social security (Fineberg 2012).

Data on real GDP growth for 2014 not available as of August 2015

Fig. 2. Employment in health and social care per 100 capita (2000-2014)



HH: human health activities, RC: residential care activities, SW: social work activities without accommodation

Sources: EUROSTAT, NACE and 2, own calculations 2015, EUROSTAT data report head counts of employment per economic activity (NACE). NACE rev 2 Q reports employment in "Human Health and social work activities". The revision excludes veterinary services and as previously also excluded, public administration including employees of compulsory social security.

Fig. 3. Categories of employment in health and social work, % of total (2008-2014)

delivering comprehensive quality care that is coordinated between health, long-term and social care. Thus we use the total number of health and social work employees in looking at growth patterns as displayed in Table 1.

Between 2000 and 2014, job growth in health care and social work has not only outpaced employment growth in the economy as a whole but also in individual service sector divisions. Figure 1 and Table 1 present growth rates of employment in the health and social work sector, the service sector and the economy as a whole for our selection of EU countries and Switzerland. Yet, the pattern is not always consistent: With the exception of Denmark and Sweden the average growth of health sector employment is outpacing the respective growth in the service sector and in the overall economy. However, in general the growth pattern in particular in the area of social work and residential care is volatile when compared to the service sector and to the economy as a whole. While this is sometimes due to “outliers”, the variation of health employ-

ment growth remains strong even when excluding outliers.

For most countries considered the trend of constant employment growth in the health and social work sector holds true even when years of crisis are considered: While in 2009 employment continued to decline globally, particularly in manufacturing, transportation as well as in wholesale & retail trade (ILO 2010), employment continued to grow steadily in the health sector (Zeballos/Garry 2010; WHO 2009; OECD 2010b). In every country but Sweden and Denmark – the two countries with the highest health and social sector employment per capita – the health and social work sector has added jobs since 2000, even in years of sluggish growth: On average in EU-15 countries 3.4 % jobs were added per year during the first slowdown from 2002 to 2003, 2.4% during the second (2008 to 2010) and 1.4% since 2012. Thus, our data confirm the permanence of health sector employment growth even when the economy loses steam (EC 2010).

Tab. 1. Growth in health and social care employment 2000-2014

| | | Growth rates and dispersion | | | | | | Real GDP <2% § |
|-------|--------------------|-----------------------------|-------|------|----------|-----|-----------------|------------------------------------|
| | | Average | Min | Max | Variance | SD | #Outliers ** | |
| AT | Services | 1.3 | -0.3 | 3.9 | 1.5 | 1.2 | | 2001-03, 2008-10, 2012-13 |
| | Health/social work | 2.2 | -2.8 | 11.0 | 11.9 | 3.5 | | |
| | All sectors | 0.8 | -3.7 | 3.9 | 2.8 | 1.7 | 1 | |
| BE | Services | 1.4 | -0.8 | 4.0 | 1.7 | 1.3 | | 2001-03, 2005, 2008-09, 2011-13 |
| | Health/social work | 2.6 | -4.0 | 8.4 | 12.5 | 3.5 | | |
| | All sectors | 0.9 | -2.0 | 3.3 | 1.8 | 1.3 | | |
| DK | Services | 0.8 | -1.3 | 4.0 | 2.3 | 1.5 | | 2001-03, 2007-13 |
| | Health/social work | 0.4 | -2.4 | 6.7 | 5.3 | 2.3 | 1 | |
| | All sectors | 0.0 | -2.9 | 1.9 | 1.8 | 1.3 | | |
| DE | Services | 1.4 | -1.0 | 4.7 | 1.7 | 1.3 | | 2001-05, 2008-09, 2012-13 |
| | Health/social work | 2.3 | -0.3 | 4.3 | 1.3 | 1.1 | | |
| | All sectors | 0.7 | -1.3 | 2.5 | 1.2 | 1.1 | | |
| FR | Services | 1.7 | -0.4 | 3.8 | 1.7 | 1.3 | | 2001-03, 2005, 2008-10, 2012-13 |
| | Health/social work | 3.3 | 0.8 | 12.1 | 7.1 | 2.7 | 1 | |
| | All sectors | 1.1 | -1.0 | 3.0 | 1.4 | 1.2 | | |
| NL | Services | 1.0 | -4.1 | 7.2 | 8.7 | 3.0 | | 2001-03, 2008-13 |
| | Health/social work | 1.8 | -2.3 | 8.8 | 10.2 | 3.2 | | |
| | All sectors | 0.5 | -2.6 | 3.4 | 2.5 | 1.6 | | |
| SE | Services | 1.7 | -0.5 | 6.3 | 2.4 | 1.6 | 1 | 2001, 2008-09, 2012-13 |
| | Health/social work | -0.4 | -12.9 | 3.6 | 14.9 | 3.9 | 1 | |
| | All sectors | 1.1 | -2.0 | 5.2 | 2.5 | 1.6 | | |
| CH | Services | 1.7 | -4.6 | 6.6 | 5.6 | 2.4 | | 2001-03, 2009, 2011-13 |
| | Health/social work | 2.4 | -7.4 | 9.1 | 13.8 | 3.7 | 1 | |
| | All sectors | 1.1 | -0.1 | 2.6 | 0.6 | 0.8 | | |
| EU-15 | Services | 1.5 | -0.2 | 2.8 | 0.9 | 1.0 | | 2002-03, 2008-09, 2011-13 |
| | Health/social work | 2.3 | 0.6 | 4.8 | 1.0 | 1.0 | | |
| | All sectors | 0.7 | -1.8 | 2.0 | 1.2 | 1.1 | | |

AT: Austria, BE: Belgium, DK: Denmark, DE: Germany, FR: France, NL: The Netherlands, SE: Sweden, CH: Switzerland

*Defined as persons aged 15 and over who performed work, even for just one hour per week, for pay, profit or family gain during the reference week

** using the Grubb's test

§ We define economic slowdowns or recessions as occurring when in any single year per capita GDP falls below a real annual growth rate of 2 percent, which corresponds to recent long-term forecasts (Duval et al 2009); no seasonal adjustment

Source: EUROSTAT, own calculations 2015, EUROSTAT data report head counts of employment per economic activity (NACE). The classification of rev 1.1 of the NACE was revised to become NACE rev 2 as EU-standard from 2008 on. While in NACE rev 1.1 Section N reports employment in “Health and social work”, the corresponding section NACE rev 2 is Q reporting employment in “Human Health and social work activities”. The revision excludes veterinary services and as previously also excluded, public administration including employees of compulsory social security.

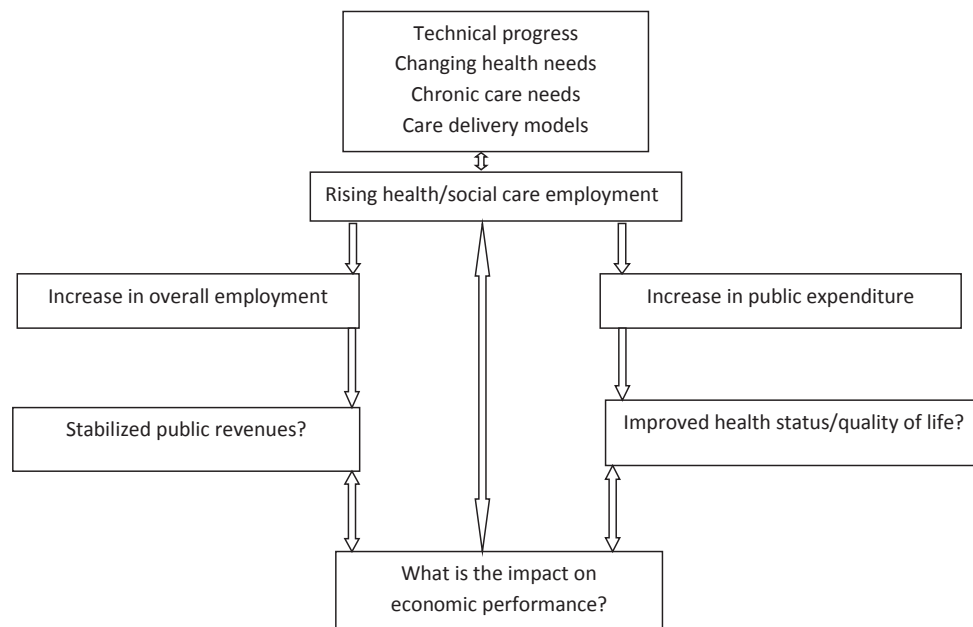
Data on real GDP growth for 2014 not available as of August 2015

Health employment and public spending

In European countries health and many social services are predominately financed and delivered in the public sector (OECD 2010a). Rising employment in health and social care contribute strongly to the pressure on public spending through an increasing wage bill. Even though wage increases only account for a small fraction of health expenditure growth (Colombier 2012), labor costs constitute the greatest proportion of current health spending. Estimates suggest that in many countries this is between 60 and 80 % (Buchan 2000), for the US it has been estimated to be 56 % (Kocher et al 2011). Health sector wages are largely administratively fixed and in many countries relatively equal across geographical areas (e.g. in the UK) (Hall et al 2008; Buchan/Black 2011). Thus, health sector wages and incomes are unlikely to vary substantially throughout business cycles. Further, increasing unification of the health labor force may also contribute to that

observation and help attract skilled labor in this sector (The Economist 2013). This in turn adds to the stabilization of public revenues if gainful employment consistently grows and over-compensates job losses in other economic activities. The OECD Ministerial Committee 2010 recognized that the health sector is an important social and economic stabilizer during times of crisis (OECD 2010d) even though health spending growth in excess to GDP growth contributes significantly to government debt in many OECD countries (OECD 2010b).

While much of the spending increases up to the early 1990s were often expansionary with regard to achieving full coverage or improving access to care (Buchan 2000), excess growth of health expenditure is largely attributed to technical progress (Smith et al 2009; EC 2009), higher unit prices (Aaron/Ginsburg 2009) and institutional factors (Buchan 2000) including a lack of evidence-based care delivery (Maynard 2008). In light of rapid technical progress and population aging care delivery models need to be re-engineered to permit for cost effective higher value care through enhanced labor productivity.



Sources: Authors 2013

Fig. 4. A stylized overview of the impact of health sector employment growth on the economy

Health employment, technical progress and improved health

The health and care sectors employ a significant and growing number of people of diverse skills and qualifications. Further, it creates demand for a number of industries, e.g. pharmaceuticals, ICT, diagnostic and imaging equipment, biotechnology, etc. These industries are associated with frontline knowledge, research and innovation and the development of high-tech products. Medical technology for improving

health and quality of life in particular for the elderly increasingly replaces costly clinical interventions with genetically engineered drugs and treatments, targeting the molecular basis of disease. Modern stroke therapy offers a good example here (Pardes et al 1999). Investment in biomedical technology in and of itself is an important engine of growth (EC 2010), possibly compensating for increased resources needed in the social and health care sector. Moreover, the final output of the health care sector – ensuring a healthy population – will impact the productive capacity of the workforce in general and thus has consequences across all sectors of the economy (Costa/Kahn 2003; Suhrcke et al 2005; Triplett 2012).

Adoption and widespread use of technology which is often

complementary rather than substitutive is generally accepted as an important determinant of the performance of the health sector (Gerdtham/Jönsson 2000; Ginsburg 2008; Dybczak/Przywara 2010; Weisbrod 1991; Newhouse 1992; Moise 2003). In particular, a growing number of chronically ill people will increasingly use “half-way technologies”. For example, half-way technologies are increasingly used to stabilize health states or improve quality of life for patients with a given disease which cannot be cured, e.g. cancer, HIV-AIDS. Half-way technologies are thus more often cost enhancing than cost containing (Weisbrod 1991). However, improvements in the quality of life often remain hidden in performance assessments of health systems. Indeed, scholars have shown that while new technology for treating disease generally increases expenditure, the benefits of improved interventions may outweigh the extra costs (Cutler/Richardson 1997; Cutler et al 1998).

Health employment and performance

Trends in aggregate labor input conceal considerable diversity by type of labor employed (Figure 3). Many countries are currently facing a shortage of health professionals, and without an adequate number of staff, a country's ability to improve its performance will be impaired (EC 2004; Dubois et al 2004). Equally important is that the labor force possesses the necessary skills (Knai et al. 2008), particularly in the face of increasing chronic care management needs (EC 2010; Dubois et al 2004; Schoen et al 2011) and specialist skills needed as a consequence of rapid technology adoption (EC 2008).

Labor productivity and efficiency in the health and social work sector have a large impact on the performance of economies as a whole. Even if disease cannot be cured to fully restore the health of individuals, quality of life improvements through effective treatment and care is welfare enhancing (Athonen 2013). Yet, and as Figure 4 suggests, the impact of counteracting effects is largely unknown and evidence of the contribution of the health and social care sector employment to overall productivity is patchy and often negative (Kocher et al 2011). On balance, health volume output should be measured as the quantity of health services provided to individuals with an adjustment for new products or services and quality change and not as the quantity of inputs used to produce these services (O'Mahony/Timmer 2009; Schreyer 2012).² While there are many important initiatives to capture the impact of technology on improved health and higher quality of life (OECD 2010c; Nordhaus 2003; Castelli et al 2007; Hollingsworth 2012), no international standards have been established to improve productivity estimates in this area (Triplett 2012).

2 As a predominately public sector area unresolved measurement issues prevail in health and social care. The main problem in measuring output relates to the lack of market prices that allow aggregation across diverse outputs, in addition to the need to incorporate quality improvements. Typically, in the past, nominal output was measured by wages, sometimes including an imputation of capital costs. If output is measured by inputs, productivity growth should be zero by definition. More recently there has been a move to employ quantity indicators to measure volumes of output (Schreyer 2012).

Recent empirical research has confirmed that the “Baumol cost disease”³ applies to the health sector (Hartwig 2008; Hartwig 2011). However, developments of health care expenditure were found to be largely quantity driven, suggesting that the Baumol's cost disease effect diminishes with adequate specifications of variables commonly used to show the Baumol effect (Colombier 2012). Thus considerable uncertainty prevails on the magnitude of this effect (Medeiros/Schwierz 2013). In turn this implies that policy measures are likely effective when they target the rapid expansion of technology, e.g. digitalization of care processes, assessing additional benefits of health technology and importantly by enhancing health labor productivity that is directed towards increasing the value of care (Cutler/McClellan 2001; Cutler 2004).

If the health care sector is to achieve even the average gain of labor productivity that other sectors in developed economies have experienced, care delivery models need to be redesigned fundamentally using a different quantity and mix of workers engaging in a much higher value set of activities (EC 2010; Kocher et al 2011; Swensen et al 2010). The introduction of new technology requires health workers to be properly trained and educated (EC 2008). Moreover, it is necessary to gain the acceptance of the health workforce for its use, which may sometimes disturb established working methods and structures. In particular, attention needs to be given to investment in change management, an often-neglected area for leveraging productivity gains in care delivery (Berwick 2003).

Some aspects of delivery models appear promising for enhanced health labor productivity

Our data showed that health and social care employment growth is strong in many countries even in times when economic performance is weak. And recent empirical evidence indicates that policy measures may well be effective in lifting labor productivity (Colombier 2012; Medeiros/Schwierz 2013). Improving health system performance depends on a fundamental shift in healthcare delivery towards better aligned care that promotes collaboration and coordination across specialties with an increased emphasis on multi-disciplinary care teams (Bodenheimer et al 2009; Hofmarcher et al 2007). Recent reform initiatives hint to the potential of a set of measures, which appear promising in this respect. For example, Denmark has shown national leadership in developing an integrated care strategy; Germany has been successful in tying financial incentives to integrated care reforms, and the Netherlands has introduced payment reforms to address

3 Baumol's cost disease model would predict that wages in labor-intensive service sectors like in health care increase in line with the rate of productivity growth of other more progressive sectors, e.g. manufacturing, even if their jobs have shown no productivity gains themselves. While unit costs of the more progressive sectors remain constant over time, unit costs of “Baumol sectors” rise with the difference in the rate of productivity growth between the two sectors, leading to an ever-increasing GDP share spent on health (Baumol 1993).

fragmentation in care delivery and promote multi-disciplinary care teams.

National leadership to promote better balanced care

Given fragmented jurisdictions that afflict most health systems, national leadership and good governance is essential to achieve better balanced care across the health system (Hofmarcher et al 2007; Ham et al 2011). In Denmark, leadership from the federal government has led to an integrated strategy between stakeholders at the central, regional and provider level to support coordinated care models for chronic disease (Frølich et al 2008). Although primary responsibility for provision of services is at the regional level, the Danish National Board of Health played a central role in coordinating and negotiating coordinated care agreements with regional officials and medical providers. The central government co-financed health services with municipalities to increase preventive services, provided a financial incentive to general practitioners for diabetes disease management and promoted quality improvement through benchmarking incentives. In addition, eighteen chronic disease health centers were implemented focusing on inter-sectoral cooperation with the local health and social administration (Frølich et al 2008; Frølich et al 2010; Vrangbaek 2009).

Similar reforms have been attempted in other countries but lack strong federal backing to ensure widespread adoption of coordinated care delivery. The crucial role played by the Danish leadership was in negotiating a policy solution with key stakeholders such as regional authorities and health professionals, to ensure they are co-owners of the strategy (Vrangbaek 2009).

Financial incentives to coordinated care delivery

Improved labor productivity likely depends on financial incentives and payment reforms that reward coordinated, multi-disciplinary care (Ham et al 2011; Busse et al 2010; Korda/Eldridge 2011; Landon 2012). Given poor alignment of incentives, providers and insurers have resisted coordinated care initiatives, and reforms have had variable uptakes in most countries. In Germany, however, integrated care initiatives have achieved widespread implementation by linking financial incentives with participation in integrated care programs (Busse 2004). Due to financial incentives to engage in integrated care contracts, integrated care contracts increased from only 600 to more than 6000 between 2005 and 2008, with approximately four million patients treated under integrated care contracts. German disease management programs (DMPs) were also well accepted due to the attachment of risk equalization to participation in DMPs, which promoted enrollment of chronic disease patients (Schlette et al 2009). In 2009 almost six million patients were enrolled in DMPs and approximately 60-75% of eligible family physicians participated. Since 2009, participation of patients in DMPs is no longer tied to the risk equalization scheme however health insu-

rance funds still receive a uniform flat rate for every DMP patient (OECD 2010b; Nolte et al 2012). Other countries are starting to introduce similar financial incentives to improve coordinated care delivery. As part of recent U.S. Medicaid reforms, the federal government has agreed to match state contributions up to 90% for the first two years for designating enrollees with at least two chronic conditions in a care home (Thorpe/Ogden 2010).

Payment methods that reward quality and efficiency in care delivery

Payment reforms are also important levers to promote care coordination and improved care delivery. Replacing fee-for-service with prospective payment is a key step to re-organizing care and encouraging providers to collaborate and take on shared responsibility for quality and costs (Crosson 2009; Korda/Eldridge 2011) including measures to reward the reduction of unnecessary services (Blumenthal 2012).

Various forms of prospective payment reform are currently under debate in most industrialized countries, with a focus on combined payments for providers of care episodes that cross inpatient and outpatient settings (Brantes/Camillus 2007; Davis 2007; Cortese/Smoldt 2006; Rosen et al 2011; Culter/Ghosh 2012; Ham et al 2011). These initiatives are an important prerequisite for improved productivity analysis (Triplett 2012).

The Netherlands have been a leader in initiating a bundled payment scheme, which was approved in 2010 for nationwide implementation for diabetes, chronic obstructive pulmonary disease, and vascular risk management (Busse/Stahl 2004; Bodenheimer 2007). In the new payment scheme, health insurers contract with a "care group" formed by multiple providers. The care group is responsible for delivering and funding care for all assigned patients and the fee for the bundle of services is freely negotiated by insurers and care groups. In addition, care groups are expected to follow quality criteria for patient services covered in the bundle (Groenewegen 2009; Struijs/Baan 2011). Initial results of the bundled payment system are promising for enhanced quality and efficiency of care delivery. Care coordination among care providers improved, as well as protocol adherence, and multidisciplinary consultations. Transparency of care also increased, permitting more performance benchmarking and providing information for quality improvement in care groups (Struijs/Baan 2011).

There are still challenges with bundled payment schemes. Insurers may attempt to limit care in order to contain costs (Struijs/Baan 2011; Busse/Stahl 2004). Implementing bundled payment is also complex, especially when assigning responsibility for performance and when patients receive treatment from multiple caregivers. Despite these challenges, estimates indicate that it is possible to achieve substantial health care savings by moving from a fee-for-service model to bundled payments for episodes of care (Cutler/Ghosh 2012). In addition, several studies show that bundled, value-based payment reforms create strong incentives for delivery reforms focusing on service integration, care coordination and stimulate

multidisciplinary care teams (Thorpe/Ogden 2010; Struijs/Baan 2011).

Multi-disciplinary care and re-defined professional roles

Finally, in addition to structural changes in care delivery re-defining professional roles and promoting changes in staff mix are essential to enhance workforce productivity. Multidisciplinary clinical teams have shown to produce clinical outcomes superior to those achieved by “usual care” arrangements (Bodenheimer 2007; Campbell et al 2001; Sylvia et al 2008). Integrated care delivery models have shown that sustainable healthcare value is dependent on reducing or automating care processes and appropriately delegating to lower-cost but capable staff (Paulus et al 2008). Promoting changes in staff-mix in primary care can also substantially contain costs of care (Naylor/Kurtzman 2010; Bodenheimer et al 2009). Payment reform must reward services provided by non-clinician team members and provide incentives for collaborative team models (Mitchell et al 2012). Only when payments specifically remunerate coordination activities (Leichsenring et al 2004) and acknowledge that care coordination is a professional task in its own (Davis 2007) will team-based care become a reality. One of the most essential but also most challenging tasks is re-defining professional roles and expanding the scope of work (Leutz 1999; Bodenheimer et al 2009). To address these issues, the promotion of a „shared culture“ in teams has been found to mitigate some of the resistance of medical providers towards multidisciplinary work (Hofmarcher et al 2007).

Multi-professional team-based care is gaining momentum as a strategy to improve outcomes, continuity, and effectiveness of health care from primary care to acute, hospital-based tertiary settings. To achieve a successful and sustainable health system it is crucial to implement a variety of measures simultaneously (Fineberg 2012): re-engineering care delivery and re-forming payment to promote multi-disciplinary team models must complement prevention, health IT and evidence-based decision making, which are all essential to enhancing higher-value health care and the long-term stability of the health system.

Conclusion

Trends in productivity and efficiency in health and social care sectors have a large and increasing impact on economy-wide performance, such as the level of public spending, the allocation of public revenues to various areas of public spending and competitiveness through its impact on labor costs.

Even though not always consistent, we found strong employment growth in the area of health and social care, also during times of economic slowdowns. We argued that there is much potential for policy makers to contain public health spending growth by enhancing labor productivity of a growing health and social care labor force. Although important initiatives are underway to improve productivity measurement in the area of health, international standards to measure productivity are required. At the same time early experiences from

new delivery models that are currently being implemented and / or piloted point to the potential of enhanced labor productivity. In this context we identified three promising areas. First, greater leadership and good governance on the central government level seems to be conditional to initiate consistent and strategic change of care delivery. Second, financial incentives are indispensable to promote multidisciplinary delivery models, which re-define the roles of health professionals. Finally, care delivery appears to foster both quality and productivity when provider payment is bundled and reformed to reward teamwork.

While this paper has sought to highlight the growing economic importance of the health and social care sector it is only a starting point for further analysis of the nexus of a vigorous health labor market and needed structural changes in health care delivery. Fueled by technical progress often in response to changing health needs delivery models need transformation to raise the productive potential of a growing health workforce especially in light of challenges and missing standards to measure productivity in this area.

First, more analysis is needed to explain differences in the health labor endowment across EU countries which are likely caused by the impact of the underlying welfare model, e.g. the issue of primacy of family versus government responsibility. Second, little is known about the optimal input mix, in particular about the optimal labor input mix in health systems, a fact that complicates productivity analysis beyond conventional measurement issues. Third, the measurement of productivity in the health sector should take into account the full skill range of the “high tech” labor force which is currently classified in other economic activities, e.g. IT industry, imaging but also bioengineering and scientific research and development in this area. Finally, more rigorous evidence of performance improvements through the key delivery model reforms described in the paper is needed to make them true conditions for productivity enhancement of the health labor force.

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