PAYMENT SYSTEMS TO IMPROVE QUALITY, EFFICIENCY, AND CARE COORDINATION FOR CHRONICALLY ILL PATIENTS – A FRAMEWORK AND COUNTRY EXAMPLES[1]

Reinhard BUSSE

Miriam BLÜMEL

I. INTRODUCTION

Care for people with chronic conditions is an issue of increasing importance in industrialized countries. Facing an ageing population, the burden of chronic diseases is constantly growing. However, today chronic diseases are no longer considered as a problem of the rich and elderly, since we know that within high-income countries, poor as well as young and middle-aged people are affected by chronic conditions. This has serious economic consequences that become apparent as expenditure on chronic care rises across countries.

Chronic diseases like cardiovascular disease, diabetes, asthma or chronic obstructive pulmonary disease (COPD) as well as cancer, HIV/AIDS and mental disorders all have in common that they need a long-term response, coordinated by different health professionals, especially if multiple disorders occur. Integrated care models respond to the fact that chronic diseases can rarely be treated in isolation. These models organize treatment so that providers better coordinate, and potentially integrate care – with the aim of providing higher quality of care while also being efficient. It remains a challenge, however, that the ways providers are paid in a way that incentivizes these objectives (Busse *et al.,* 2010; Nolte *et al.,* 2008).

This article will analyze the incentives of both traditional payment mechanisms as well as new methods to incentivize care coordination and quality of care, while also providing incentives for high(er) efficiency. To do so, we first develop an analytical framework through which we then describe and analyze current approaches in Australia, France, Germany, the Netherlands, England and the United States. Finally, we discuss their advantages and disadvantages with regard to improvement in quality, efficiency, and care coordination for chronically ill patients.

[1] The paper was originally prepared for the Commonwealth Fund and presented at the 2011 International Health Policy Symposium in Washington DC. The input of Zeynep Or (France), Jeroen Struijs (the Netherlands), and Stuart Guterman (U.S.) is gratefully acknowledged.

II. TRADITIONAL PAYMENT MECHANISMS AND THEIR EXPECTED INCENTIVES

Provider payment mechanisms are key to the performance of any health system, and the demands placed on them are correspondingly high (Barnum *et al.,* 1995; Chaix-Couturier *et al.,* 2000; Robinson, 2001). Ideally, provider payment mechanisms should motivate actors within the health system to provide appropriate treatment and services, avoid incentives that would lead to risk selection, and encourage providers to achieve an optimal outcome of care –all while being technically efficient, administratively easy and contributing to an overall efficient health system through expenditure control.

Table 1 provides an overview of the most frequent types of provider payment mechanisms with their theoretical advantages and disadvantages with regard to the main objectives stated above – even though one may argue about the exact extent of the stated incentives.[2] On the one hand, fee-for-service (FFS) systems provide strong incentives for providers to be "productive" by treating the maximum number of patients and to do everything they can for them. However, they may also lead to inappropriate or even unnecessary levels of service (i.e. supplier induced demand), are administratively complex and do not support expenditure control. Technical efficiency is not present as providers get paid for each delivered service. On the other hand, the incentives for simple capitation payments are diametrically opposed to those of FFS. While being administratively simple and technically efficient, capitation does not reward providers who avoid risk selection for the benefit of patients with (multiple) chronic conditions. Instead, this type of payment is more likely to encourage providers to transfer patients to other providers, while possibly adhering to guidelines based on evidence-based medicine (if these reduce or avoid complications). Better risk-adjustment may weaken the disadvantage of not taking patient needs appropriately into account–but this may reverse the advantages with regard to administrative simplicity. The main methods of payment in ambulatory care, capitation and FFS, both have in common that they do not reward quality of outcomes.

For hospital services, global budgets and DRG based case payments are typical forms of payment. Global budgets based on historical costs are administratively simple and contribute to expenditure control, but run the risk of hospitals not being active while disregarding patient needs, appropriateness and quality of care, and therefore outcomes. DRG based case payment systems provide a stronger incentive to be efficient and productive – at least as far as

[2] The list of objectives is mostly based on Barnum, Kutzin & Saxenian (1995) and Robinson (2001). A literature review of the effects of payment mechanisms on provider behavior can be found in Chaix-Couturier *et al.* (2000) and Gosden *et al.* (2001).

TABLE 1

BASIC FORMS OF PAYMENT MECHANISMS AND THEIR EXPECTED INCENTIVES IN REGARD TO SELECTED OBJECTIVES

		Activity					
Payment mechanism	*Risk selection*	*Number of cases*	*Number of services/case*	*Expenditure control*	*Technical efficiency*	*Quality of outcomes*	*Administrative simplicity*
Fee-for-service	+	+	++	--	0	0	--
Salary	0	-	-	+	0	0	++
Capitation	-- (if not risk-adjusted)	+	--	+	+	0	+
Global Budget	0	-	--	+	0	0	++
DRG based case payment	- (if insufficient consideration of severity and provided services)	++	--	0	+	- (if complication = comorbidity)	-

Notes: ++ / -- strong incentive in positive or negative direction; + /- moderate incentive in positive or negative direction, 0 no incentive in either direction (or dependent on specific details of implementation).

Sources: Authors' own compilation, based on Barnum *et al.* (1995), WHO (2000) and Geissler *et al.* (2011).

the number of cases is concerned – but, in their "pure" form (i.e., based on diagnosis only with weak or no consideration of complications and procedures), run the risk of equally disregarding patient needs and appropriateness, at least if not properly adjusted for severity and necessary treatment (Busse *et al.*, 2013). Finally, because the incentives provided by salaries are only moderate in nature, these payment mechanisms have neither strong advantages nor strong disadvantages.

To overcome the limitations of traditional payment systems, countries have developed and implemented a range of blended payment mechanisms in ambulatory care as well as in the inpatient sector. For example, in ambulatory care, capitation is often used to pay general practitioners for providing the basic services expected from each GP. These basic capitations may be supplemented by FFS for services which would be underprovided under capitation–or which require special expertise or technology.

In summary, three observations stand out: (1) basically all payment mechanisms provide conflicting incentives for "activity" and "expenditure control", with a relative advantage by the newer developments capitation and DRG in terms of improving efficiency; (2) by itself, none provides positive

incentives for producing high quality outcomes, a worrisome observation especially for the chronically ill; and (3) none provides incentives for care coordination, either because they incentivize activity and therefore under-refer patients or they de-incentivize activity and therefore over-refer patients. Furthermore, traditional payment mechanisms are designed according to the different sectors of health care. Therefore, they signify a major obstacle for better care coordination across hospitals and ambulatory care.

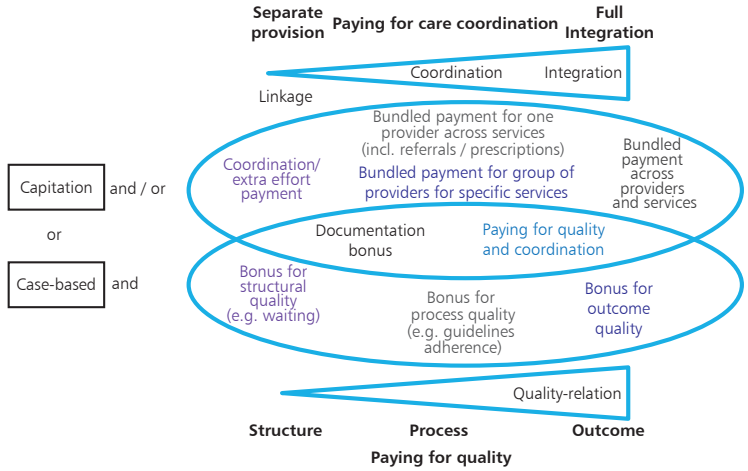
III. A FRAMEWORK FOR ANALYZING PAYING FOR CHRONICALLY ILL

All industrialized countries thus face the same challenge, i.e. to align their payment systems to incentivize and reward both a better quality of care as well as a better coordination and integration of care, without losing the efficiency gains experienced under capitation and case-based/ DRG payments. However, countries mainly choose – simplified – two different routes, namely either to incentivize quality or to incentivize care coordination (Figure 1).

To incentivize care coordination, countries give providers shared responsibility for their profits as they bundle payments (1) for one provider, (2) for one provider across services, (3) across providers for special services, or (4) across providers and services. Paying providers for integrated care mainly

FIGURE 1

PAYING FOR CARE COORDINATION AND QUALITY – A FRAMEWORK



Source: Own elaboration.

incentivizes efficiency within a provider network while disregarding the quality of care. To gain higher profit, providers could be encouraged to under-provide services or to select patients with good risks.

Incentivizing quality of care, on the other hand, usually does reward one provider (mostly the GP, but also hospitals, albeit less often for chronically ill) who/which is responsible for delivering high-quality outcomes concerning (1) structures, (2) processes or (3) outcomes of care. As we can see in Figure 1, although approaches for paying care coordination and for paying quality do exist, they only have a minor intersection. A payment mechanism that gives providers a financial incentive to engage in both care coordination and quality seems to be not yet fully developed.

IV. PAYMENT TO (PRIMARILY) INCENTIVIZE CARE COORDINATION

Research suggests that one of the major obstacles to better care for those with chronic disease is the lack of coordination in health care systems. Structured approaches such as Disease Management Programs (DMP) and integrated multi-disease care models tend to fall between different layers of increasingly differentiated health systems (Busse *et al.,* 2010).

As described in Section II, all traditional payment mechanisms used to remunerate care providers are insufficient regarding care coordination, especially for patients with chronic conditions. In response to the challenge posed by chronic diseases, numerous initiatives and models have emerged to enhance better coordination of services across the continuum of care required by people with chronic illnesses (which are, or are not, accompanied by appropriate financial incentives).

There are considerable variations in the approaches to chronic disease management that are being implemented in different health care settings (Nolte *et al.,* 2008).

Boon and colleagues (2004) identified seven types of provision with varying degrees of coordination. At one end of the continuum is "separate provision" and at the other end is "full integration of disciplines" for curative, rehabilitative and preventive services (Figure 1). Second on the non-coordination side of the continuum is "parallel practice", whereby practitioners work independently and carry out services independently. "Consultative practice" is where information on patients is shared informally, case by case. In "coordinated practice" the exchange of data on patients is related to particular diseases, and therapies

are administered through a formal structure. Often a case coordinator will supervise the exchange of patient records. An advanced model of the former is the "multidisciplinary team", which is more formalized, has more team members, and often clear team structures with sub-teams and team leaders. An "interdisciplinary team" is one in which group decisions are made, shared policies developed, and regular face-to-face meetings held. Finally, "integrative practice" is based on a shared vision and provides a "seamless continuum of decision-making and patient-centered care and support" (Boon *et al.,* 2004; Busse *et al.,* 2010).

It can be assumed that providers will be less involved in integrated care models unless financial incentives are given to them (Steuten *et al.,* 2002; Schiøtz, *et al.,* 2008). One of the major obstacles to the establishment of care coordination and long-term cooperative arrangements is the fragmentary funding of services and providers (Struijs *et al.,* 2010). Fragmented service provision is to some degree due to a lack of perceived shared responsibility (accountability) across different providers (Kilbourne *et al.,* 2010). Integrated care needs integrated payment, i.e. a bundled payment across services as well as across providers that encourages providers to share financial responsibility for the whole continuum of care. Thus, payment mechanisms have to be adapted in order to compensate participation in new schemes, such as multidisciplinary teams to treat chronic diseases (Glasgow *et al.,* 2008).

Models of integrated care differ in the level of coordination as well as in their payment level. To better analyze recent approaches, we identified four levels of payment integration:

First level: financial incentives for coordination or extra effort;

Second level: financial incentives for bundling across services (delivered by one provider);

Third level: financial incentives for bundling across providers (but restricted to a set of activities, e.g. only those related to a disease);

Fourth level: financial incentives for bundling across providers and services.

All of the considered countries in this paper have implemented interesting models in their health system to improve care coordination. However, they differ substantially in the level of financial incentives used to encourage providers not only to avoid risk selection, but to deliver appropriate care across services and other providers.

Country examples

As one part of a broader strategy to reform the fragmented primary health care system in *Australia,* the Australian Government Department of Health and Ageing (DoHA) introduced the Practice Incentives Program (PIP) in 1998 (Cashin and Chi, 2011). To elude the disadvantages of FFS payments – the traditional payment scheme for GPs in Australia – PIP moves toward a blended payment model, providing a portion of funding to general practices that was unrelated to the volume of FFS payments. Beyond incentive payments for the broader elements of quality practice (see Section V), PIP also includes direct incentives for specific chronic disease management activities performed by GPs for patients with chronic conditions. Three types of payment for disease management can be differentiated: (1) initial payments, e.g. patients are registered or signed on and provide their data for registers; (2) service incentives, e.g. payment for each completed cycle of care; and (3) service outcomes, e.g. payment for the achievement of a target of completion (Australian Institute for Primary Care, 2008). Although these types of payment are an approach to improve care coordination, they do not yet overcome the fragmentation of services and providers.

While *France* gives financial incentives for GPs to improve care of chronically ill in terms of structure and process quality (see CAPI in Section V), it also has implemented payment approaches aiming at the improvement of care coordination across health care providers. This is done by developing new practice structures in primary care which will give more emphasis to prevention and care coordination. For this purpose, the 2007 Social Security Financing Act scheduled a period of five years from January 2008 for experimentation with supplementary or substitutive remuneration schemes to fee for service in primary care. Group practices will choose among different remuneration packages for providing specific healthcare services (Lorenza *et al.,* 2010).

Finding an effective way of funding group practice such as Multidisciplinary Health Houses (MHH) has been a long pursued objective in France. MHH refer to group practice structures in which self-employed medical and paramedical health professionals are united on a single, dedicated site. These structures aim to improve the management of chronic diseases and the effectiveness of the care delivery by shifting the focus from curative care for acute conditions towards preventive services and care coordination. They also intend to improve accessibility (with longer opening hours), as well as efficient cooperation between professionals (in particular between general practitioners and nurses) and care supply.

In Germany, new provisions for integrated care were introduced as part of the SHI Reform Act in 2000. The aim of these provisions was to improve

cooperation between ambulatory physicians and hospitals on the basis of contracts between sickness funds and individual providers or groups of providers belonging to different sectors. Due to legal and financial barriers, only a few initiatives were established on the basis of these legal provisions. The Act to Reform the Risk Structure Compensation Scheme provided new incentives for trans-sectoral care in the context of disease management programs from 2002. With the SHI Modernization Act, in force from 2004, integrated care has been further strengthened and the rules of accountability have been clarified. The Act removed barriers to starting integrated care models which had been enacted when the integrated care was first introduced in 2000: Integrated care contracts no longer need to extend across ambulatory and inpatient sectors, but it is sufficient if different categories of providers within one sector are involved, for example, family physicians and ambulatory long-term care providers (Busse and Blümel, 2014).

As a financial incentive, between 2004 and 2008, sickness funds had to set aside 1% of the financial resources for ambulatory physicians and hospital care for integrated care contracts. These resources were only to be used for integrated care purposes in the respective region of the physicians' association and had to be paid back if not fully used. Thus, for five years, integrated care represented a separate sector for which financial resources had to be set aside.

The regional initiative "Healthy Kinzigtal" *(Gesundes Kinzigtal),* located in Southwest Germany, offers financial incentives for bundling across providers and services and therefore follows the idea of integrated care consequently (Hildebrandt *et al.,* 2010). The system serving around half of the population of the region is run by a regional health management company *(Gesundes Kinzigtal GmbH)* which has contracts with two statutory health insurers. *Gesundes Kinzigtal GmbH* is a joint venture between the Hamburg-based health management company OptiMedis AG, which holds one-third of the capital, and the more-than-40-member-strong *"Medizinisches Qualitätsnetz–Ärzteinitiative Kinzigtal"* (Medical quality network—physicians' initiative Kinzigtal; MQNK), which holds two-thirds of the capital. The remuneration of the health care providers in *Kinzigtal* is based on a four-stage model: 1. regular payment through SHI, 2. additional fee-for-service items (e.g. health-check-up), 3. performance-based remuneration regarding to specific structural and quality characteristics, 4. distribution of the profit, calculated as difference between expected and actual expenditure between the sickness funds and *Gesundes Kinzigtal GmbH* and its members (Braun *et al.,* 2009).

To surmount the fragmented funding structures that usually block multidisciplinary cooperation, *The Netherlands* drafted a comprehensive funding plan for diabetes care in 2007. On an experimental basis so-called "care

groups" have been created, which are legal entities that refer to the principal contracting organization on an integrated bundled payment contract, not to the team of health care providers that deliver the actual care. The care group is responsible for the organization of care and ensuring its delivery (Struijs *et al.,* 2010). The role in the provision of health care service can be structured in different ways: the care group may deliver the contracted care itself (1) or subcontract it to individual health care providers and agencies (2). A third possibility is a mixture of the two variants (3). The fees for bundled payment contracts and associated subcontracts are freely negotiable, which is expected to encourage efficient purchasing (Struijs *et al.,* 2010). The decision about the coverage of services within a payment bundle was made on national level. In 2010, the concept of bundled payments for care groups was approved for nationwide implementation for diabetes, COPD, and vascular risk management (Struijs and Baan, 2011).

The *United States'* "Patient Protection and Affordable Care Act" of 2010 includes incentives for providers to move toward more integrated models of care. From 2012 on, the Centers for Medicare and Medicaid Services (CMS) will create a national voluntary program for the implementation of a new provider category: accountable care organizations (ACO). ACOs accept responsibility for the cost and quality of care delivered to a specific population of patients cared for by the groups' physicians (Shortell *et al.,* 2010). "To be eligible, an ACO must have a mechanism for shared governance, and may include professionals in group practice arrangements, networks of individual practices of ACO professionals, hospitals employing ACO professionals, or partnerships or joint venture arrangements between hospitals and ACO professionals. The ACO must be willing to be accountable for the quality, cost, and overall care of Medicare FFS beneficiaries assigned to it for at least a three-year period, and have a formal legal structure to distribute shared savings" (Davis *et al.,* 2010).

As a model for the Medicare Shared Savings Program for ACO, the physician group practice (PGP) demonstration was initiated in 2005. It rewarded providers for coordinating and managing the overall health care needs of a non-enrolled Medicare patient population usually paid by FFS. It offered the CMS an opportunity to test whether a new financial incentive structure can improve service delivery and quality for Medicare patients, and ultimately prove cost-effectiveness (see Section V) (Trisolini *et al.,* 2005 into 2006).

While quality-related payment is well developed in *England* compared to other European countries, approaches aiming at care coordination as well as their payment are much less developed. "In 2008, the Department of Health set out proposals for integrated care pilots so that primary and community care clinicians could work with acute hospitals to deliver seamless care. In April 2009, the Department of Health launched a program of 16 integrated care

pilots designed to cross boundaries between primary, community, secondary and social care. Examples include GP-led service development of specialist intermediate care teams for patients with dementia, and various chronic disease management services, with teams including people from across the health care boundaries (e.g. hospital consultants, GPs, community health staff and social care staff)" (Boyle, 2011).

Table 2 gives an overview of the financial incentives used to improve care coordination according to the different levels of integration (not all of which have been discussed in depth).

TABLE 2

INCENTIVES USED TO IMPROVE CARE COORDINATION IN SELECTED COUNTRIES

Financial incentives for coordination/ extra effort	*Financial incentives for bundling across services*	*Financial incentives for bundling across providers*	*Financial incentives for bundling across providers and services*
"Year of care" payment for the complete package of chronic disease management (UK) or service incentives (AUS)	GP "fundholding" (UK) (cf. Dixon & Glennerster 1995)	1% of overall health budget available for integrated care → majority of integrated care (GER)	1% of overall health budget available for integrated care → population-based integrated care (*Kinzigtal;* GER)
Per patient bonus for physicians for acting as gatekeepers for chronic patients and for setting care protocols or providing patient education (FR)		Integrated care groups (NL)	Shared savings for Accountable Care Groups (US)
Bonus for DMP recruitment and documentation (GER) or initial payments (AUS)		Bundled payment for acute-care episodes (US)	
Service outcome payments (AUS)		Payment for professional cooperation and diagnostic related bundled payment (FR)	

Notes: AUS = Australia; FR = France; GER = Germany; NL = Netherlands; UK = United Kingdom; US = United States.

Source: Own elaboration.

V. PAYMENT TO (PRIMARILY) INCENTIVIZE QUALITY

As described in Section II, the traditional payment mechanisms used to remunerate care providers are insufficient regarding the quality of care, especially for patients with chronic conditions.

The classic analytical framework for analyzing and assessing quality is Donabedian's model that bases on a three-component-approach: structure, process and outcome (Donabedian, 1988). Structure refers to prerequisites, such as the provider's function as a gatekeeper. Process describes how structure is put into practice, such as the provision of specific therapies for patients with chronic conditions. Outcome refers to results of processes, for instance, the measurable clinical outcomes after a specific therapy. Providers can be given financial incentives to improve these different components of quality.

With the broader intent of improving the quality of service provision, the traditional payment mechanisms have been amended by a new approach during the last decade. Pay-for-performance (P4P) gives physicians financial incentives to encourage pre-established targets for health care delivery. These targets can be assigned to the different components of quality. Although a trend towards this more quality-related payment can be found, P4P still has marginal influence in European countries, especially compared to the United States (at least in the hospital sector). However, while some countries use quality-related payments as an inherent part of the provider payment system, others are still experimenting with them in the pilot stage.

Country examples

Quality-related payment has only marginal influence in *Germany.* A financial incentive that takes into account the structural quality of care is a bonus physicians receive for patients enrolled in a Disease Management Program (DMP). Sickness funds pay the physician an annual lump-sum. In return, the physician provides patient trainings and is supposed to document patient data.

As part of the Social Security Finance Act, *France* introduced new payment schemes that aim to improve structural and process aspects of care quality. In 2009 the National Health Insurance Fund (NHIF) implemented a new category of individual GP contracting called "individual contracts for professional practice quality improvement" (CAPI) (Chevreul *et al.,* 2010). Contracted GPs agree on achieving specific structure and process targets in three domains: (1) management of chronic diseases, (2) preventive health care, and (3) level of prescribing of generic drugs and of defined categories of drugs. In return, GPs get additional payment on top of their FFS remuneration, taking into account the number of treated patients and the number of quality indicators. GPs can earn an additional €7,000 per year when achieving 85% of the targets and treating 1,200 patients. GPs' performance is monitored regularly and they can check their level of achievement on the NHIF's Web site. One year after its implementation in 2009, 15,000 GPs (one third of the eligible doctors) have

signed CAPI, which was far above the expectations of the NHIF. Two thirds of the GPs who signed the contract in 2009 received a remuneration in 2010. On average, a GP earned additional €3,000 in that year reaching about 45% of the targets (Or, 2010). The NHIF expects that money spent on CAPI will mainly be compensated by a reduction of (expensive) drug prescriptions and an increasing use of generic drugs.

Another country that implemented financial incentives improving structure and process of care is *Australia* with its Practice Incentives Program (PIP). The PIP was introduced in 1998 to provide recognition and financial incentives to general practices providing quality care in line with the Royal Australian College of General Practitioners' *Standards for General Practices* (Cashin and Chi, 2011). PIP payments are made in addition to normal payments to GPs, such as standard Medicare payments and patient payments. PIP payments provide incentives for a variety of practice areas, including information management, teaching and after-hours care, as well as targeted incentives, such as the Quality Prescribing Initiative (Australian Institute for Primary Care, 2008).

The introduction of care groups in *The Netherlands* gives providers not only financial incentives to improve care coordination, but also influences (albeit to a lesser degree) the quality of care. As providers can choose between different modules of care standards and adapt the modules to the specific patient needs, they can provide tailored care programs (Tsiachristas *et al.,* 2011). In addition, important quality information about the care standards may be collected via the Minimum Data Set. As a result, quality may become more measurable and transparent for insurers and providers as well as for the patients (Tsiachristas *et al.,* 2011).

England has the longest experience with quality-adjusted payment in Europe and has already shifted its focus from structure and process to outcome quality. The "quality and outcomes framework" (QOF) was introduced in 2004. Extra payments are provided for GP services linked to achievement of quality standards by the practice. The QOF is a set of indicators that provide a score upon which is based the amount of extra funds paid to each practice. Practices that are part of the primary medical services scheme are usually rewarded according to criteria agreed locally with their PCT. QOF scores are recorded by practices electronically and submitted to their PCT. The QOF has four main components: clinical standards (e.g. evidence-based treatment of patients with chronic conditions), organizational standards (e.g. e-health record), experience of patients (e.g. patient involvement in service development plans) and additional services (e.g. cervical screening, child health). A practice's entitlement to quality payments is determined through a quality scorecard, with a total of 1000 points available. In 2006–2007 each point was worth £125 per practice with

an average weighted population. The QOF is subject to annual negotiation between the General Practitioners Committee of the BMA and NHS Employers (Boyle, 2011).

Quality-related payment that goes beyond structure and process of care has been adopted in the *United States* as well. Physicians under the Physician Group Practice project are paid through the regular Medicare fee-for-service method, but they are eligible to share in "performance payments" for up to 80% of savings they generated (*if* they generate such savings). Performance measures base on cost efficiency and 32 quality measures phased in during the demonstration. The portion of the performance payments based on quality *vs.* cost efficiency began at 70% cost/30% quality/ the first year, then went to 60% cost/40% quality the second, and 50%/50% the remaining three years (Ivers and Wright, 2011).

As shown in Table 3, most of our considered countries relate their financial incentives to the structure or process of care. Only the United States' Medicare Shared Savings Program and United Kingdom NHS contract for GPs specifically include incentive payments focused on the delivery of particular outcomes. Generally the focus has been shifting from approaches which simply take into account the presence (or potential presence) of patients with chronic disease towards funding incentives designed to encourage providers to make specific structural and process responses (Busse *et al.,* 2010).

TABLE 3

INCENTIVES USED TO IMPROVE QUALITY OF CARE FOR CHRONICALLY ILL CARE IN SELECTED COUNTRIES

Financial incentives targeting structures *of care*	*Financial incentives targeting* processes *of care*	*Financial incentives targeting* outcomes *of care*
Per patient bonus for physicians for acting as gatekeepers for chronic patients and for setting care protocols or providing patient education (FR)	Points for reaching process targets (UK: QOF; FR: CAPI; AUS: PIP)	Points for reaching outcome targets (UK: QOF)
Bonus for DMP/ PIP recruitment and documentation (GER, AUS)	Shared savings when cost-effective (USA)	Shared savings when cost-effective (USA)
Points for reaching structural targets (UK: QOF)		
Shared savings when cost-effective (USA)		

Notes: DMP = disease management program; AUS = Australia; FR = France; GER = Germany; UK = United Kingdom; US = United States.

Source: Own elaboration.

Table 3 shows how far the considered countries have developed approaches to financially incentivize structural and process quality as well as outcomes.

Payment that incentivizes the quality of care is a component in all of our considered countries. However, while all countries implemented certain provider incentives regarding structural aspects, improvements in the process of care are only remunerated in Australia, France, England and the United States, and outcomes are only a component of provider payment in England and the USA a component of provider payment.

Table 4 gives a synthesis of the approaches used to incentivize care coordination as well as quality of care. As can be seen, only the US Physician Group Practice achieves the highest level of care coordination (horizontal) and quality (vertical). Some of the Dutch care groups get rewarded for quality, but although the level of care coordination is high, they disregard bundled payments across services and providers, i.e. bundling only applies to services for one disease entity. In contrast, the German *Kinzigtal* "bundles" (in a virtual way) provider payment across providers and services and therefore incentivizes care coordination, but with the loss of quality aspects. Whereas England focuses on outcomes of quality of care, approaches from Germany (DMP), France (CAPI) and Australia (PIP) only consider aspects of structure and process of care.

TABLE 4

INCENTIVES USED TO IMPROVE CARE COORDINATION AND QUALITY OF CARE IN SELECTED COUNTRIES

Quality of care	**Care coordination**			
	Financial incentives for coordination/ extra effort	*Financial incentives for bundling across services*	*Financial incentives for bundling across providers*	*Financial incentives for bundling across providers and services*
Financial incentives targeting structures of care	DMP (GER) CAPI (FR) PIP (AUS)	QOF (UK)		PGP (USA) *Kinzigtal* (GER)
Financial incentives targeting process of care	DMP (GER) CAPI (FR) PIP (AUS)	QOF (UK)	Care Groups (NL)	PGP (USA) *Kinzigtal* (GER)
Financial incentives targeting outcomes of care		QOF (UK)	Care Groups (NL)	PGP (USA)

Note: AUS = Australia; FR = France; GER = Germany; NL = Netherlands; UK = United Kingdom; US = United States.

Source: Own elaboration.

VI. CONCLUSIONS

The demand for coordinated and high quality health care services grows, as the number of chronically ill patients with often multi morbidities has increased remarkably during the last decades; a trend that is still happening in the industrialized world. This is in a context of limited resources that have to be well-allocated among the different health care sectors and providers. For this reason, it is very important to develop and implement provider payment mechanisms that fulfill the requirements of (1) improving quality of care for chronically ill, (2) promoting better care coordination, and (3) being cost-efficient.

Considering cost-efficiency case-based payments as well as capitation payments have significant advantages compared to FFS, global budgets or salary. But they are not to be able to overcome the trade-off between efficiency and quality. Knowing about this shortcoming, all of our considered countries experiment with forms of quality-related payments usually paid in form of an extra bonus on top of the physicians' remuneration. However, they differ from each other in levels of quality, i.e. while some countries measure improvements in structure and process, other rely on outcome measures. In terms of incentivizing care coordination, a trend towards more bundled payments across providers and services can be documented, since it seems to be evident that bundled payments encourage providers to feel more accountable for the full range of services. The big challenge for all countries is to link these approaches towards payment mechanisms that consider both quality and care coordination. A systematic review by De Bruin et al. confirms our assumption by concluding that the number of P4P models with the intention to encourage delivery of chronic care through better coordination is still limited. Furthermore, hardly any information is available about the effects of such models on health care quality and healthcare costs (De Bruin *et al.,* 2011). Another large review of 22 systematic reviews on P4P came to the following conclusion: "Findings suggest that P4P can potentially be (cost-)effective, but the evidence is not convincing; many studies failed to find an effect and there are still few studies that convincingly disentangled the P4P effect from the effect of other improvement initiatives. Inequalities among socioeconomic groups have been attenuated, but other inequalities have largely persisted. There is some evidence of unintended consequences, including spillover effects on unincentivized care. Several design features appear important in reaching desired effects" (Eijkenaar *et al.,* 2013).

Although financial elements are a strong driver for providers to change their behavior, it should be noted that professionals are motivated by more than remuneration. In particular, physicians respond to reputational incentives, particularly where performance information is published (Kolstad 2013), although remuneration does remain a powerful lever for change.

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