



## Towards incentivising integration: A typology of payments for integrated care



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### ABSTRACT

Traditional provider payment mechanisms may not create appropriate incentives for integrating care. Alternative payment mechanisms, such as bundled payments, have been introduced without uniform definitions, and existing payment typologies are not suitable for describing them. We use a systematic review combined with example integrated care programmes identified from practice in the Horizon2020 SELFIE project to inform a new typology of payment mechanisms for integrated care. The typology describes payments in terms of the scope of payment (Target population, Time, Sectors), the participation of providers (Provider coverage, Financial pooling/sharing), and the single provider/patient involvement (Income, Multiple disease/needs focus, and Quality measurement). There is a gap between rhetoric on the need for new payment mechanisms and those implemented in practice. Current payments for integrated care are mostly sector- and disease-specific, with questionable impact on those with the most need for integrated care. The typology provides a basis to improve financial incentives supporting more effective and efficient integrated care systems.

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### 1. Introduction

There is a general policy consensus that current models of care are not adequate for addressing health system challenges faced globally [1]. Ageing populations and rising levels of multimorbidity are increasing demand for services across sectors of care. This increases the risks of fragmented or conflicting treatment

with potential for inefficiency and for harm [2,3]. Concurrently, healthcare budget restraints in light of financial crises and concerns over long-term fiscal burden have created a move towards 'integrated care', which are "structured efforts to provide coordinated, pro-active, person-centred, multidisciplinary care by two or more well-communicating and collaborating care providers either within or across sectors" [4].

Just as existing care models may not be well suited for dealing with current health system challenges, current payment mechanisms may not create appropriate incentives for providing integrated care. In particular, 'traditional' modes of healthcare payment such as fee-for-service (FFS) and other activity-based payments reimburse single units of care, reflecting the traditional focus of the healthcare system of dealing with discrete onsets of acute illness. It has been argued that chronic illness, as opposed to acute illness, requires a long-term perspective with on-going preventa-

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**Table 1**  
Eight basic healthcare payment methods as described by Quinn [7], with integrated care payment approaches in bold (and those not referenced specifically by Quinn in italics) [10].

Unit of Payment	Common term ( <i>integration-specific term</i> )
1 Per time period	Budget and salary
2 Per beneficiary	Capitation
3 Per recipient	Contact capitation
4 Per episode	Case rates, payment per stay, and <b>bundled payments</b>
5 Per day	Per diem and per visit
6 Per service	Fee-for-service, <b>pay-for-performance<sup>a</sup></b> , <b>pay-for-coordination</b>
7 Per dollar of cost	Cost reimbursement
8 Per dollar of charges	Percentage of charges

<sup>a</sup> More generally applied than purely integrated care, but performance measures can also be specific to integration.

tive management, which is not incentivized by these traditional payment mechanisms [5]. In addition, the conventional way of paying separate providers differently depending on sector does not incentivise professional collaboration and care coordination, and may even be perceived as a barrier to the integration of care [6]. The expected rise in numbers of patients with multimorbidity, frequently requiring care from multiple providers across the health and care system, makes these matters even more complex and pressing.

Quinn recently classified the payment mechanisms commonly used in healthcare into eight basic methods based on unit of payment (see Table 1) [7]. However, neither Quinn's classification nor other existing typologies [8,9] describe in detail these payment mechanisms in terms of the extent to which they stimulate care integration.

This lack of clarity becomes particularly apparent for the alternative payment models developed specifically to stimulate integration of care (see Table 1) [10]. These new terms are currently being used without any agreed meaning or definition. Loosely defined, bundled payments are a single payment to fund a pre-defined set of services by multiple providers for a specific (group of) patient(s), pay-for-performance (relating to integrated care) are payments for processes and outcomes of care for chronic diseases, and pay-for-coordination are specific payments to coordinate care [10]. But, for example, a bundled payment can mean payment covering a single episode of care, or care over a defined time-period [11]. They may also only cover care for a single disease [12], or all of a patient's care in a single or over multiple care sectors (e.g. primary and/or secondary care) [13,14].

Bundled payments, and other payments that also aim to further integrate care, cannot be fully described and do not fit neatly within existing typologies [7–9]. Neither is it possible to assess on which aspects these payments differ from traditional payment mechanisms in terms of hypothesised effects on integration using these existing typologies. Therefore, policymakers and designers of payment methods cannot explicitly explore their options and current trends in incentive approaches.

This study aims to:

- Systematically search the literature to identify alternative payment mechanisms aimed at incentivising integration of care.
- Develop a typology to describe traditional and alternative payment mechanisms in terms of their expected impact on integration.
- Illustrate this typology by describing and comparing alternative models of paying for integrated care in selected US Medicare and European examples of 'bundled payments'.

Our study is conducted within the context of SELFIE (Sustainable intEgrated care modelS for multi-morbidity: delivery, Financing and performancE), a four-year EU-funded Horizon2020 project (Grant Agreement No. 634288). One of the aims of SELFIE is to provide evidence-based advice on financing and payment methods with adequate incentives to implement integrated care.

## 2. Materials and methods

### 2.1. Identification of current payment mechanisms for integrating care

For a broader overview of conceptual and empirical approaches to payment for integrated care reported in the current literature, we systematically searched eight scientific databases ((i) Medline, (ii) Medline in process, (iii) CINAHL, (iv) HMIC, (v) Econlit, (vi) EBM Reviews, (vii) Embase, and (viii) PsycInfo), supplemented by a grey literature search within selected sources up to January 2017. We combined search terms for synonyms of "payment or financing schemes" and "integrated care" (papers had to deal with both concepts to be included). We adapted the searches to the specification of each database (see Appendix for full details of search and screening strategy). We excluded editorials, letters to the editor, commentaries, conference abstracts, non-English language articles, those where no full text was available, payments aimed only at those under 18, and where the target population included only those with an acute or communicable disease. Two authors (VS and SF) independently screened the literature in a two-step approach (1. title/abstract screening, 2. full-text screening), with agreement reached by discussion.

Using a standardised extraction template, we first extracted general information on the publication (e.g. authors, country), and methods (e.g. study design, target group). In a second step, information specifically pertaining to the study aims was extracted: details of the payment mechanism applied, whether it replaced or supplemented an existing model, the scope (patients, time, geography etc.), incentives explicitly outlined (e.g. for coordination, collaboration, treating complex patients, for quality improvement etc.), extent of integration (horizontal or vertical), any unintended incentives discussed, funding source (e.g. usual care budget or targeted source of funding), details of performance monitoring, impact, and mechanisms enabling or hampering success. Data was extracted by four reviewers (VS-SF, JS-SK) who worked in pairs to extract relevant information from the publications. We carried out a qualitative synthesis of results using a scoping study framework which resembles the analytical stage of qualitative data analysis, describing and categorising approaches of the payment mechanisms identified and considering the implications of the findings within the broader policy context adding meaning to the results [15]. Comparing and contrasting individual payment mechanisms, we constructed common conceptual domains that the incentive changes were targeting to influence integration. These formed the basis for our typology.

We supplemented the literature search with examination of current practical implementations. In Europe, eight countries (Austria, Croatia, Germany, Hungary, Netherlands, Norway, Spain, and UK) involved in the EU's Horizon2020 SELFIE project were each asked to identify the most promising two/three integrated care programmes aimed at multimorbid patients in their country (see Appendix for programme selection criteria and details of the programmes included). We combined financing data from the qualitative 'thick descriptions' (a combination of document analyses and interviews with several stakeholders) of each programme [16], with a diagram where each research group detailed all payers/payees involved in the programme, and the specific payment mechanisms used to pay in each of these relationships (see Appendix for examples).

## 2.2. Creating the typology

Systematically compiling and comparing current approaches to incentivise integrated care provided us with additional insight into how approaches could be differentiated in a meaningful way, with thematic analysis allowing us to identify important domains. We initially extracted details from the systematic literature review using a standardised extraction template. Through thematic analysis of these results we developed an initial typology outline. With the addition of the practical implementations, we developed this outline iteratively with the authors reflecting on the domains and the potential impact on integration of each through group discussion. Drawing from these discussions and the authors' own experience of integrated care and payment systems research (e.g. through the ICARE4EU and SELFIE projects) [6,16], we proposed a typology to better differentiate between these payments and to describe their potential impact on integration of care.

To illustrate use of the typology, we applied it by comparing the 'bundled payments' identified within two of the Dutch SELFIE programmes with those being used in US Medicare (drawing on information from the Centers for Medicare and Medicaid Services [17]). We choose these specific examples to illustrate the diversity of integration incentives that can be delivered under the 'bundled payment' label, and to exemplify the ability of the typology to differentiate these.

## 3. Results

### 3.1. Current payment mechanisms for integrating care

#### 3.1.1. From the literature

The systematic search of the literature yielded in total 15,849 records. 113 full texts were screened, with 85 eliminated for having: no chronic disease focus ( $n=32$ ); no payment mechanisms described ( $n=14$ ); no integrated care focus ( $n=15$ ); presenting only conference abstracts or other excluded study types ( $n=13$ ); where no full text was available ( $n=8$ ); or otherwise not meeting our selection criteria ( $n=3$ ). After removing duplicates and two rounds of screening 28 articles remained for the analysis, supplemented by a further four articles retrieved through the grey literature search (see Appendix for study selection flow chart). These articles described five conceptual payment approaches and 28 unique empirical approaches (see Appendix table for individual payment details).

Payments aiming to improve integrated care were introduced across multiple health systems. The majority were described in the USA ( $n=15$ ), Canada ( $n=2$ ), the Netherlands ( $n=2$ ), the UK ( $n=5$ ), Germany ( $n=2$ ), and other European countries ( $n=6$ ).

**3.1.1.1. Conceptual.** Five conceptual suggestions for alternative payment mechanisms were described including bundled payments [18], capitated payments involving multiple sectors and providers within a geographical area [19–21], and blended payments involving a combination of bundled payments, pay-for-performance and shared savings approaches [22]. These conceptual articles tended to describe more ambitious population-based approaches than we identified in the literature describing empirical mechanisms.

The most comprehensive approaches that were identified were described as 'global budget capitation' [19,20], based on a relationship where a provider is reimbursed on a capitation basis for the health and care needs of an entire population, frequently accompanying organisational single provider (either as a fully integrated body, or through alliances/networks) formation, e.g. accountable care organisations.

**3.1.1.2. Empirical.** Those empirical payments referenced many of the alternative integrated payment mechanisms described above [10], i.e. bundled payments (particularly in the Netherlands) [6,12,23–30], pay-for-performance (in the USA and some European health systems) [23,24,31–34], and pay-for-coordination (identified in some European health systems and the USA) [6,23–26,35].

Some traditional provider payment mechanisms were also substituted for others to incentivise integration. For instance, capitation-based payments were those most commonly described in the literature from the USA (and Canada) [31,36–45], frequently replacing FFS, activity-based payment.

Payments varied in target group and scope of care coverage. For example, many had disease-specific target groups (e.g. diabetes, mental health problems) and only covered care for that specific condition [12,23–25,27–33,35,41,43], while others had a broader focus (e.g. multimorbidity or chronic diseases more generally, frail elderly or high-cost patients, and a few took a whole population-based approach) [6,23–26,31,34,36–40,42,44–47].

Payments also varied by time horizon, from a single episode of care, monthly or quarterly [23–25,30,37–40], up to annual (or more) payments [6,12,23–31,34–36,41,43,47].

Some payments covered only horizontal integration [12,23–25,27–32,35,36,41,45] (i.e. care within a single health-care sector, e.g. primary care) and others covered broader vertical integration [6,23–26,31,33,34,37–40,42–44,46,47] (e.g. care over multiple sectors including primary, secondary and social care [48]).

Beyond the provider payments themselves, pooled budgets and/or shared savings (between a group of multidisciplinary providers) were introduced as an additional financing mechanism applied in addition to existing provider payment mechanisms (Germany and the USA) [6,23–26,35,47]. These are designed to incentivise co-ordinated care at the lowest appropriate level, theoretically turning attention to a prevention-based approach. Innovative direct patient payment approaches, where the patient manages their own budget for their health/care needs, so called personal budgets (UK) [38,46], were another example of alternative financing mechanisms (prior to the payment of providers).

#### 3.1.2. From practice

Of the 17 European integrated care programmes examined within the SELFIE research project, only six included an alternative payment mechanism. These approaches clustered across three countries (in line with the macro level policies of each country). In the Netherlands we observed bundled payment approaches, while in the United Kingdom and Germany, we observed pay-for-coordination with some pooling of budgets/shared savings to incentivise provider risk sharing.

### 3.2. A typology of payments for integrated care

The typology describes payments in terms of eight dimensions. As highlighted above, payments vary across:

- The scope of payment: Target population, the target population that the payment covers; Time, the period of time that the payment covers; Sectors, the number of health and care sectors (e.g. primary/secondary/social care) covered within the payment, i.e. whether it incentivises horizontal or vertical integration;
- The participation of providers: Provider coverage, the extent of total providers within the sectors (and geography) covered by the payment; Financial pooling/sharing, extent to which providers share risk and reward, incentivising interdependency issues to be addressed, e.g. through pooling funding/shared savings;
- The single provider/patient involvement: Income, the proportion of the providers' total income that is attached to the payment, i.e.

**Table 2**  
Typology of payments for integrated care. The number in [] indicates the score in terms of level of integration, as described below.

Category	Level of integration Domain	Low integration [1]	Medium integration [2]	High integration [3]
Scope of payment	Target population	Payment covers one specific patient group e.g. 'high-risk'	Payment covers slightly wider defined group e.g. over 65 s	Payment covers all patients in catchment area
	Time	Payment covers one contact	Payment covers multiple contacts e.g. during an episode of care	Payment covers care over a longer period e.g. a year
	Sectors	Payment covers care delivered by single sector e.g. primary care only	Payment covers care delivered by two sectors e.g. primary and social care/ primary and secondary care	Payment covers care delivered by three or more sectors e.g. primary, secondary and social care
Participation of providers	Provider coverage	Payment covers one provider only within the participating sectors e.g. a single GP practice within primary care	Payment covers care at multiple providers within the participating sectors e.g. all primary care providers and a proportion of secondary care providers	Payment covers care at all providers within the participating sectors e.g. all primary and secondary care services within the area
	Financial pooling/sharing	No pooled funding/ shared savings for providers	Proportion of budget is pooled/ savings shared for the defined horizon for providers	Total health and care budget is pooled/savings shared for the defined horizon for providers
Single provider/patient involvement	Income	Payment provides a small proportion of providers' total income	Payment provides a relatively large proportion of providers' total income	Payment provides the largest proportion of providers' total income
	Multiple disease/needs focus	Payment covers care for one condition for a single patient e.g. diabetes care only	Payment covers care for multiple conditions for a single patient e.g. all chronic condition care	Payment covers all care for a single patient e.g. all health and social care needs
	Quality measurement	Payment measures/rewards process measures e.g. number of health checks	Payment measures/rewards intermediate measures and lifestyle behaviour e.g. HbA1c, smoking	Payment measures/rewards health outcome measures e.g. Quality of life

a measure of how much 'skin they have in the game'; Multiple disease/needs focus, the extent of an individuals' total potential health and care needs (i.e. services) covered by the payment; and Quality measurement, the holistic nature of the measurement that the payment/quality measures account for, e.g. measured on a single measure of the care process (which may or may not affect the patient outcome) or more holistically accounting for the final outcomes of the patient.

On each dimension, we described a payment as incentivising low, medium or high levels of integration (see Table 2). We described payments within the geographical limits of the defined integrated care programme.

By ranking payment mechanisms (low to high integration) on the eight domains above, different payment mechanisms can be compared in terms of their expected effects on integration.

### 3.3. Applying the typology

To illustrate use of our framework, in Fig. 1 and Table 3 we compare the payments described in the two Dutch SELFIE programmes and those from US Medicare, thus comparing three versions of payments all commonly labelled as 'bundled'. Applying our typology allows differentiation of the models in finer detail.

The Medicare Bundled Payments for Care Improvement (BPCI) approach aims to link previously separate payments received within a single illness or course of treatment. The initiative is hospital-focused, with some models also combining some post-acute care. The approach is currently focused on 48 unique clinical episodes, mostly single disease- (e.g. acute myocardial infarction, diabetes), or procedure-focused (e.g. knee procedures, pacemaker replacement) [17].

The three bundles pay almost exclusively for sector-specific care (primary care in the Netherlands, and secondary care in US Medicare). They mostly provide a small amount of an individual's total (potential) care needs, mostly disease- or procedure-specific (with the frail elderly bundle slightly more comprehensive, covering all conditions in primary care and including some Geriatric

telephone consulting care, for instance). As expected, the two Dutch bundles have more similarities with each other than with the US model, with the Medicare bundle covering comparatively shorter time horizons, but with a slightly larger target population, gain-sharing arrangement for practitioners (financial pooling/sharing), and contributing to provider's total income to a larger extent.

## 4. Discussion

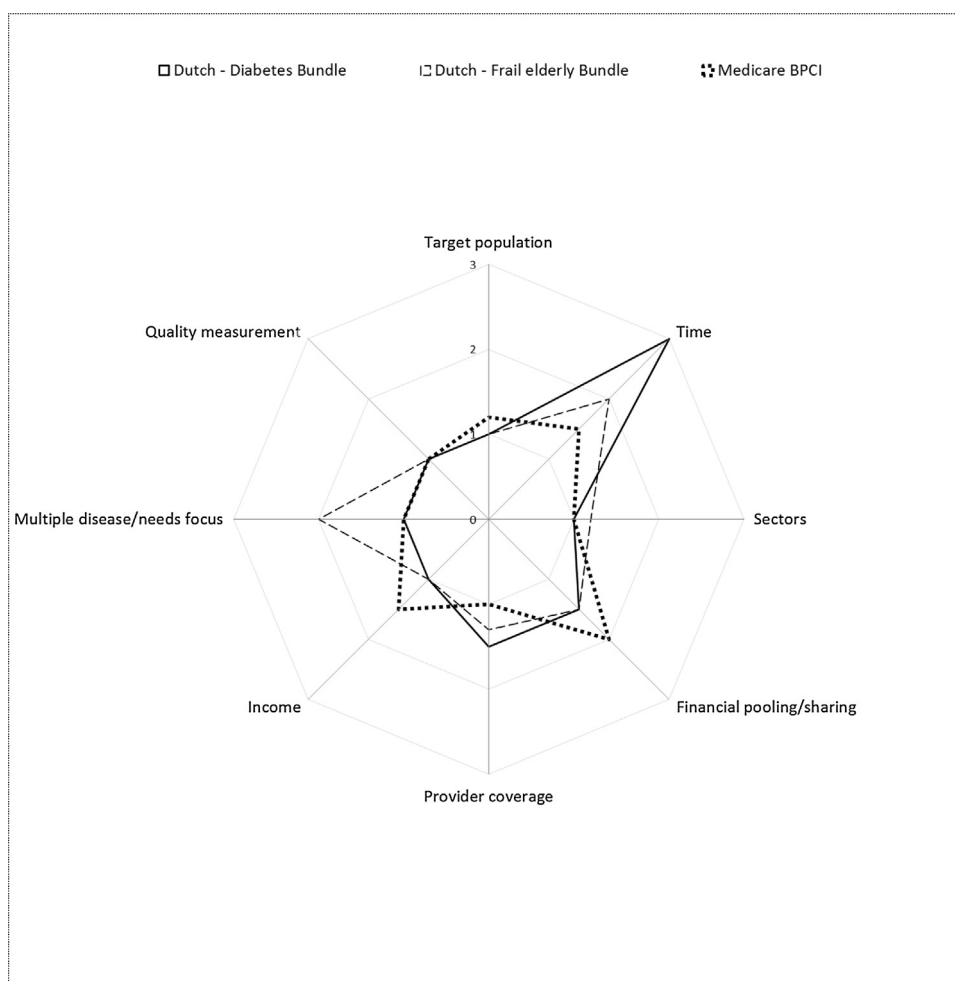
### 4.1. Summary

From our findings in the current literature and the practical examples, we find that there is comparatively little action to date, despite the rhetoric on the importance of new payment mechanisms for implementing integrated care [49]. The few payment mechanisms that have been implemented appear to be mostly disease- and sector-specific, compared to the ambitious whole population-based approaches described in the conceptual literature. Therefore, their adequacy to provide incentives for high quality care for those in most need for integrated care, e.g. frail elderly and people with multimorbidity, is questionable [50].

Detailed reporting on alternative payment mechanisms in the current literature is lacking across a number of important domains. The typology we present might therefore be helpful for addressing this reporting in future work, allowing better comparative analysis on the effectiveness of different approaches.

### 4.2. Limitations of the study

While our findings and typology are based on a large systematic review supplemented with practical examples from thick descriptions of 17 integrated care programmes for people with multimorbidity in the EU, there are nevertheless likely to be payment mechanisms used in practice that have not been identified. Our search terms may also have missed alternative payments that did not specifically target 'integrated care' (or one of the synonyms we searched), for example those labelled as 'value-based payments' instead, or those accompanying wider organisational reforms such



**Fig. 1.** Comparison of three payment approaches termed ‘bundled payments’ in the Netherlands and US Medicare using our typology, applying scores as detailed in Table 3, below. The larger area covered within the spider diagram, the higher level of integration theoretically incentivized.

**Table 3**

Comparison of three payment approaches termed ‘bundled payments’ in the Netherlands and US Medicare using our typology. In square brackets, low integration is scored as 1, with high integration scored as 3.

Dimension	Dutch - diabetes	Dutch - frail elderly	Medicare - BPCI
Target population	Covers care only for diabetes patients [1]	Covers care for frail elderly patients only [1]	Care episodes for patients with (individually) one of 48 diagnoses or procedures and Medicare insured [1.2]
Time	Fees negotiated per patient per year [3]	Fees paid for 3-month periods [2]	Per episode of care (with one model also up to 90 days post-acute) [1.5]
Sectors	Primary care only in care groups. They can also subcontract (e.g. dieticians) [1]	All primary care, but very small amount of secondary (geriatrician telephone consult) [1.2]	Hospital-centred [1]
Financial pooling/sharing	Only care group shares in risk/reward [1.5]	Only care group shares in risk/reward [1.5]	Hospitals offer physicians gain sharing arrangement where they benefit from reduced hospital costs [2]
Provider coverage	Care groups select multiple, but not necessary from all, provider organisations [1.5]	Pilot, limited number of care groups [1.3]	Per hospital, piloted [1]
Income	No detailed info, but since a single disease the providers are treating, bound to be a small % of total population [1]	Frail elderly up to 1% of practice’s total patient population [1]	Up to 30% of Medicare payments tied to ACOs or bundled payment arrangements [1.5]
Multiple disease/needs focus	Comprehensive diabetes care covered, but not care for other conditions [1]	All primary for any condition and small bit of secondary care (Geriatrics consult) covered, but not other care, e.g. emergency secondary care [2]	Only covers specific conditions / procedures [1]
Quality measurement	Paid for guideline components of care, e.g. check-ups, testing [1]	Payment on basis of number of case management MDT meetings etc performed [1]	Payment adjusted based on comparison with aggregated averages, e.g. length of stay together with a risk threshold [1]

as Patient-Centred Medical Homes or Accountable Care Organisations. However, we screened a large number of potentially relevant articles combined with grey literature searching to attempt to identify as many relevant payments as possible, and the typology is adaptable enough to allow for variations from current findings, as we illustrate in our application.

We suggest criteria for differentiating between low to high integration on each domain of the typology. However, these levels are not systematically quantifiable, so a qualitative decision needs to be made when reporting on or comparing between payment mechanisms. This perhaps leaves room for latent biases of those rating the payment mechanism, and raises questions over the likely replicability across different raters. We would therefore suggest that those using this typology justify explicitly and fully why they are scoring a certain domain at a certain level to assist in secondary analysis and interpretation.

#### 4.3. Interpretation in the context of the wider literature

Our typology complements existing arrangement for reporting payment mechanisms [7–9]. Our work builds on these to describe specifically the likely impact on integration of care and allows finer-grained comparison with regard to this measure. The ‘traditional payment mechanisms’ are still likely to set limits on specific domains within our typology, however [9]. For example, FFS will always be activity-based so cannot obtain a maximum rating on our ‘time’ domain.

While our typology focuses on payment mechanisms, the wider literature also highlights the likely importance of different means of financing integration [49]. We have partially captured this importance in our ‘financial pooling/sharing’ domain. Other typologies [40], however, would provide a complementary mechanism for capturing this funding classification more fully.

Beyond payment mechanisms, there are also more general barriers/facilitators for integration [51], e.g. historical working arrangements between sectors/providers, information technology, professional engagement and shared values. The relative potential for impacts of payment incentives in this mix is debatable, particularly if implemented in the absence of other facilitating adaptations to specific characteristics of the local context and national health system.

#### 4.4. Implications of the typology for policy and practice

If the typology we describe is used to design a new payment approach, it is important to recognise that there are other challenges to implementing new payments in practice. For example, additional case-mix (risk) adjustment may be needed to ensure that there is no adverse patient selection, and equity concerns are addressed (particularly for highly integrated payments aimed at whole populations, for instance, where there might be an unintended incentive to neglect complex high-cost patients) [52]. Furthermore, many approaches require specific data for monitoring quality that may not be available, large provider organisations that can take on high degrees of financial risk that may not be available in a given country context, and policymakers to consider the legacy payment system(s) that they will build on or replace.

In practice, integrated care payments might form part of a wider blend of payments within the health system, as such blended payments might provide a more balanced set of incentives. Our framework is flexible enough to allow the description of single payment types and combinations of different payment types.

Policymakers or contractors have to accept certain (political and financial) risks associated with the introduction of new payments, and national policy direction is therefore likely to be a determining factor in what is chosen [6]. Therefore, we do not make a rec-

ommendation for what the ‘best’ payment mechanism might be. Likewise, we do not make a judgement on what the most important domain(s) of the typology might be, as this will partially be determined by the specific aims of the incentives. A payment mechanism scoring ‘high’ across all domains might support more integration of care, but it might also face strong opposition because of higher financial risk to providers, for instance. This might require a trade-off in terms of what is valued by those designing the payment incentive, taking into account the local context and national health system characteristics.

There might be workarounds for the practical challenges we have listed above, for example, political will, creation of meso-tier organisations that bear risks, or use of shadow contracts to allow gentle introduction. Furthermore, with improved and standardised designing, reporting and monitoring of alternative payment mechanisms for integrated care, there would be more potential to optimise care for an increasing proportion of the population with complex needs [53]. While the rhetoric on payment mechanisms for integrating currently outweighs the implementation, this typology offers a starting point for improvement.

#### 4.5. Unanswered questions and future research

Beyond designing and describing alternative payment mechanisms for integrated care, there is a need to examine their effectiveness [54]. Particularly, there is the need to examine effects on multimorbid populations. These complex patients are likely to experience the most negative effects of a fragmented care system [55], and where we might, therefore, expect any beneficial effects of our ability to incentivise integration to be greatest.

## 5. Conclusions

Designing and implementing appropriate payment mechanisms for integration of care is still at an early stage. The typology developed in this study provides a basis to (re-)design, compare, and monitor provider payments that incentivise more effective and efficient care systems.

## Conflicts of interest statement

The authors declare no conflicts of interest.

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## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.healthpol.2018.07.003>.

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