



## Review

# Five types of OECD healthcare systems: Empirical results of a deductive classification



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## ABSTRACT

This article classifies 30 OECD healthcare systems according to a deductively generated typology by Rothgang and Wendt [1]. This typology distinguishes three core dimensions of the healthcare system: regulation, financing, and service provision, and three types of actors: state, societal, and private actors. We argue that there is a hierarchical relationship between the three dimensions, led by regulation, followed by financing and finally service provision, where the superior dimension restricts the nature of the subordinate dimensions. This hierarchy rule limits the number of theoretically plausible types to ten. To test our argument, we classify 30 OECD healthcare systems, mainly using OECD Health Data and WHO country reports. The classification results in five system types: the National Health Service, the National Health Insurance, the Social Health Insurance, the Etatist Social Health Insurance, and the Private Health System. All five types belong to the group of healthcare system types considered theoretically plausible. Merely Slovenia does not comply with our assumption of a hierarchy among dimensions and typical actors due to its singular transformation history.

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## 1. Introduction

Classifications have a long-standing tradition in the social sciences, given that processes of sorting, ordering, and comparing involved in classifying social, political, or economic entities are intrinsically scientific: “By making such classifications, generalizations regarding the members or properties of given categories are also made possible. In this way, we might think of classification as the foundation of all science” [2]. In the field of health system research, classification is a common business, too, and has resulted in the co-existence of numerous different classifications. Most of them are developed inductively on the basis of observations of existing healthcare systems. However, a systematic deduction of healthcare system types leading to a more coherent and robust taxonomy has hitherto been lacking. In response to this shortcoming, Wendt et al. [3] have elaborated a typology of healthcare systems developed by Rothgang et al. [1]. This typology

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distinguishes three dimensions that define healthcare systems: financing, service provision, and regulation. It is argued that each dimension can be dominated by state, societal, or private actors, technically yielding 27 distinct combinations.

So far, this typology (in the following labelled RW typology) has been used as a background, comparative framework for broad descriptions of the health systems in England, Germany, the US [4,5], the Netherlands [6], and Italy [7] as well as for the quantitative clustering of health systems based on access to care and health service provision [8]. It has also guided the case selection and explanatory approaches to health system change [9,10]. A systematic application of the RW typology to a larger country sample, however, has not been conducted until now.

In this paper, we argue that out of the 27 types the RW typology offers, only ten are logically plausible and thus expected to occur in the real world. Our argument is based on the assumption that there exists a hierarchy of dimensions (regulation – financing – service provision) and actors (state – societal – private). We assume that the dominant actor at the higher level restricts the potential range of actors at subordinate levels. In order to test our argument, we have classified 30 OECD healthcare systems. Healthcare systems in 29 of these countries belong to the ten types we considered logically possible. These countries cluster into five different types: the National Health Service (eight cases), the National Health Insurance (five cases), the Social Health Insurance (four cases), the Statist Social Health Insurance (eleven cases), and the Private Health System (one case). Only Slovenia does not follow the hierarchy rule in one dimension and thus forms a healthcare system type precluded by our assumptions.

Our paper starts with a brief overview of existing typologies of healthcare systems, followed by a more detailed description of the RW typology (Section 2). We then apply our argument of the hierarchy of dimensions and actors and present the ten logically possible healthcare system types (Section 3). Section 4 describes our methods and data, while Section 5 constitutes the empirical core of the paper, namely the classification of OECD health systems. The presentation of results is followed by a discussion of the five existing healthcare system types and the special case of Slovenia (Section 6), and some conclusive remarks.

## 2. Healthcare systems classification

### 2.1. Existing typologies

There is no dearth of health system typologies. Field's [11,12] early functional categorization examines the extent of public control over healthcare resources (funding, personnel, knowledge, and legitimacy) vis-à-vis professional autonomy. Terris [13] aims at a global classification based on the nature of the economic system, where the public assistance type corresponds to pre-capitalist systems, the insurance type complements capitalist systems, and health systems of the National Health Service type were developed by socialist regimes. Taking a different approach again, Frenk and Donabedian [14] aim to identify types of health systems coexisting in a given country. The principal

question of interest here is the extent of state control over health programmes.

The OECD classification [15] of wealthy Western countries, which builds on similar criteria, arrives at three types that have been used regularly by researchers [2]. The extent of coverage, the mode of financing and delivery of healthcare distinguish the National Health Service (NHS) from the social health insurance model (SHI), and the private health insurance model (PHI). The NHS model features universal coverage, funding from general tax revenue, and public ownership of the health infrastructure. The SHI model combines universal coverage with funding coming mainly from contributions and public or private delivery. Finally, in the PHI model coverage is based on private insurance only, which is also the major funding source. Delivery is characterized by private ownership. A more recent typology by Lee et al. [16] criticizes the ambiguous classification of South Korea and Taiwan under the established three OECD categories. It is argued that these systems form a category of its own, combining universal access to healthcare through a state administered, single-payer SHI scheme with private provision.

Next to classifications mainly based on qualitative assessments, three recent papers have contributed to the healthcare regime literature by proposing the identification of health system classes through cluster analysis. Joumard et al. [17] focus on healthcare institutions in OECD countries, while Borisova [18] seeks to group healthcare systems in post-soviet transition countries in order to estimate their effects on health outcomes, and Wendt [8] advocates indices of service provision and access to healthcare.

The different approaches to classification share many common concepts and highlight the main categories that have to be considered when classifications are made. The *delivery of services* and their *financing* are core dimensions to be looked at, particularly with respect to the extent to which the state intervenes in healthcare and with respect to the public/private mix. Occasionally, these criteria are supplemented with questions of professional autonomy, eligibility, coverage or access, and the administration of financing. The latter all refer to aspects of *regulation*. This is why Rothgang et al. [1,4] and Wendt et al. [3] argue that next to financing and service provision, regulation must be considered as a dimension of the healthcare system in its own right and be included systematically in health system typologies. Indeed, a series of detailed comparative case studies concerned with health system types put the main actors of health systems as well as modes of governance at the centre of their analyses. The studies point to similar concepts distinguishing three ideal forms of regulation, corresponding to state-based actors, societal actors, and market participants. Hierarchy [19–22], state-led systems [23], or command-and-control-systems [24] frame one class of coordination or governance. The second refers to networks [19,22], collegiality [20,21] or corporatism [23,24] as means of regulation through non-governmental actors. Finally, the market emerges as a typical mode of regulation in these studies. Consequently, again three types are identified, highlighting the statist, corporatist, and private modes of healthcare regulation.

## 2.2. The Rothgang–Wendt typology

Generally, the cited typologies take a somewhat inductive approach, more or less closely related to a sample of real cases of healthcare systems. Often, features of the British, German, and US health systems guide the classification. New types such as the NHI or Moran's insecure command-and-control state emerge as countries fail to fall into the established categories. While the concentration on three ideal types contributes to the understanding of health systems by highlighting deviations from the ideal concepts, such a classification seems inadequate to properly reflect real historical cases [25]. The typology by Rothgang and Wendt (RW typology) shares many categories with the above typologies and profits from case studies as well as inductive concepts, but it also differs from these approaches since it attempts a *deductive* construction of healthcare system types, allowing a more precise classification of healthcare systems.

Basically, as Wendt et al. [3] state, healthcare systems are all about the delivery of health services for which someone has to raise the money. This establishes relationships between providers of services, the beneficiaries, and financing institutions which have to be regulated. Hence, the healthcare system is defined by three functional processes: service provision, financing, and regulation. They further argue that societies can choose from a set of actors and co-ordination mechanisms ranging from hierarchical state intervention with a clear domination-subordination relationship to collective negotiations, where societal actors enter into long-term agreements, and dispersed exchange processes on markets [4].

Not surprisingly, similar sets of actors and modes of regulation emerged from inductively generated taxonomies, echoing the long-established trichotomy of state, society, and market in the social sciences. Now, if each of the three functional processes can be dominated by one form of actor/regulation, technically 27 distinct combinations are conceivable (see Fig. 3). Although some of these combinations are rather unlikely (as will be shown in more detail in Section 3) and the taxonomy remains based on qualitative judgement, the possible resulting types are more transparent and open to different outcomes than in many other qualitative classifications.

Let us now take a closer look at the actor constellations and coordination processes within the three dimensions. The *regulation dimension* can be structured as the relation between financing agencies, providers, and (potential) beneficiaries [1]. From this set of actors follow six objects of regulation, as illustrated in Fig. 1: coverage, the system of financing, the remuneration of providers, the access of providers to markets, the access of patients to providers, and the benefit package. The pertinent question for classifying the regulation dimension that thus arises is “*who* is in charge of regulating and controlling these relationships?” [3] Drawing upon the above concepts, the state may be in charge by hierarchical means, societal actors may seek control through collective bargaining, or market mechanisms may be at work. Assigning these ideal concepts of state, society, and the market by careful qualitative judgement

to the objects of regulation is the basis for classifying the regulation of health systems.

The classification of healthcare systems proceeds with the *financing dimension*. Here, general and earmarked tax revenues reflect state financing. One of the main consequences of tax financing is that it does not result in direct entitlements to health services. At the other end of the spectrum, contributions to private insurance and out-of-pocket payments occur in the private sector. Private spending is closely related to individual health risks. While there is a redistributive element in private insurance, namely the ex-post redistribution from the healthy to the sick, premiums generally seek to rate individual risks. Social insurance contributions reflect the societal element. Financing is organized via parafiscal levies channelled into funds to which the government has no direct access. Social insurance contributions constitute entitlements to health services. Generally, they are separated from individual health risks and rather related to income, thus incorporating some elements of ex-ante redistribution.

Finally, the *service provision dimension* needs to be classified. While most classifications only identify public/private mixes, the trichotomous concept is more meaningful since private non-profit providers, reflecting a societal element, are neither similar to for-profit market actors nor part of the state administration. The role of public, societal, and private providers can be measured using a trichotomous service provision index [4]. The first step to constructing this index is to allocate weights to the main healthcare sectors (inpatient care, outpatient and dental care, pharmaceuticals) according to the financial resources allocated to each sector. Next, the public/private mix within each of these sectors is measured. Inpatient care is indicated by the share of hospital beds in public, private non-profit, and private for-profit ownership, and in the outpatient, dental, and pharmaceutical sectors the employment status of doctors and pharmacists proxy for state, societal, and private actors. Public employment represents state actors, while non-profit institutions and their employees stand for the societal realm. Self-employed professionals or those employed in for-profit enterprises are considered as private actors. The sector weights and the information on the status of hospitals and health professionals are then used to qualify the service provision dimension. For further details see Section 4 below on data and methods.

## 3. Hierarchy of healthcare actors and functions

The deductive model for healthcare system types leads to 27 possible combinations, but some appear inherently dysfunctional. For example, a model that combines the public provision of services with private financing seems implausible. The motive behind public provision is to guarantee equal access, which conflicts with predominantly private financing. Although Wendt et al. [3] already indicate that some combinations are more likely than others, they offer no rule on how to exclude unlikely types. In this paper, we add the theoretical argument of a hierarchy

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Relations between (potential) beneficiaries and financing agencies:	
(1)	<i>Coverage</i> : the inclusion of (parts of) the population in public and/or private health systems
(2)	<i>System of financing</i> : the financing of health care by public and/or private sources
Relations between financing agencies and service providers:	
(3)	<i>Remuneration of service providers</i> : the specific system of provider compensation
(4)	<i>Access of (potential) providers to health care markets</i> : access to financing agencies
Relations between service providers and (potential) beneficiaries:	
(5)	<i>Access of patients to service providers</i> : the specific delivery of care to patients
(6)	<i>Benefit package</i> : the content and range of services offered to patients

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Fig. 1. Objects of regulation.

Source: Rothgang et al. [4].

of healthcare actors and functions to the original RW typology in order to shortlist the plausible combinations.

We assume that the three dimensions are not entirely independent from each other, but follow a clear order, with regulation leading, followed by the financing dimension and, finally, service provision. Moreover, we expect that the degree of collectivization (state, society, and private) of superior dimensions limits plausible characteristics of subordinate ones, as the latter can only undercut or equal the former's degree of collectivization. For instance, state regulation is a necessary prerequisite for tax funding, which in turn is a necessary precondition for public service provision.

In order to substantiate this hierarchy of actors and functions, we conjecture a trade-off between a public interest in healthcare and the economic normativity of capitalist societies. The latter suggests that the exchange of commodities is by default performed through markets. Hence, democratic governments have to justify any kind of state intervention by reference to either market failure or distributive goals. As health services are commonly acknowledged as vulnerable to market failures [26] and as a prototype of a merit good [27], state involvement can be justified by the public interest in guaranteeing effective, affordable, and accessible healthcare for the entire population [see 28, 29].

However, the extent of state involvement is variable. The highest potential for goal-attaining with the lowest visible economic 'disturbance' is achieved if state involvement is limited to the sphere of regulation. Thus, state authorities or societal actors can directly control the safety and effectiveness of care. Moreover, regulatory measures might even improve affordability and access to healthcare. However, in order to guarantee affordable health services especially for high-risk groups and the poor, public financing is indispensable. Hence the state can either finance healthcare out of its own revenues or grant societal actors privileges to raise funds for this purpose. This already reflects a higher (visible) degree of state intervention in the economy, as public sources subsidize market prices of providers or patients and therefore distort demand. Nonetheless, even public funding might still not solve drawbacks with regard to universal access to services based on need. In this case, the state can take its strongest interventionary measure and provide health services itself. Alternatively, the state can limit access to the healthcare market to non-profit providers. This solution is less intensive than state provision but still signifies heavy market intervention. Thus, the onus of legitimizing public

involvement, counter to the norm of free enterprise and the interests of rent-seeking private actors, increases at every stage of the process. During welfare state expansion regulation will be the first, financing the second, and service provision the last area of public involvement in healthcare. The other way round, during periods of retrenchment service provision is most vulnerable to privatization. Therefore, the functional logic of this argument also fits actor-centred approaches and theories of institutional change.

By applying the assumption of a hierarchy of healthcare actors and functions to the 27-box matrix established by Wendt et al. [3], the number of plausible healthcare system types shrinks to ten (see Fig. 2). If the regulation of the health system is under direct state control, six plausible combinations arise. Firstly, we get the *National Health Service* type with a dominant role of the state in all three dimensions. The second combination leads to a type we label *Non-profit National Health System*, as the state regulates and finances healthcare but the provision of services relies on independent non-profit providers. In the third combination – the *National Health Insurance* type – services are contracted out to for-profit providers. The fourth plausible combination represents an *Etatist Social Health System* where the state holds the regulatory power but grants privileges for the financing and provision of health services to societal actors (e.g. sickness funds with their own health facilities). The fifth type is where service provision is in the hands of for-profit providers. This so-called *Etatist Social Health Insurance System* is also the sole plausible 'completely mixed type'. Finally, the sixth combination depicts an *Etatist Private System* where funding and provision is left to market actors but their interactions are heavily regulated by the state.

Next, we turn to three plausible combinations in the case of governance under the control of societal actors. The first one reflects an ideal-typical *Social Health System* dominated by corporatist actors in all dimensions. Secondly, we identify the *Social Health Insurance System*, where societal actors have competences to regulate and finance the health system but where most service providers perform for profit. The third combination represents a *Corporatist Private Health System* dominated by private insurers and for-profit providers but with comprehensive collective contracts between umbrella associations on both sides.

Finally, we take a look at the coordination of the health system by private market actors, based on voluntary contracting. Here, there is only one plausible combination, namely a *Private Health System*, under which financing must rely either on private insurance or out-of-pocket

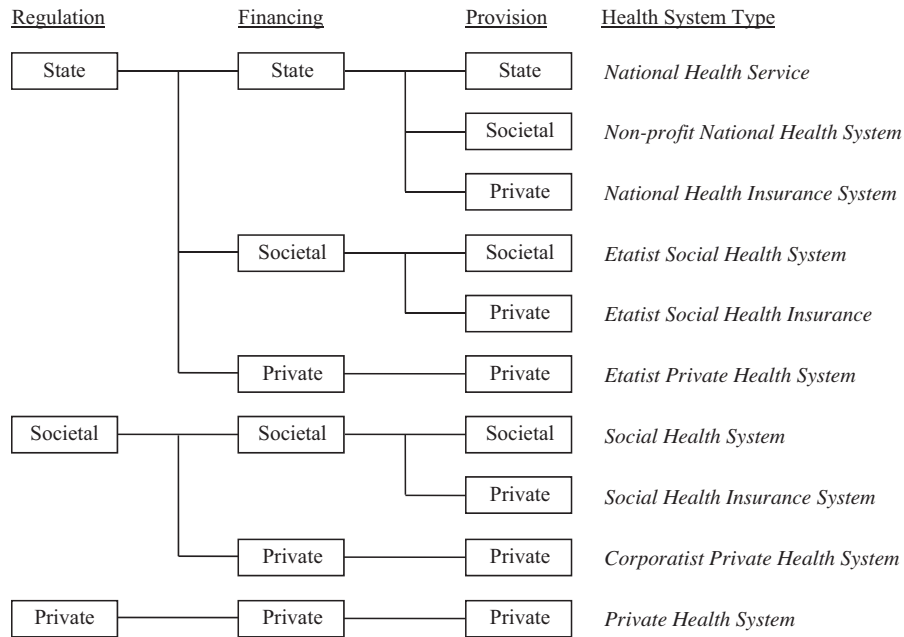


Fig. 2. Plausible healthcare system types.

payments, and health services are likely to be performed by for-profit providers. Hence, the sole plausible combination is also the ideal-typical one.

While this deductive reduction from 27 to 10 plausible healthcare system types highlights the theoretical relationship between healthcare dimensions, it also faces some drawbacks. For example, the neglected combinations may be implausible but not completely impossible. As changes in regulation, financing, and service provision are often incremental and the dimensions are nominally scaled, inherently 'dysfunctional' combinations may occur during transformation processes. Moreover, the population of a country might be covered through several separate sub-schemes (e.g. in Germany or the United States). In this case, an implausible aggregate may result, even if all sub-systems constitute a consistent type [Simpson's paradox, see 30].

#### 4. Methods and data

Health systems in industrialized countries are highly complex institutional constructs that differ widely between countries. For classification purposes it is therefore necessary to reduce complexity by focussing on certain aspects of reality and neglecting others. We have tried to do this by focussing on the "core" part(s) of each healthcare system. Many health systems do not consist of a unitary scheme, but of several segregated parts. With regard to vertically segregated health systems – i.e., in which two or more schemes covering different parts of the population exist in parallel – we have concentrated on the system(s) with the greatest population coverage. We have neglected systems that cover less than ten per cent of the population because, empirically, subsystems below this threshold are unlikely to exert enough impact

on the overall health system to cause reclassification. Where a health system shows horizontal segregation – i.e. a basic system for all and additional systems for certain population groups or additional private systems – we have focussed on the general system for categorization and disregarded the additional ones. Furthermore, the analysis is limited to the area of healthcare which comprises dental care but excludes prevention and long-term care.

In order to gather enough empirical data, the theoretical framework of healthcare system classification developed above had to be further specified. Generally, classification is based on the relevant actor in charge of regulation, financing and providing services, thereby distinguishing between state, societal (private non-profit) and private (for-profit) actors. To ensure consistency, we have set clear thresholds for quantitative data and drawn up strict decision criteria for qualitative data. In the following, we will outline this empirical framework, a detailed description of which can be found in [31].

Concerning the regulatory dimension, we have classified each object of regulation according to the actor responsible for regulating the field in question (see Fig. 1). We have disregarded the regulation of population coverage, because it turned out that this is a metacategory of regulation, i.e., in every country studied the state is responsible for deciding which groups will be covered by the public healthcare system. As regulatory actors often differ between inpatient and outpatient sectors, we have classified both sectors separately for the regulatory fields (3)–(5). After having classified each of the five categories, we then summarized all of them, giving one point if the whole category was defined as state, societal, or private, respectively, half a point if two different actors were relevant in one category, and one third of a point if all three actors were involved in regulation. In the end, the actor



#	Healthcare system type	R	F	P	Cases
1	<b>National Health Service</b>	<b>St</b>	<b>St</b>	<b>St</b>	Denmark, Finland, Iceland, Norway, Sweden, Portugal, Spain, UK
2	Non-profit National Health System	St	St	So	
3	<b>National Health Insurance</b>	<b>St</b>	<b>St</b>	<b>Pr</b>	Australia, Canada, Ireland, New Zealand, Italy
4	State-based mixed-type	St	So	St	
5	State-based mixed-type	St	Pr	St	
6	State-based mixed-type	So	St	St	
7	State-based mixed-type	Pr	St	St	
8	<b>Etatist Social Health System</b>	<b>St</b>	<b>So</b>	<b>So</b>	
9	Social-based mixed-type	So	St	So	
10	Social-based mixed-type	So	So	St	Slovenia
11	Social Health System	So	So	So	
12	<b>Social Health Insurance</b>	<b>So</b>	<b>So</b>	<b>Pr</b>	Austria*, Germany, Luxembourg, Switzerland*
13	Social-based mixed-type	So	Pr	So	
14	Social-based mixed-type	Pr	So	So	
15	<b>Etatist Private Health System</b>	<b>St</b>	<b>Pr</b>	<b>Pr</b>	
16	Private-based mixed-type	Pr	St	Pr	
17	Private-based mixed-type	Pr	Pr	St	
18	<b>Corporatist Private Health System</b>	<b>So</b>	<b>Pr</b>	<b>Pr</b>	
19	Private-based mixed-type	Pr	So	Pr	
20	Private-based mixed-type	Pr	Pr	So	
21	<b>Private Health System</b>	<b>Pr</b>	<b>Pr</b>	<b>Pr</b>	USA
22	Completely mixed-type	St	Pr	So	
23	<b>Etatist Social Health Insurance</b>	<b>St</b>	<b>So</b>	<b>Pr</b>	Belgium, Estonia, France, Czech Republic, Hungary, Netherlands, Poland, Slovakia, Israel*†, Japan†, Korea*
24	Completely mixed-type	Pr	St	So	
25	Completely mixed-type	Pr	So	St	
26	Completely mixed-type	So	St	Pr	
27	Completely mixed-type	So	Pr	St	

**Bold/fine** indicates **plausible/improbable** types. **Black/grey** indicates **empirically existent/missing** types.

Abbreviations: (R)egulation, (F)inancing, (S)ervice provision, (St)ate, (So)cietal actors, (Pr)ivate actors

\* Only relative majority in financing;

† Only relative majority in service provision

Chile, Greece, Mexico, and Turkey are missing due to insufficient data

**Fig. 3.** Dispersion of OECD healthcare systems. **Bold/fine** indicates **plausible/improbable** types. **Black/grey** indicates **empirically existent/missing** types. Abbreviations: (R)egulation, (F)inancing, (S)ervice provision, (St)ate, (So)cietal actors, (Pr)ivate actors. \*Only relative majority in financing. †Only relative majority in service provision Chile, Greece, Mexico, and Turkey are missing due to insufficient data.

dominating the most categories determined classification. In most cases, the classification of the regulation dimension was based on the most recent available WHO health system reviews (HiT-reviews) of the respective countries. Only where HiT-reviews were outdated or not available, or where the required information was not included in the report did we use other sources.

For the financing dimension, countries were classified using OECD Health Data for the year 2008. This data set provides health expenditure by financing agents and differentiates between government (*state*), social security funds (*societal*), private insurances, and out-of-pocket expenditure (both *private*). The highest share then determines in which group the respective country is classified. As relative majorities might occur with three financing sources, we signal predominance below the 50 per cent level in Section 5.

The classification of health service provision is based on the service provision index developed by Rothgang et al. [4]. In line with the index, we focussed on main items of expenditure in the health systems of developed countries: inpatient care, outpatient care, and pharmaceuticals. Our first step was to weight these sectors according to their relative share of health expenditure. We then identified the shares of the dominant providers within each sector. In a third step, we multiplied the standardized share of total health spending of the selected sectors with the relative shares of private, societal, and state actors in each sector,

and then summed up the received shares of private, societal, and public provision. Decisive for the classification is which actor provides the relatively highest share of services. Again, relative majorities are marked in Section 5. As far as possible, we based our classification of service provision on OECD Health Data for the year 2008 and turned to alternative sources only where that data was lacking. In the cases of Ireland, Italy and the UK, however, we had to follow a more heuristic approach because we had no exact data on the distribution of health providers. Detailed information about data sources for each country is given in Böhm et al. [31].

## 5. Results

The classification of 30 OECD health systems according to the three dimensions regulation, financing, and service provision leads to six country clusters, which are presented in Fig. 3. Five of these clusters correspond to healthcare system types that we characterized as plausible ones: the National Health Service, National Health Insurance, Social Health Insurance, Private System and Etatist Social Health Insurance type. Only the Slovenian healthcare system currently resembles a combination (#4) which we deductively described as implausible, as the state still provides most of the healthcare services with its own facilities while funding and regulation are dominated by societal actors. The other 16 types considered

implausible according to the hierarchy logic do not exist in any of the OECD countries. It is worth mentioning that even the five countries that are classified only with a relative majority in at least one dimension (marked with an asterisk or dagger in Fig. 3) do not show a tendency to implausible combinations if the critical majority changed.

The five plausible healthcare system types with at least one currently existing case in the OECD world are depicted in bold, black characters in Fig. 3. The National Health Service (#1) forms the second largest group and is characterized by state dominance in all three dimensions. This group includes all the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), two Iberian ones (Portugal and Spain), and the United Kingdom. The National Health Insurance System (#3) shares the features of the first type, but relies on for-profit rather than state provision. It is composed of four Anglo-Saxon countries (Australia, Canada, Ireland, and New Zealand) plus Italy. The Social Health Insurance system (#12) is the only existing plausible health care system type whose regulatory dimension is dominated by societal actors. This type prevails in the four German-speaking countries (Austria, Germany, Luxembourg, and Switzerland). The Private Health System (#21), an “ideal type” with private actors playing the main role in all three dimensions, can only be found in the United States. The Etatist Social Health Insurance type is a mixture of state regulation, societal financing and private provision. With eleven cases, this type represents the biggest cluster of countries in the OECD world. It mainly consists of Central and Eastern European countries such as Estonia, Czech Republic, Hungary, Poland, and Slovakia, but is also found in two East Asian OECD members (Japan and Korea), three Western European countries (Belgium, France, and the Netherlands), and Israel.

Healthcare system types which follow the hierarchy rule, but are not present in our OECD sample are depicted in bold grey characters in Fig. 3. We do not find cases of Non-profit National Health Systems (#2), Etatist Social Health Systems (#8), Social Health Systems (#11), Etatist Private Health Systems (#15), or Corporatist Private Health Systems (#18). This is firstly related to the fact that non-profit actors do not dominate the service provision in any OECD country, which is a necessary prerequisite for types #2, #8, and #11. Secondly, predominantly private funding, which is essential for types #15 and #18, is currently not to be found in any of the countries in our sample except for the US. It should be noted that three of our four missing cases are mostly privately financed, however, due to incomplete data for the other dimensions, a proper classification is not feasible.

## 6. Discussion

Our classification of OECD healthcare systems has revealed five types which correspond with our assumptions, and the special Slovenian case. For each of the five health care system types we shall now compare our classifications with earlier findings on healthcare typologies, examine how close the countries really match the respective health system type as well as the variance

within types, and give tentative explanations for the observed characteristics. The discussion will also trace past transformations of countries from one type to another and conjecture on possible future developments. In the last section we turn to the Slovenian case and discuss why we believe that it does not falsify our hierarchy model of healthcare actors and functions.

### 6.1. The National Health Service type

The National Health Service represents an ideal type where regulation, financing and provision are governed by the state. The NHS type includes the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), the UK, and two southern European countries, Portugal and Spain. The literature consistently highlights the strong role of the state in the Nordic countries and the UK, though labels vary from NHS-type [15] to ‘state-led’ [23] and ‘command-and-control’ healthcare states [32]. State dominance in Portugal and Spain challenges earlier findings in the literature. It has been argued that southern European countries represent a family of nations of its own. Moran [32] points to the differences between southern ‘insecure command-and-control’ and northern ‘(entrenched) command-and-control’ states. While the Mediterranean states have developed NHS features, he maintains, private insurance and out-of-pocket spending as well as private provision have been much more pronounced in the southern family. According to Moran, late implementation of NHS structures at times of fiscal austerity and a lack of administrative rationality have contributed to incomplete transformation. Similarly, Toth [33] identifies a Southern European healthcare model distinguishable from the Northern European NHS model by more recent creation around 1980, the legacy of SHI structures, a higher share of private provision, and low satisfaction with the health system.

Concerning variance within the NHS type, in all countries classified as such the state has the responsibility to govern the relation between the main actors in healthcare. Private actor decisions only play a role with respect to access of patients to services since in most systems there is some leeway for choice of providers. In Denmark and Iceland societal actors, namely physician associations, have some regulatory power in determining access of providers to markets and negotiating remuneration. The formal regulatory structures confirm the strong role of the state in the NHS family.

A closer look at financing reveals elements of SHI in Iceland, Finland, Norway, Spain, and Portugal. According to OECD data, the financing share of contributions is between 1.2% (Portugal) and 28.3% (Iceland). However, in Scandinavian countries contributions rather represent earmarked taxes. They accrue to more or less autonomous funds but do not establish any entitlements to services [34–36]. In Spain and Portugal SHI schemes for some groups of the population have survived and private insurance premiums play a small role (Portugal 4.9% and Spain 5.8%), while their spending share is marginal in the Scandinavian countries and the UK. Private spending shares in Spain and Portugal clearly surmount those observed in the northern countries and the UK.

The NHS family also shows some variance with respect to public provision. Hospital beds in public ownership only add up to 66–75% of all beds in Spain and Portugal, while their share exceeds 90% in Scandinavia and the UK. All NHS countries give some leeway for private provision in the outpatient sector, for specialist care, dental services, and pharmaceuticals. This said, public provision through state-owned hospitals and salaried physicians in public facilities is the prevailing modality. This special feature distinguishes NHS countries from other health systems. The pivotal questions are therefore: how did the government gain control over powerful healthcare providers, and what are the common factors that explain the curtailment of provider autonomy?

The implementation of the Scandinavian NHS can be interpreted as part of the general welfare state expansion and transformation into a social democratic welfare regime in the postwar economic boom. The NHS reflects social democratic values of universal coverage, equal access to services and beliefs in the efficiency of public services, and also the UK, Spain, and Portugal all had social democratic governments at the time of NHS implementation. While the British NHS was introduced shortly after the end of World War II in a period of strong values of national solidarity [37], health reforms in Portugal (1979) and Spain (1986) followed the end of dictatorships in times of powerful social movements [33]. A further characteristic that can be found in all countries is the low number of veto points in the political institutional system [38]. Following Immergut's [39] analysis of health system evolution, the power of medical professions is dependent upon veto points in the political system they can use to turn down decisions that impair their professional autonomy and profit interests. Hence, social democratic governments and the low veto potential of providers seem to be necessary requirements for the establishment of an NHS and state dominance respectively in all dimensions of the healthcare system. Concerning future developments, the basis for state control in regulation and financing of NHS systems seems firm. However, there have been privatization trends in the service provision dimension [10]. Thus, if – either due to scarce public budgets or hopes of increasing efficiency through private provision – NHS systems progressively privatized their hospitals or contracted doctors as private providers, we might observe a transformation into the NHI type.

### 6.2. The National Health Insurance type

National Health Insurance (NHI) systems combine NHS regulatory structures and tax financing with dominantly private service provision. NHI systems include Australia, Canada, Ireland, Italy, and New Zealand. In the healthcare literature, these countries have been grouped with NHS systems, but some also referred to other categories such as Social Insurance or public contracting in the case of Canada [20,40] or a Southern European Model (Italy) [32,33]. The classification of these countries in the existing literature is thus somewhat vague.

While the state is responsible for regulating the relation between providers, payers, and patients, there is some leeway for patients to choose physicians or hospitals. In

Canada, the benefit package is negotiated between the provinces/states and the Medical Association, representing a societal modality. In New Zealand, an independent agency determines the pharmaceutical benefit package at national level, while other benefits are defined by state actors on the local level.

The private financing share ranges from 18.7% in New Zealand to nearly one third in Australia and Canada. In Italy the private component refers mainly to out-of-pocket spending, while in the English-speaking NHI countries private insurance is non-negligible at 4.8% in New Zealand and up to 13.5% in Canada. While tax spending also dominates in NHI countries, the larger share of private spending and the more important role of private insurance point to dissimilarities between the NHS and NHI models.

The decisive difference can be found in service provision, which remains for the most part in private hands. First of all in NHI countries, compared to NHS countries, private or societal hospitals add up to a larger share, as measured by the number of hospital beds. This said, public hospital beds still outnumber beds in private and societal ownership (about 60–80% of the total), except for Canada where nearly all hospitals are owned by non-profit organizations. In all NHI countries, service provision in the outpatient, dental, and pharmaceutical sectors is overwhelmingly in private hands.

How can we explain the pattern of private delivery in state-regulated, tax-financed systems? Considering the main goals of public healthcare systems – universal coverage and equal access to services – public delivery may not be the top priority. If public agencies contract private providers, universal free care can be guaranteed without forcing doctors into public service [4]. In several NHI countries (Canada, Italy, and Ireland), the fundamental health reforms were implemented by centrist or conservative parties which generally adhere to the idea that public services are prone to inefficiency. The political systems of Australia, Canada, and Italy also provide more veto points to influence legislation either through federal structures or unstable governments. In Australia, for example, the introduction of the public scheme faced fierce opposition by the medical profession and the Liberal party; the latter gained power soon after the implementation of the public scheme and reverted to strengthening private healthcare. It took another change in government to consolidate Medicare [41]. By and large, it may be argued that the exceptional conditions required to implement and sustain an NHS system have not obtained in the NHI countries. This is not to say that NHI systems are simply failed NHS systems. Rather, NHI systems express political preferences for more private involvement under state control, particularly in the provision of health services.

### 6.3. The Social Health Insurance type

The Social Health Insurance type represents a dominant role of societal actors in healthcare regulation and financing, whereas services are mainly delivered by private for-profit providers. Within the OECD context, four German-speaking countries belong to this system type: Austria, Germany, Luxembourg, and Switzerland.



At first glance this cluster seems to comprise all the former Bismarckian welfare states, but there are notable exceptions [42]. Firstly, France and Belgium are not part of this group since the state governs regulation, and not societal actors. Secondly, Switzerland is not commonly considered to be a typical example of a Bismarckian system due to its liberal tradition [43]. The latter can be explained by the fact that Switzerland joined the SHI type relatively late. The government did not introduce compulsory health insurance for the entire population until 1996 [44]. Hence, Switzerland switched over to a SHI system with many residual elements of its former private system (e.g. voluntary deductibles amounting to an out-of-pocket financing share of 30%). Against the background of an extremely veto-ridden political system [39], this is already a far-reaching reform which limited further direct state involvement. By contrast, the French-speaking countries had the state capacity to claim back core regulatory features from corporatist actors. Hence, the continuity of the corporatist SHI as well as the private status of physicians might be interlinked with fragmented political systems, allowing interest groups greater influence.

This is clearly the case in Germany, which still fulfils its role as the prototype of an SHI system [23,32]. Although policymakers have strengthened market principles (e.g. free choice of sickness funds) and state regulation (e.g. sectoral budgets) over the past two decades, the core regulatory competencies of corporatist actors have remained uncontested. This can be seen as a result of a veto-ridden political system and strong professional resistance to direct state involvement.

Austria, by contrast, is characterized by a greater influence of the state in financing, regulation, and service provision. Contributions only cover a relative majority of overall expenses (47%) due to a significant share of tax funding (around 30%). The latter is spent on the inpatient sector, which is almost entirely public (all other sectors are for-profit). This might be related to the fact that the hospital sector is controlled by the nine Austrian states [45]. Therefore, regional governments are keen to protect one of their (rare) key policy fields within the political context of a federal state.

Although this institutional feature is missing in Luxembourg, corporatist actors were able to withstand several attempts to centralize the healthcare sector in the past [46]. In line with equal treatment of all occupational groups, the government finally merged all sickness funds into one national health insurance scheme in 2009 [47]. Further direct state intervention is in progress. Therefore, Luxembourg seems to be the next candidate to shift its healthcare system type into the direction of an *Etatist* SHI.

Hence, the Bismarckian model, which spread to most continental European countries up until the early 1960s, gradually recedes back to its origin. While some of the former SHI countries had the state capacity to socialize their health system into an NHS system in order to safeguard universal access (e.g. Denmark), more veto-ridden SHI countries picked the path of incremental inclusion in order to cover their entire population during the period of welfare state expansion. In particular, strong federalism proved to be a stronghold for corporatist actors

against direct state involvement. When the tide turned towards retrenchment, policymakers lost confidence in the ability of societal actors to contain costs and organize service provision efficiently. Several SHI countries either extended the ‘shadow of hierarchy’ over corporatist arrangements, or – as in the case of the Netherlands – even abolished them by increasing direct state regulation and market deregulation [10].

#### 6.4. *The Private Health System type*

The core features of a Private Health System are coordination by market actors, private financing sources, and for-profit providers. This healthcare system type is generally considered the most common one up until the early 20th century, but since Switzerland switched over to the corporatist SHI model in 1996, the private system has only prevailed in one, vast OECD country: the United States. There are numerous studies dealing with the question why universal coverage could not be achieved in the US, emphasizing the veto-ridden political system, a state-sceptic public opinion, a weak labour movement, or powerful opposition by physicians and the private insurance industry [23,48,49]. Although these factors might have contributed to the fact that the US still has the most private health system of all OECD countries, they did not prevent a shift towards a higher collectivization of risks.

Due to public programmes such as Medicare, Medicaid, and the State Children’s Health Insurance Program (SCHIP), the public sources already play a major role in healthcare funding, contributing to around 46% of overall health funding. Taking tax exemptions into account, the private share even falls below the 50 per cent level [50]. Regarding the organization of the health system, the dominance of private actors is also not uncontested. Unsurprisingly, the state has key regulatory competencies in public programmes covering around a quarter of the population. Furthermore, the state as well as societal actors have gained importance in the private health system [5].

The main explanation for this hybridization is the system-specific deficiency of a PHI system to provide affordable access to healthcare for the elderly, chronically ill, and the poor. The state therefore had to amend the privately covered core provision with several public programmes in order to include significant parts of the population in the health system. Further legislation is in progress to address groups such as the working poor who are still un- or underinsured [51]. In July 2012, the Supreme Court approved mandatory insurance, thus upholding the core features of the extensive reform package introduced by the Obama administration. However, mandatory insurance will not come into effect until 2014. Hence, although the principle of private healthcare provision is still dominant in the US health system, it tends to move towards more public funding and stronger state regulation.

#### 6.5. *The Etatist Social Health Insurance type*

*Etatist* Social Health Insurance is the only completely mixed healthcare type that does exist in reality. It is

characterized by a clear hierarchy of the three dimensions: the state is responsible for regulating the system, financing is organized by societal actors, and provision has been delegated to private hands. Eleven countries from our sample show these characteristics and thus render the *Etatist SHI* the most frequent type. Among the different countries that belong to this type, three clusters can be identified: first, Central and Eastern European (CEE) countries form a group including the Czech Republic, Estonia, Hungary, Poland, and Slovakia; the second group comprises the Asian countries Japan and Korea. Contrary to Lee et al. [30], we have grouped Korea under *Etatist SHI* because the RW typology distinguishes not between multi-payer and single-payer systems, but between contribution and tax financing (for a critique of Lee et al. see [52]). The third group identified as *Etatist SHI* types includes countries such as Belgium, France, Israel, and the Netherlands that in the past have frequently been categorized under *SHI* systems.

The health systems of the *Central and Eastern European countries* are related by their common history. During Soviet times all countries shared an integrated, tax-based state model of a Semashko system. With the breakdown of the Soviet regime, however, the legitimacy of the state health system was lost in transformation and all countries decided to abandon the old system and introduce a social insurance scheme. Besides ideological reasons for weakening state power, financial problems, the hope to generate greater efficiency and prior experience with *SHI*, were decisive for establishing an *SHI* system. Although insurance contributions make up the greatest share of health expenditure at over 60% in all countries, private out-of-pocket payments constitute an important source of funding. The implementation of *SHI* was accompanied by a decentralization of ownership and responsibility and a privatization of provision in primary care, dental care, and pharmaceutical services. Hospital care, by contrast, remained almost completely in public ownership, although the role of hospital treatment has steadily diminished over the past two decades. State actors, however, maintained their dominant role in regulation, because in contrast to traditional social health insurance countries like Germany or Austria, the CEE lack adequate societal actors to whom regulatory powers could be devolved. The newly established health insurance funds have been given some regulatory functions, but the determination of contributions as well as the benefit packages rests with the state in all countries, and the health ministries play an important role in the governance of these funds.

What mainly differentiates the two *Asian countries* Japan and Korea from CEEs is the multiplicity of existing actors. Both countries have organized financing through a variety of different health insurance funds, with employer funds playing an important role. In 2003, however, Korea merged all different funds into one single insurer in order to overcome the problem of risk-pooling and increase the bargaining power of the social health insurance [for a detailed description see 52], and in this respect it has become more similar to CEEs. The two Asian countries differ with respect to the share of total health expenditure that comes from social insurance contributions: while in Japan this figure amounts to over 70% it barely reaches 45% in Korea. Instead,

a much greater share of money is spent out-of-pocket in Korea (27.2%) than in Japan (15.8%). Health provision in Japan and Korea is also characterized by a plurality of societal, state, and private actors. Private for-profit hospitals are not allowed in either country, but private non-profit actors loom large. The diversity of actors is controlled through a strong central regulation practically without the involvement of other actors.

The last group contains countries that frequently used to be categorized as social health insurance types [42,53]. However, this categorization also met with criticism. The characterization of the French health system as *SHI* for example has long been challenged by Steffen, who argues that in particular the minor role of societal actors in regulation distinguishes it from traditional *SHI* countries like Germany [54,55]. Because we look at regulation as a separate category, we can account for this feature of state dominance in regulation. Compared to France, societal actors play a greater role in the Belgian health system, yet, mainly in the ambulatory sector. The regulation of the inpatient sector is primarily state-controlled and the two essential decisions over contribution rates and the content of the health benefit basket are also taken by the state. These features are also shared by Israel. The Netherlands are a borderline case with only a marginal dominance of state regulation over societal regulation. The fundamental health reform of recent years has introduced major competitive elements among health insurances and at the same time strengthened state regulation, which is why the Dutch system now belongs to the group of *Etatist Social Health Insurance Systems* [6,56].

#### 6.6. The special case of Slovenia

Slovenia is the only country in our sample that conflicts with our logic of the hierarchy of actors and functions. Under the Slovenian health system, societal actors are in charge of regulation and financing, but service provision lies predominantly in the hands of state actors. Earlier in this paper, we have argued that such a constellation is incoherent because it makes no sense for the state – given its power as meta-regulator – to expose itself to the control of other actors. Yet, this situation occurs in Slovenia: regulatory competences over state providers have been given to the Health Insurance Institute of Slovenia (HIIS) which, as sole purchaser, contracts with individual state providers.

We attribute the inconsistency of the Slovenian case with our theoretical hierarchy of dimensions and actors to its singular transformation process. First, public provision of primary and hospital care had already been introduced in the interwar period and was therefore not exclusively associated with the communist state [57]. Consequently, the legitimacy of public service provision is much higher than in other former communist states. Second, unlike the other CEE countries, Slovenia chose a corporatist style of transformation after its independence in 1991 [58]. The centre-left coalitions that dominated Slovenian politics until the mid-2000s liberalized markets and privatized public assets cautiously [59]. In order to overcome shortages in outpatient care, the government only supplemented public outpatient care with private

practice which was strongly favoured by the medical profession.

As a result we observe a relatively slow privatization process. In 1994 only seven per cent of outpatient physicians and 14 per cent of dentists worked as free entrepreneurs [60]. Twelve years later, however, already 55 per cent of all dentists were self-employed, and the share of private outpatient physicians had increased to 25 per cent [58]. Most recent figures from the Slovenian Statistical Office for 2010 indicate a continuation of this trend, with 37 per cent of outpatient physicians and 61 per cent of dentists in private practices [61]. Most of them have contracts with the HHS but the number of specialists and dentists who exclusively treat out-of-pocket patients is rising. Moreover, one third of all pharmacies now operate as private businesses. Although the government is still hesitant to privatize hospitals, public provision is already in decline. Evidence strongly suggests, therefore, that the special case of Slovenia gradually evolves into a well-known type: the Social Health Insurance system.

## 7. Conclusion

In this paper we refined the typology of health care systems developed by Rothgang and Wendt, the first strictly deductive approach to health care system classification, by proposing a hierarchy of actors and functions. This allowed us to reduce the number of types from 27 theoretically possible to 10 plausible ones. The empirical application of the RW typology on a dataset of 30 OECD countries confirmed our functional model: with the notable exception of Slovenia, which has been accounted for, all countries fall within one of the plausible healthcare system types. Interestingly, only half of the ten types we rendered plausible can be found empirically. The fact that so many cells in Fig. 3 remain empty can be regarded as the first remarkable result of this exercise. A second striking result is the prominence of type #23, the “Etatist Social Health Insurance”, which encompasses no less than eleven countries. This type accommodates many countries that only poorly fitted into the three “classical” system types, namely the NHS, SHI, and PHI systems. For example, it covers all CEE-countries of our sample as well as the two Asian countries. Moreover, it includes former SHI countries such as the Netherlands and Belgium, after these strengthened the role of the state in regulation.

It is the capacity of our framework to trace the transformations of systems from one type to another and to make theoretically informed conjectures about future developments that distinguishes it from all former approaches. Because the framework acknowledges shifts in single dimensions of the health system, it allows us to detect when quantitative shifts turn into a qualitative shift. A striking example of transformation has been the switch of former SHI systems to Etatist SHI systems. It has been argued that SHI systems have increasingly been squeezed between growing competition and state intervention [4,62], amplifying the regulatory role of the state and ultimately causing a transformation to a new type. The interesting question arising from this is whether the four countries still regarded as SHI systems will also shift

towards the etatist type in the future. Another example is the Private Health System. This type recently “lost” Switzerland to the SHI category, and the US also seem to be turning away from the PHI type as state involvement in the regulatory dimension is intensified. This might be explained by the fact that purely private systems are hardly able to satisfy a public interest in effective, affordable, and accessible healthcare for the whole population. By contrast, other types such as the NHI or NHS systems seem to be remarkably stable over time.

Having stressed the advantages of our deductive classification we also need to allude to its limitations. First, the assumed hierarchy of dimensions and actors is a simple functional model that on its own cannot explain the existence of a particular healthcare system type in a given country. In order to gain full explanatory power, it must therefore be supplemented with institutional theories. Second, the less differentiated conceptualization of regulation only allows for the archetypical combinations of modes of interaction and corresponding actors (see Section 2.2). Third, the concentration of ownership in the service provision dimension fails to account for formal or functional privatization. Nevertheless, our typology has much more analytical potential than existing, inductively derived classification schemes, as it is rooted in theoretical considerations of functions all healthcare systems must fulfil.

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