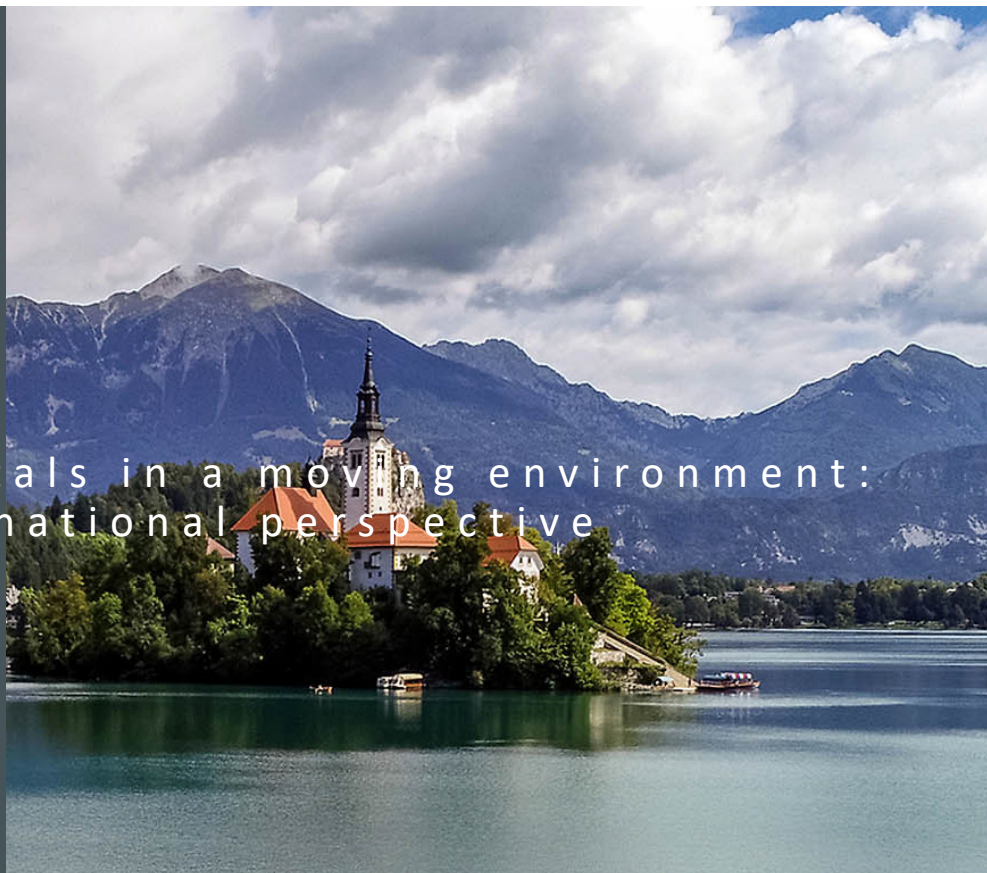


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Funding Hospitals in a moving environment:
international perspective

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Program

- **What is the Casemix situation to day ?**
 - **A success story for inpatient acute care**
 - **Diversity of Case mix information systems**
 - **Diversity of funding hospitals uses**
 - **Technical and allocative efficiencies**
- **Integrated care**
 - **Definitions**
 - **Funding models**
- **Conclusion**

Casemix information systems

- Casemix Information systems are based on a **minimum dataset** for each discharge or contact with the healthcare system on:
 - Specific clinical characteristics ,
 - **Diagnosis** principal and secondary,
 - **Medical and Surgical Procedures**
 - Functional health status
 - Activity of daily Leaving
 - resource utilization,
 - Accounting centers
 - **Individual consumption by patient**
 - other relevant factors
- The target is the classification and grouping of patients or episodes of care
- To provide a **standardized way to measure and compare** the complexity and resource needs of different patient populations



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DRGs Grouping Following FETTER

The groups were defined as clinically coherent

Coherent means that they suggest a set of clinical practices needing the same level of resource consumption (lab tests, imaging, surgical procedures, nursing care, psychological support et.)

2 methods

- data bases statistical analysis
- clinical knowledge

No clinical guidelines or clinical specificity (Clinical pathway, pmc et.)



Case Mix Definition Following HORN BROOK

A classifying system which restricts the infinite variety of patients in groups of patients similar in regard with some characteristic (or dependent variable or explained variable)

This dependent variable can go from clinical description to resource allocation and outcome (quality)

The classifying variables of the system (or independent variables or explaining variables) are specific to the explained or dependent variable

For Resource Allocation (Cost and Cost Drivers)



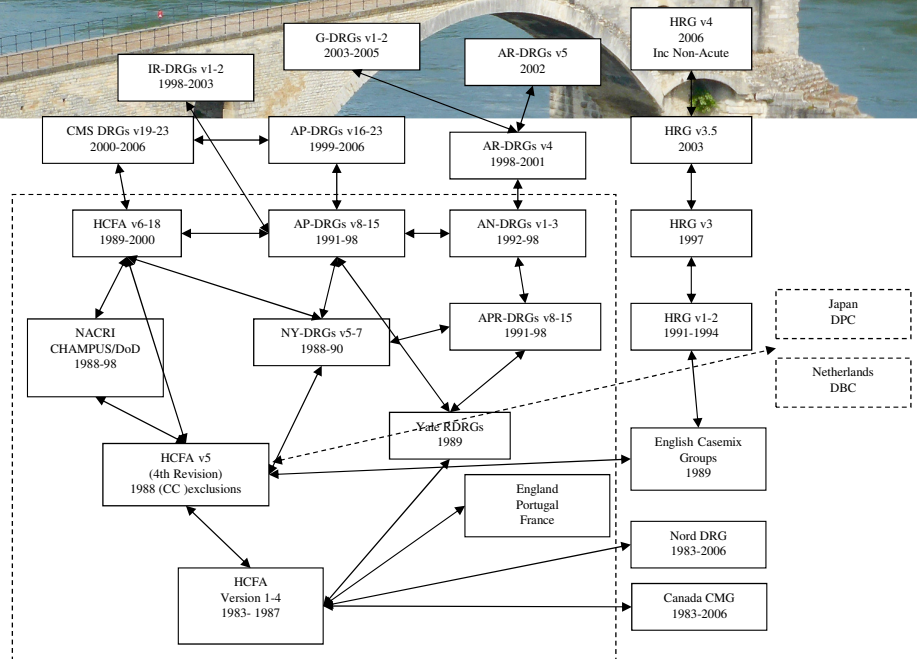
The casemix systems follow the Procedures: a Babel Tower

- ICD 9CM and ICD10 CM:PCS : HCFA DRG, APDRG, APRDRG, IRDRG, UNU casemix, Thai DRG. **(10 countries)**
- ICD 10AM/ACHI : AN DRG, ARDRG **(14 countries)**
- NCSP :NordDRG (Denmark, Estonia, Finland, Iceland, Latvia, Norway, Sweden) WHO **(7 countries)**
- National Procedures: LKF (Austria) G DRG (Germany) GHM (France), HRG (UK), KDRG (Korea), DPC (Japan) DBC (Netherlands) HBCs (Hungary), UNU University ((Malaysia), BahasaDRG (Indonesia) China et. **(11 countries)**

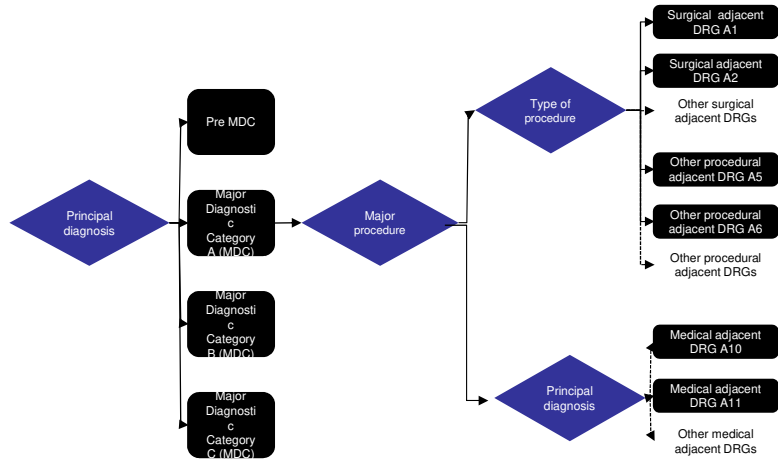


International evolution of DRGs groupers

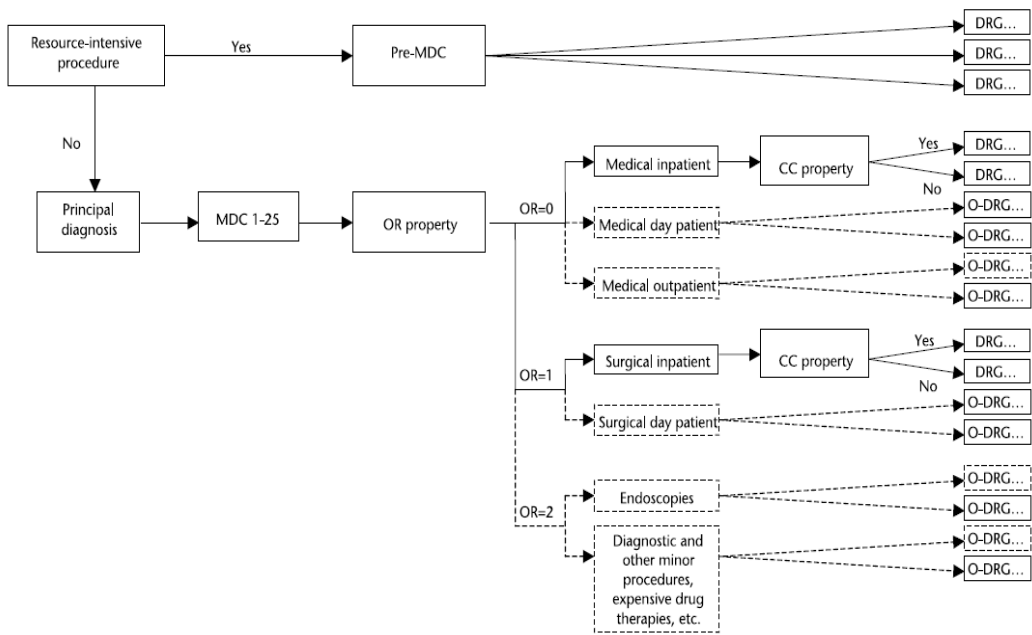
Adapted from Fetter R (1999) Casemix Classification Systems, *Australian Health Review* vol 22 no 2



DRG groupers (Australia)



NordDRG (general)



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Diversity of Hospital Funding based on Casemix/DRG

- 1 Transparency of the product of care: Yale University
- 2 P.P.S U.S.A Medicare CMS Medicare part A
- 3 Casemix Based Budget /ABF

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Technical Efficiency Measure(France)

France Technical Efficiency

year	Total hospitals spending in Billions Euros 2023 (nominal euros)	Mean LOS(days)	Hospital Spending Per capita in Euros 2023 (population million)	Hospital Spending Per capita in Euros 2023 PPP (GDP thousand billions)
1996	62.2 (43.3)	7.1	1054 (59)	1718 (1.3thousand Billions)
2003	71.2 (51.2)	6.8	1165 (61.1)	1782 (1.6 thousand Billions)
2023	100.7	5.1	1472 (68.4)	1472 (2.8thousand Billions)

Definition

The Technical Efficiency ratio

1 Output the variation 1996-2023 for LOS in hospitals acute care inpatient

2 Input the variation 1996-2023 of Total hospital spending per capita in Euros 2023 adjusted for PPP

Source

Drees: www.data.drees.sante.gouv.fr >etudes et résultats

INSEE: <http://www.insee.fr>>information Convertisseur Franc/Euro

Allocative Efficiency Measure(France)

France Allocative Efficiency

year	Total healthcare spending per capita	Life expectancy	
	US \$ PPP (OECD)	Women	Men
1996	1800	82.3	75.5
2003	2200	83	77
2018	4700	84.3	79.5
2023		85.5	80

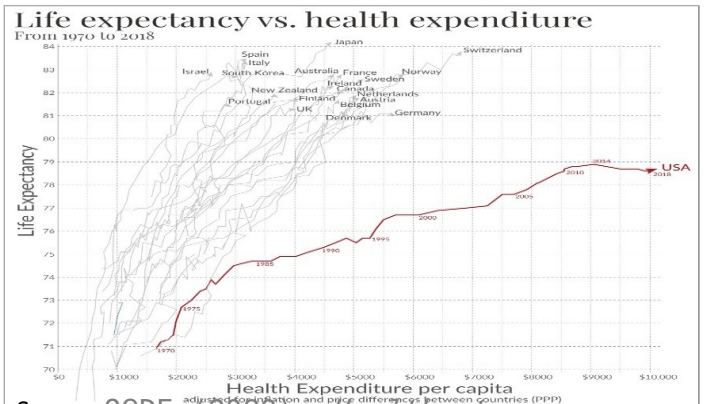
1 Output variation of Life expectancy

Glance 2023 : OECD

2 Input Variation Total Healthcare Spending per capita
Paris

<https://doi.org/10.1787/7a7afb35-en>

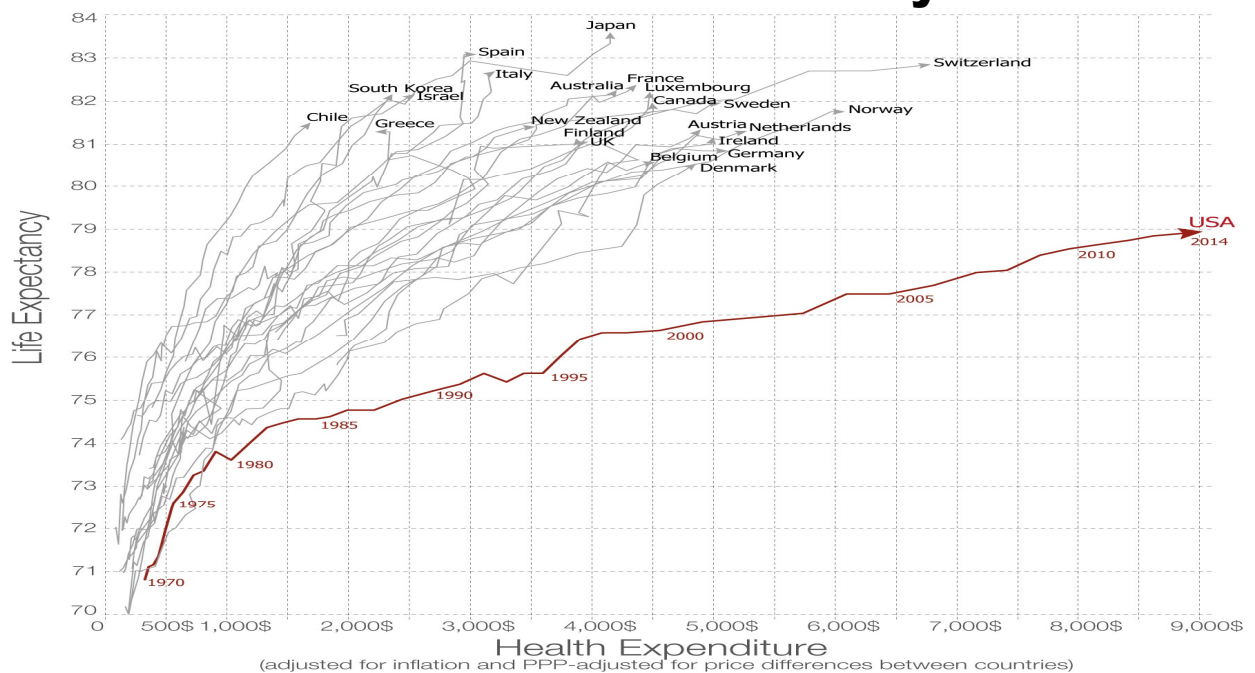
Allocative Efficiency International comparison



Source OCDE (2023), *Health at a*

Indicators, Éditions OCDE, Paris

Life expectancy vs Health Expenditure adjusted for Inflation and PPP: Allocative Efficiency



DRG/GHM efficiencies FRANCE 1996-2023

• Technical Efficiency

The technical efficiency increase for hospitals is very important: 2023 LOS is 0,72 % of the 1996 LOS. The Hospital Spending per capita adjusted for inflation (Euros 2023) and for PPP has decreased from

1718 Euros in 1996 to

1472 in 2023.

• Allocative Efficiency

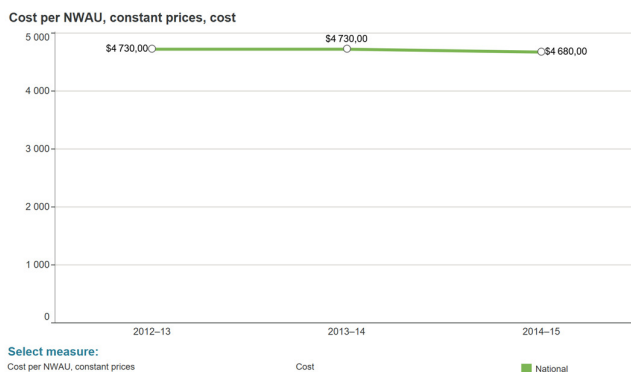
The Allocative efficiency shows a real increase of life expectancy (3,8% for women and 5,9% for men) which started before in 1946. The increase is less than Japan and better than UK, equal to Australia, Norway, Sweden, Ireland, Canada, much better than USA.

Total healthcare spending per capita PPP: France is much less expensive than USA Less expensive than Switzerland, Norway, Germany, Austria, Sweden and Belgium equal to Australia, Ireland, Canada and Japan, more expensive than UK.



Cost by National Weighted Separation Australia 2012 2015

Public Hospitals adjusted for monetary inflation not by PPP neither percapita



Source: AIHW 2018 Hospital Performance: Costs of acute admitted patients in public hospitals from 2012-13 to 2014-15

[Footnotes]

AIHW Australian Institute for Health and Welfare

- Over the last ten years to 2021-22:
- **OUTPUT**
- the number of hospitalisations increased from 9.4 million to 11.6 million (+ 1.23)
- the number of patient days increased from 27.7 million patient days to 31.8 million patient days(+1.14)
- the average length of stay decreased from 3.0 days to 2.7 days

And **INPUT** between 2010 and 2022

Real gross domestic product : from 1.149 to 1693 Billions USD 2022(+1,47)

Population from 22 to 26 millions (+1,18)

MORE than the output

TECHNICAL EFFICIENCY HAS INCREASED?

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- From Casemix technical efficiency to health for all policies allocative efficiency
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Definitions Looking for a consensus

Multiple Terminology

- Integrated care, or
- Integrated health, or
- Coordinated care, or
- Comprehensive care, or
- Seamless care, or
- Interprofessional care or
- Transmural care, or
- Collaborative care et. et.

or Health In All Policies HiAP WHO Europe 2024

4 main characteristics

- 1 Worldwide trend in health care reforms
- 2 to support and incentivize the delivery of coordinated and integrated healthcare services **across various settings** and providers by the alignment of resources
- 3 This model of care is working towards moving away from a **siloed** and referral-based format of care to a team-based model.
- 4 ACO (Accountable Care Organizations) networks or organizations that assume for a defined population.
 - agreements with **payers**, such as government agencies or insurance companies, and
 - accountable for **achieving** specific quality and **cost targets**.

Integrated Care Funding Models

- **Capitation 1**
 - a payment arrangement for health care service providers.
 - Primary Capitation
 - pays a set amount for each enrolled person assigned to them, per period of time, whether or not that person seeks care.
 - based on the average expected health care utilization of that patient, with payment varying by age and health status.
- **Capitation 2**
 - fund integrated care organizations or networks or ACO that are responsible for managing and coordinating the healthcare needs of a defined population.
 - Formula based age and sex, weighted for morbidity by standardized mortality ratio.
 - **Medicare part C**
 - Kayser Permanente
 - Others
- **Population based Case mix**
 - ACG when applied in the **3 types of care** (Primary, Secondary, Tertiary)
 - Other
- Applying Funding models



Medicare Part C

- Medicare health plan option.
 - called “Part C” or “MA (Medicare Advantage) Plans,” are
 - offered by private companies
 - approved by Medicare.
- Provides all of your Part A (Hospital Insurance) and Part B (Medical Insurance) coverage.
- May offer extra coverage, such as vision, hearing, dental, prescription drug coverage (Part D) and/or health and wellness programs.
- Medicare pays a fixed amount for your care every month to the companies offering Medicare Advantage Plans.
- These companies must follow rules set by Medicare.
- Each Medicare Advantage Plan can charge different out-of-pocket costs and have different rules for how you get services .





Population based case-mix

- Adjusted Clinical Groups (ACGs): University John Hopkins (ex Ambulatory) (ICD9CM and ICD10)
- Clinical Risk Grouping(CRG) 3M
 - 1434 CRGs,
 - Functional Status
- CMS HCC Hierarchical Condition Categories, 266 DxGroups(ICD10CM)

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Applying Funding models

1. Bundled Payments: Bundled payments

-fixed amount for a defined episode of care including multiple services and providers.

-Providers share the financial risk

Only for a defined episode of care

2 Pay for Performance (P4P): Pay for Performance models

-Financial incentives to the achievement of predefined quality and performance measures.

- specific targets :patient outcomes, reduced hospital readmissions, or adherence to care guidelines.

Partial and Additional Payment ?



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Conclusion: From Casemix to Integrated Care

- Casemix based Funding for inpatient (PPS or ABF) is **technically efficient** . **The allocative efficiency is still in debate**
- It is necessary to develop and implement casemix tools type **outside inpatient care** but this is not sufficient.
- The Healthcare System funding in most countries does not guarantee an **efficient and equitable continuum of care** .
- To reach allocative efficiency an integrated funding model is needed.
- This is the **main Health Reform challenge** for the coming years





END rodriguesjeanmarie2@gmail.com

- THANK YOU
- **Vielen Dank für Ihre Aufmerksamkeit**
- **Merci**
- **Gracie**
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- **Terima Kasih**
- **Shkran**

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