

Coping with Corona: The role of hospital care structures and capacity expansion in five countries

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Overview

1. Introduction
2. Pre-pandemic situation
3. Response to the pandemic
4. Summary of Findings

Introduction

Introduction

Country experts

Denmark

- › Prof. Karsten Vrangbæk, University of Copenhagen

Germany

- › Prof. Tanja Klenk (Helmut Schmidt University Hamburg)
- › Dr. Uwe Preusker (Health System Analysis / Health Policy Research, Vantaa)

Israel

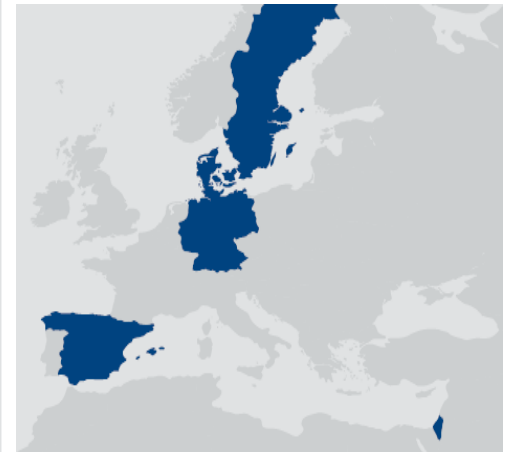
- › Ruth Waitzberg (Ben-Gurion University of the Negev / Myers-JDC-Brookdale Institute)
- › Oren Miron (Harvard Medical School)
- › Nadav Davidovich (Ben-Gurion University of the Negev)

Sweden

- › Dr. Uwe Preusker (Health System Analysis / Health Policy Research, Vantaa)

Spain

- › Prof. Kristin Edquist (Eastern Washington University)
- › Mario Martínez-Jiménez (Lancaster University)



Introduction



Bertelsmann Stiftung (Hrsg.)
Mirella Cacace

Krankenhausstrukturen und Steuerung der Kapazitäten in der Corona-Pandemie

Ein Ländervergleich

1. Auflage 2021, 108 Seiten (PDF)

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Introduction

- First wave of the COVID-19 pandemic (late) January / February 2020 to June / July 2020
- Management of hospital capacities as major challenge, in particular intensive care
- Study investigates the capacity expansion in Denmark, Germany, Israel, Spain, and Sweden

Case selection

- *Germany*: social health insurance; mix of self-regulation, state regulation and competition; ownership-mix hospitals (public, private non-profit or for-profit)
- *Israel*: social health insurance, four sickness funds (health plans) responsible for provision / payment of services; ca. 50% of hospital beds state-owned, ca. 30% owned by the largest health plan
- *Sweden*: state-led health care system, majority of resources publicly owned; hospitals owned by the provincial parliaments or regions
- *Denmark*: state-led health care system, integrated system of hospitals, centralization and concentration over the past decades
- *Spain*: state-led health care system, decentralized; ca. 40% of all hospitals and 20% of all hospital beds are private

Introduction

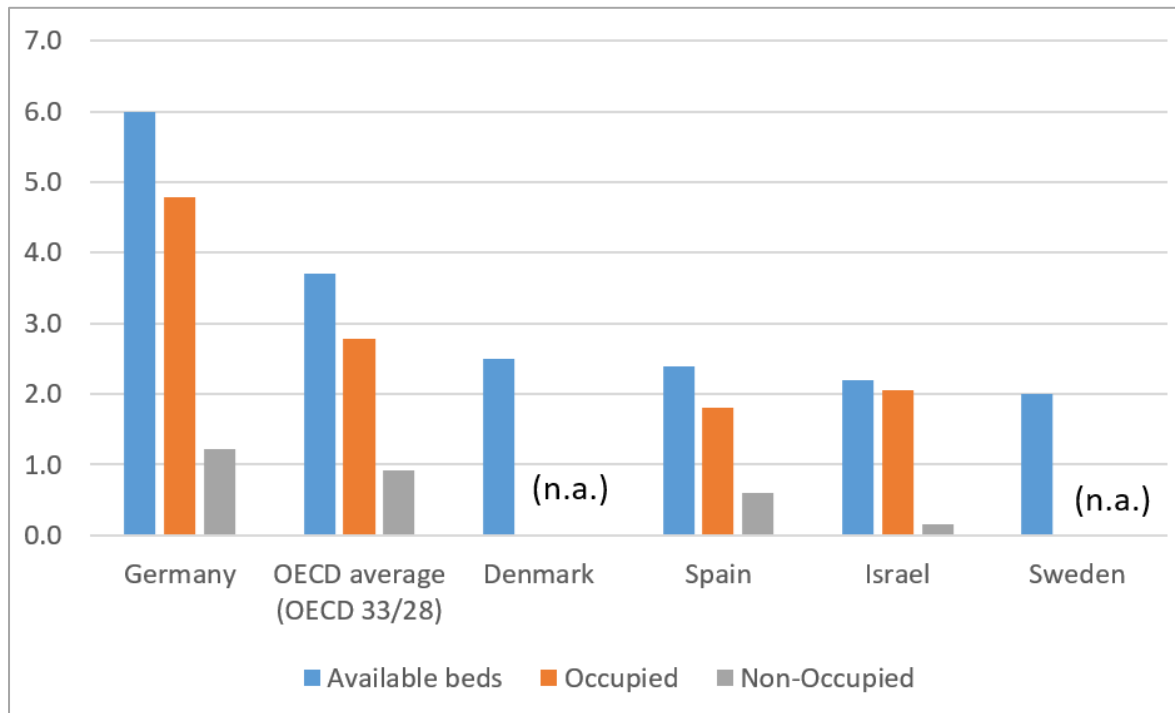
Key characteristics of resilient health systems

- 1) flexibility and adaptability in the use of existing resources, as well as planning for responding to surge in demand;
- 2) the ability to create surge capacity in the three fronts: staff, supplies, and space; and
- 3) the ability to avoid excess idle capacity (OECD 2020)

Pre-pandemic Situation

Hospitals

Figure 1: Hospital acute care beds per 1,000 population in five countries (2017 or nearest)



Source: OECD Health Statistics (2021)

Hospitals

Table 1: Nurse-to-bed ratio in five countries (2018 or nearest year)

<u>Nurse-to-bed ratio</u>	<u>Head counts</u>	FTE
<u>Denmark</u>	3.0	2.6
Spain	1.2	<u>n.a.</u>
Israel	1.1	1.0
Germany	0.8	0.6

Source: OECD 2021

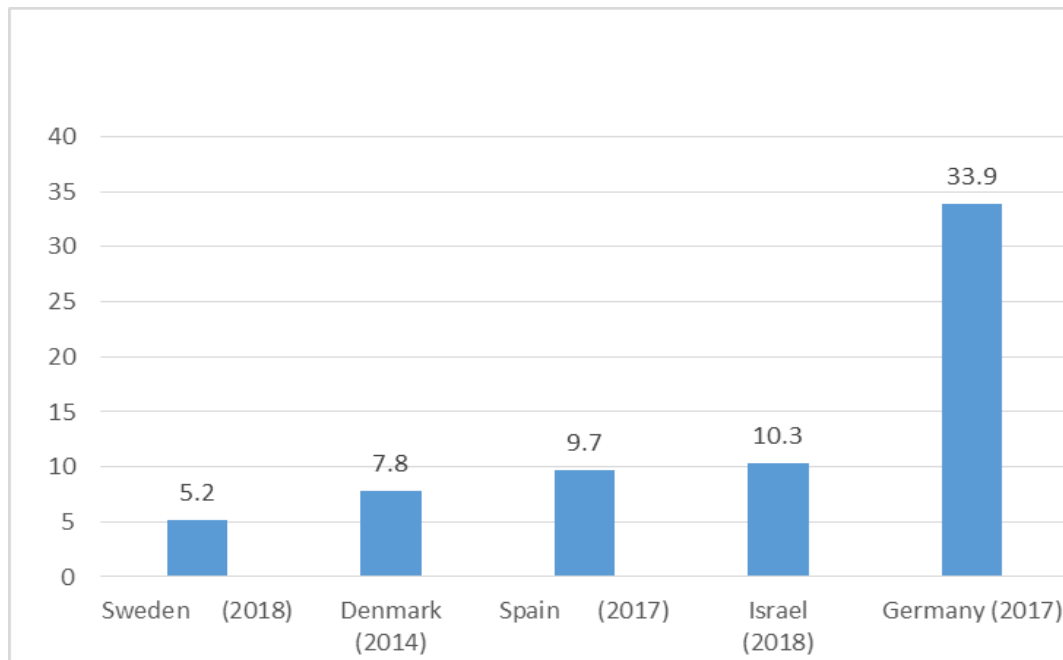
- Lack of health personnel, mentioned in particular in the *Israeli* and *Swedish* case study (though most probably applying to all countries)
- Although absolute numbers are high, nurse-to-bed ratio is poor in Germany due to the high number of hospital beds

Specialization and Concentration

- **Assumption:** hospitals structures where the provision of highly specialized, complex care is geographically concentrated, are better able to providing adequate care to Covid-19 patients
- However, lack of comparative data / comparative concepts for describing and measuring specialization and centralization
- *Denmark and Sweden:* most centralized and specialized hospital systems
- *Israel:* lungs wards not broadly available, underserved areas located in the north and particularly in the south
- *Germany:* many small hospitals, dispersed; few hospitals specialized on pulmonary diseases (128 out of 1.915)
- *Spain:* most hospitals are small, specialist care is widely and rather evenly distributed among hospitals

Intensive Care

Figure 2: Intensive care beds per 100,000 population in five countries (before the pandemic)



Source: own calculations based on OECD 2021: 11, Hillgren 2019: 23 ff., Ministry of Health Israel 2020a; MSCBS 2017

Data availability intensive care

- Only in *Sweden* up-to-date numbers of intensive care capacities were available at the time of the outbreak of the pandemic, register since 2001, changed to a daily update
- In all other countries, data on intensive care beds were outdated: Denmark (2014), Spain and Germany (2017), Israel (2018)
- Even after the outbreak of the pandemic, data reporting proceeded at different pace, updates were completed by:
 - *Denmark*: March 2020
 - *Spain*: 29 March 2020
 - *Germany*: around mid-April 2020
 - *Israel*: July 2020
- *Nota bene*: Data on trained nursing staff in intensive care is not available in any of the countries

Responses to the pandemic

Governance

- General crisis preparedness plans in all countries, but Covid-19 poses a new challenge
- Central plans quickly developed in *Israel, Denmark, and Sweden*, but not in *Germany and Spain*
- *Israel*: direct line of communication between the Ministry of Health (MoH) and hospitals; centralized procurement
- *Spain*: Lack of central planning, lack of coordination both among regions and between regions and national government; procurement poorly coordinated; initiatives by the central government came too late, not coordinated with the AC

Capacity expansion: Hospitals

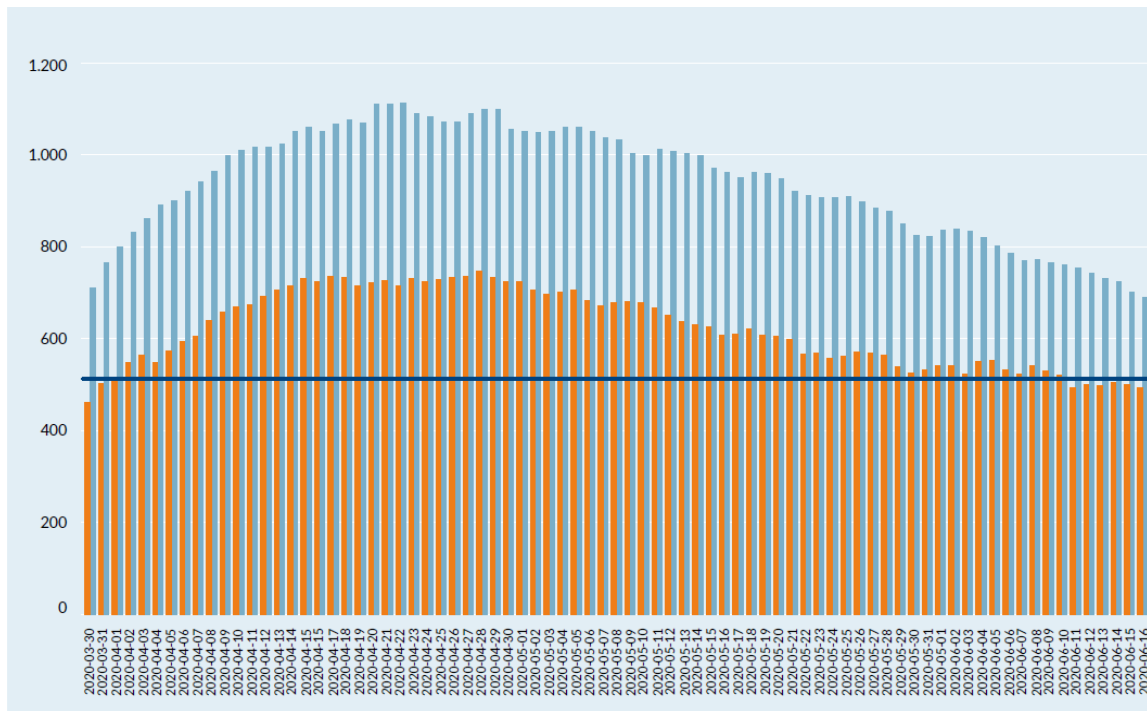
- In *all countries*, with the notable exception of *Spain*, hospitals received the central guidance to postpone non-elective surgeries
- *Germany*: all hospitals, even small clinics and psychiatric care hospitals, were compensated with a lump-sum for each unoccupied bed in the first wave of the pandemic
 - favored small and medium-sized hospitals and disadvantaged large – and more experienced – hospitals
 - an additional hospital was built but not used during the first wave
 - for recruitment purposes, personnel was redirected from regular to intensive care
- *Spain*: tense situation required the construction of numerous field hospitals, in particular in the Autonomous Community (AC) Madrid

Capacity expansion: Hospitals

- *Israel, Sweden, Denmark*: rapid increase in beds, beds were flexibly opened or closed according to need
 - *Denmark*: some regions created specialized departments/clinics for covid-19 patients, which quickly have been integrated back into the regular structure as the number of Covid-19 patients decreased
- ⇒ high flexibility to increase and to decrease capacities, quick reduction of the backlog of elective surgeries

Capacity expansion: ICU

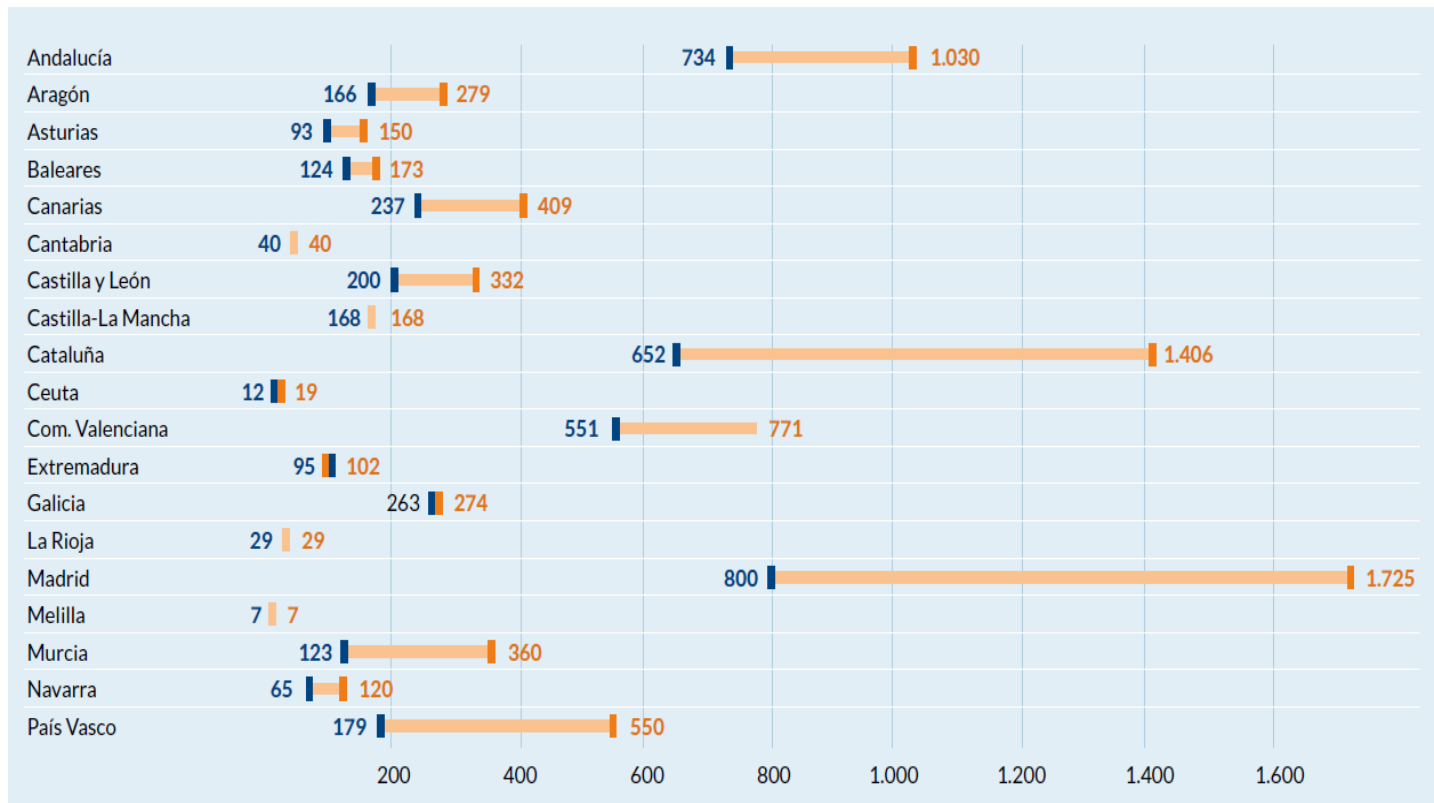
Figure 3: Total capacity and occupancy in intensive care in Sweden (March to June 2020)



Source: SKL 2020b: 24; Svenska Intensivvårdsregistret (SIR); own calculations
red: Patients in intensive care; blue: total intensive care capacity; blue line: average intensive care capacity in 2019 = 512 beds

Capacity expansion: ICU

Figure 4: Changes in the number of intensive care beds 2017 - 2020, Spain



Source: Ojeda 2020

Patient pathways

- Success of a country in coping with corona also depends on the ability to channel mild cases to the ambulatory sector and to reduce physician/patient-contacts
- *Sweden and Denmark*: rapid navigation of COVID-19 cases through the healthcare system from the outset
- *Denmark*: patients experiencing symptoms were not allowed to visit the primary care providers or hospitals directly
- *Germany*: digital “laggard”; modification of the benefit basket of the sickness funds were necessary to include teleconsultations
- *Sweden* offered a Covid-19 self-test for to the population already in May 2020, for which the test material could be ordered via the Internet or by telephone to the patient's home

Summary of findings

Summary of findings

- High level of acute care beds (*Germany*), provides a “buffer”, but is no guarantee of an adequate crisis response; occupancy rate is decisive
- Staffing, and in particular the availability of (highly) qualified nurses, is the crucial “bottleneck” in *all countries*
- Main deficiency in *all countries*: data on nursing staff in intensive care not available
- *Sweden* and *Denmark*: structural advantages due to concepts of specialization and centralization in integrated hospital systems => rapid navigation of Covid-19 cases through the healthcare system from the outset
- Maintaining intensive care capacity is costly, a functional equivalent is the rapid adjustment (expansion and contraction), as observed in *Sweden*, *Denmark* and *Israel*
- Indispensable to this flexibility is the availability of data on existing and built-up capacity

Summary of findings

- Centralized decisions about resources lead to a better performance (*Israel, Denmark, Sweden*)
- In *Spain*, the autonomy of regional and even local governments and providers helped expanding capacities in those areas where they were most urgently needed. If governance is decentralized, robust mechanisms for coordinating and aligning efforts across governance levels seem important
- Shifting light cases to the outpatient system and keeping physician-patient contacts low is a crucial success factor
- Degree of digitalization of the healthcare system is also crucial to strengthening the resilience of healthcare systems in crisis situations

Thank you, I am looking forward
to your questions!