Comparing European data sources:
Cases & deaths;
Hospitalisations & ICU

European data sources: cases and deaths

- 6 sources compared for Covid-19 cases and deaths

| Provider	Referenced as	Data available at	Data sources from
European Commission Joint Research Centre	JRC	https://github.com/ec-jrc/COVID-19	https://covid-statistics.jrc.ec.europa.eu/QlikDashboard?sheet=multidim
World Health Organisation	WHO	https://covid19.who.int/info/	https://worldhealthorg.shinyapps.io/euro-covid19/
Johns Hopkins University	JHU	https://github.com/CSSEGISandData/COVID-19	https://github.com/CSSEGISandData/COVID-19#covid-19-data-repository-by-the-center-for-systems-science-and-engineering-csse-at-johns-hopkins-university
European Centre for Disease Control	ECDC – public	https://www.ecdc.europa.eu/en/publications-data/data-daily-new-cases-covid-19-eueea-country	https://www.ecdc.europa.eu/en/publications-data/sources-eueea-regional-data-covid-19 https://www.ecdc.europa.eu/en/covid-19/data-collection
ECDC – data shared privately	ECDC – private	N/A	Unknown
Our World in Data	OWID	https://github.com/owid/covid-19-data/tree/master/public/data/	https://ourworldindata.org/coronavirus-source-data

European data sources: healthcare
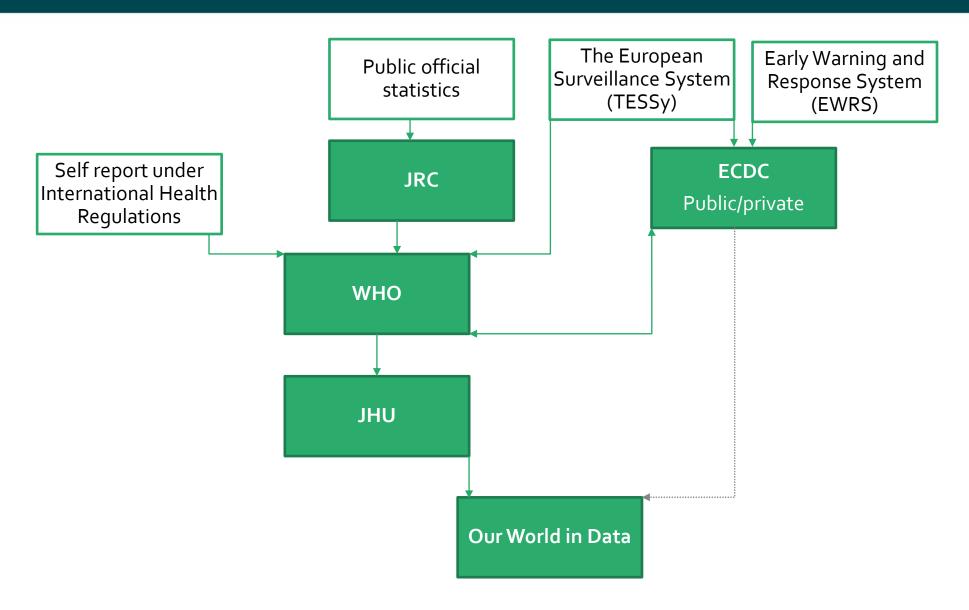
- 4 sources compared for Covid-19 hospitalisations and ICU

Provider	Referenced as	Data available at	Data sources from
European Commission Joint Research Centre	JRC	https://github.com/ec-jrc/COVID-19	https://covid-statistics.jrc.ec.europa.eu/QlikDashboard?sheet=multidim
European Centre for Disease Control	ECDC – public	https://www.ecdc.europa.eu/en/publications-data/download-data-hospital-and-icu-admission-rates-and-current-occupancy-covid-19	https://www.ecdc.europa.eu/sites/default/files/documents/2021-01-13_Variable_Dictionary_and_Disclaimer_hosp_icu_all_data.pdf
ECDC – data shared privately	ECDC – private	N/A	Unknown
Our World in Data	OWID	https://github.com/owid/covid-19-data/tree/master/public/data/	https://ourworldindata.org/coronavirus-source-data

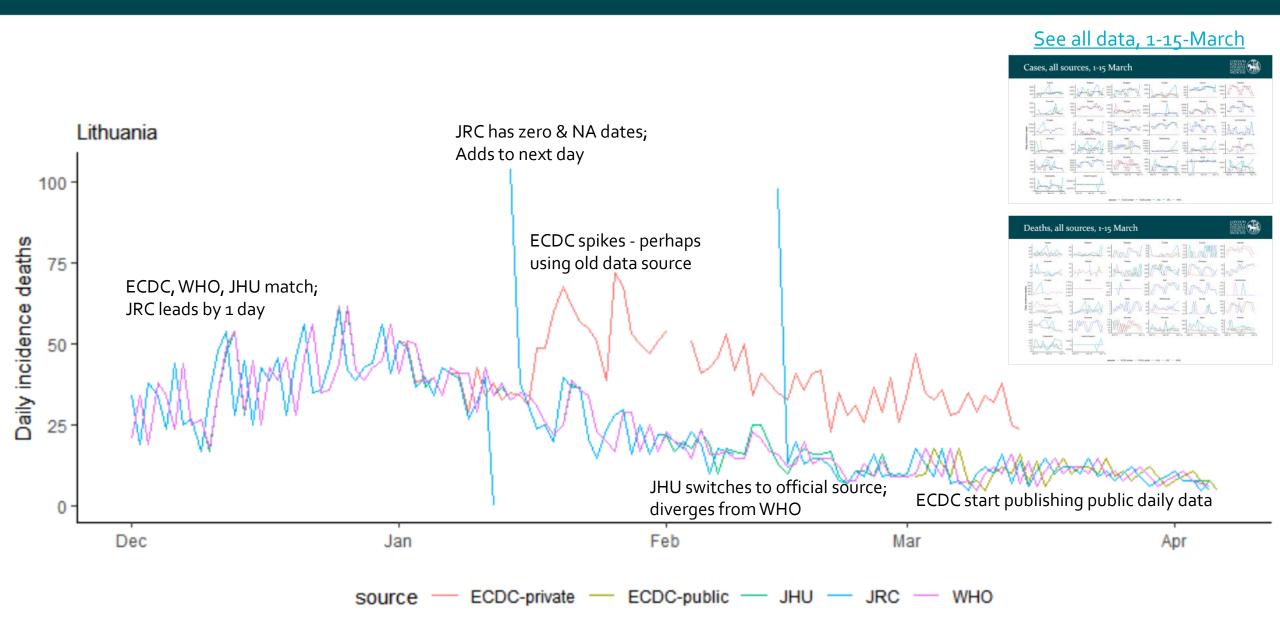# Cases and deaths: reporting process

Example: Lithuania, incident deaths

Lithuania

See all data, 1-15-March

JRC has zero & NA dates;
Adds to next day

ECDC spikes - perhaps
using old data source

ECDC, WHO, JHU match;
JRC leads by 1 day

JHU switches to official source;
diverges from WHO

ECDC start publishing public daily data

source — ECDC-private — ECDC-public — JHU — JRC — WHO

Cases and deaths: summary

	Source	Missingness	Revisions	Negative values	Overall
JRC	• Public country data	• Missing: - 2% deaths - 0.3% cases • Added next day: large outliers	• Claim to update with revisions • Data suggests this doesn't always happen	• Negative values: - 0.4% deaths - 0.3% cases	+ Timely (leads WHO by 1 day) - Large anomalies, missing + negative values
WHO	• JRC • ECDC • Country self-report (IHR) • Public country data	• No missing values • Missing set to zero	• Updates with revisions	• Negative values: - 0.03% deaths - 0.03% cases	+ Smoother version of JRC data (more consistent revision) + Fewer negative values
JHU	• WHO • Public country data	• No missing values • Missing set to zero	• Updates with revisions from source data	• Negative values: - 0.4% deaths - 0.2% cases	- Negative values + Public
ECDC – private	• TESSy • Public country data • JRC	• Missing: - 10% deaths - 9% cases	• ?	• Negative values: - 0.01% deaths - 0.01% cases	+ Better data quality (few negatives) - Extensive missingness
ECDC – public	• ? • No data for Switzerland, UK	• Missing: - 3% deaths - 3% cases	• ?	• Negative values: - 0.1% deaths - 0.1% cases	- Some missingness - Appears lagged on WHO/JHU data
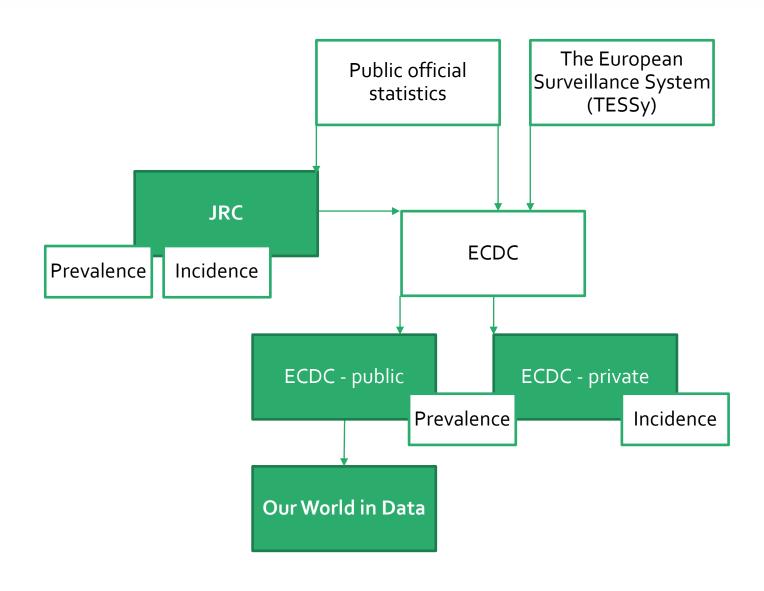
Hospitalisation & ICU: reporting process

Hospitalisation & ICU: summary

- JRC

  - Prevalence only
  - Covers nearly all locations but not on all dates
    - Only covers around half of all date/location combinations
  - One location missing altogether: Czechia
  - Hospital & ICU prevalence far higher than ECDC data

- ECDC – private
  - Incidence and prevalence
  - Covers all locations but not on all dates

- ECDC – public
  - Prevalence only
  - Hospital prevalence identical to private ECDC data
  - Covers nearly all locations but not on all dates
  - Five locations missing altogether:
    - Greece, Malta, United Kingdom, Liechtenstein, Switzerland

	Hospitalisation		ICU	
	Prevalence	Incidence	Prevalence	Incidence
JRC	51	0	47	0
ECDC - private	65	58	68	36
ECDC - public	76	0	63	0

% data across all date-location combinations

Cases and deaths:

- JHU

  - More stable than JRC; more consistent (not missing) than ECDC

  - Little difference compared to WHO

    - Pro: JHU issues are public and maintainers are responsive

    - Con: WHO may have better correction for negative data

Hospitalisation and ICU:

- ECDC public data

  - Best coverage for hospital occupancy

  - Coverage more consistent across the timeseries than JRC

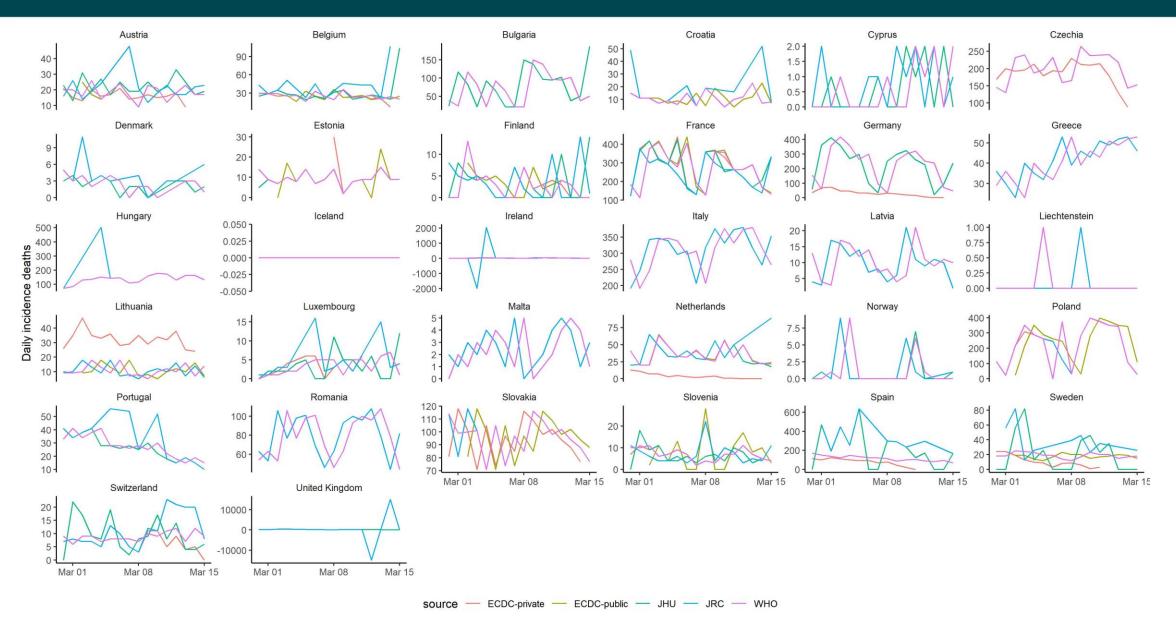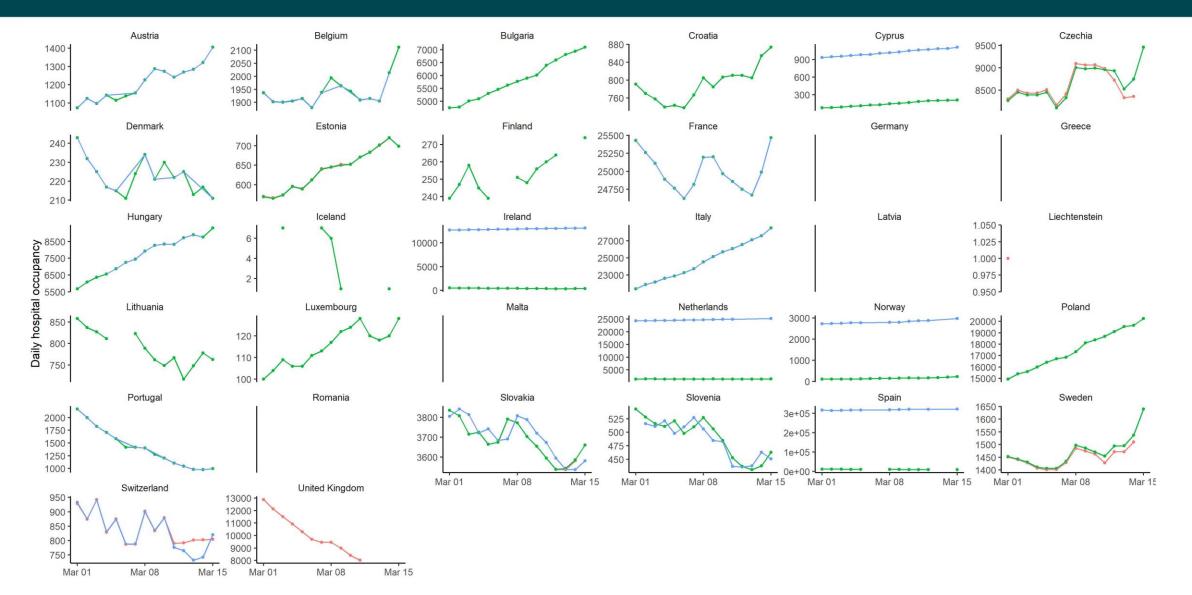 - No good option for ICU or European healthcare data in general

Country detail

Daily incidence cases

source — ECDC-private — ECDC-public — JHU — JRC — WHO