

# Covid-19 in European Urology - The lessons learned?



European Association of Urology

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President of DGU 2020

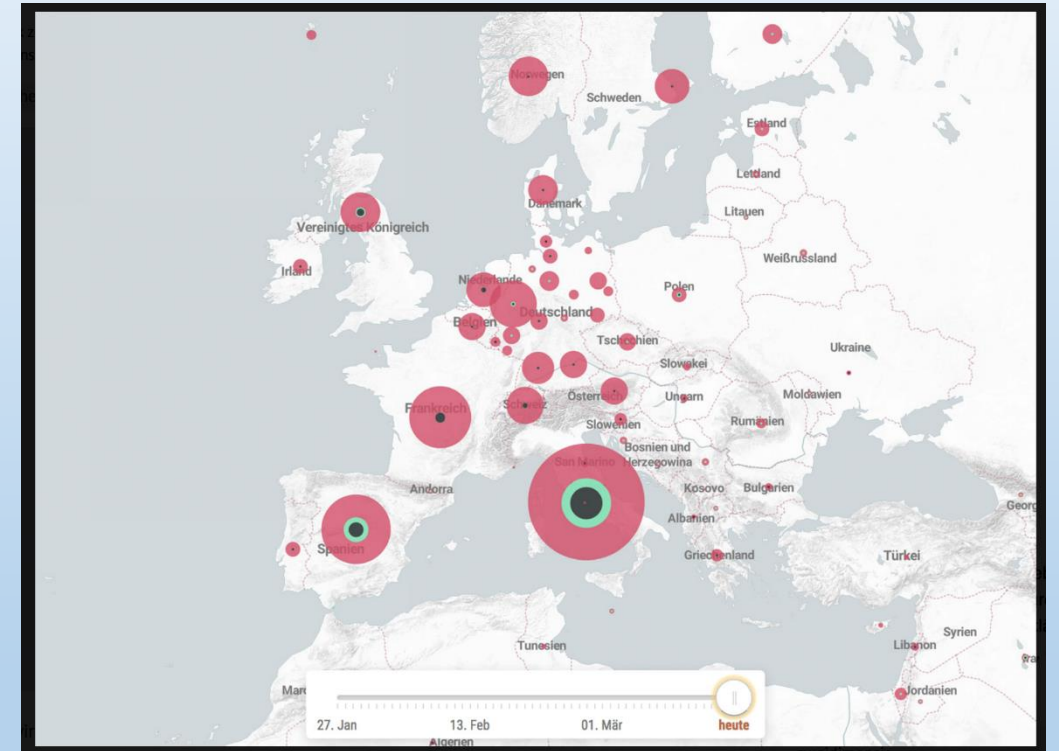
Chairman EAU Section Office

# Covid-19

## The challenge

### A new virus

- Respiratory tract
- Similarities to influenza
- No demographic data
- No specific vaccine
- No specific drug



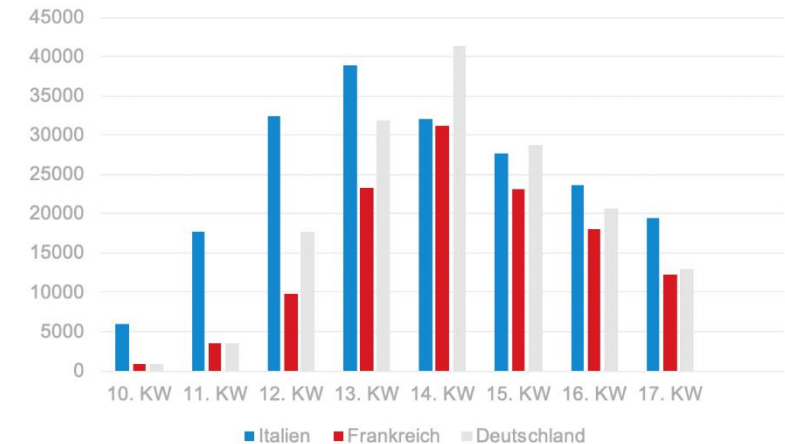
# Covid-19

# Epidemiology

We need to understand Covid-19

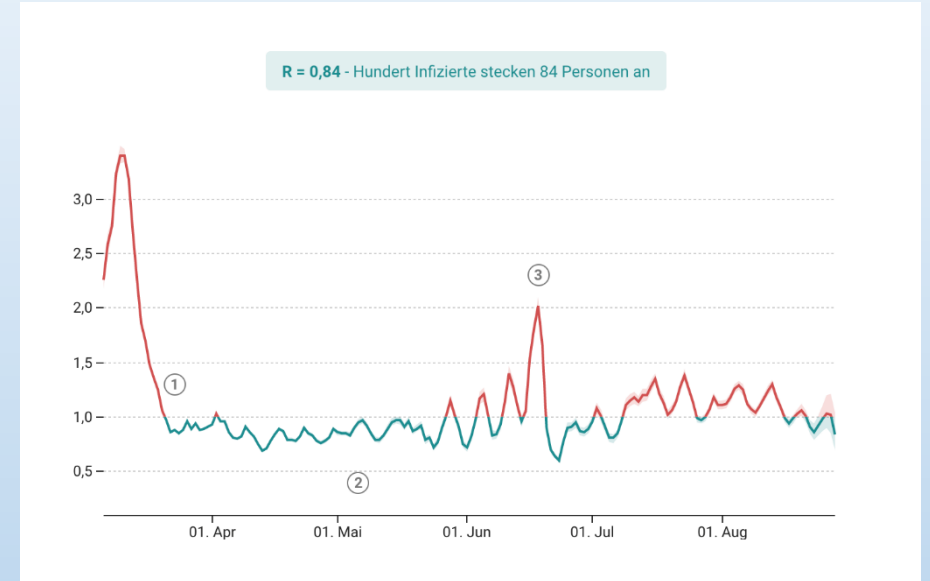
- Natural course of disease
- Impact of measures
- Prediction of future course

**COVID-19 Incidence in Europe**



## Parameters of evaluation

- Incidence
- Mortality rate
- Number of healed patients
- Reproduction number  $R_0$
- Effective Reproduction number  $R(t)$



# Covid-19

## Course of disease – First wave

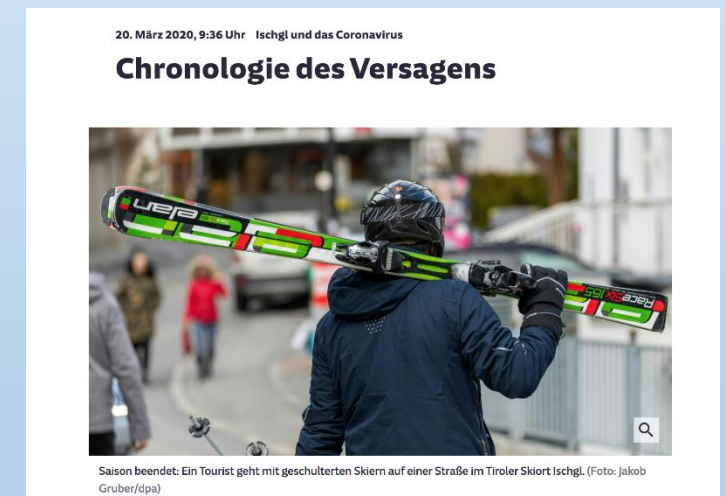
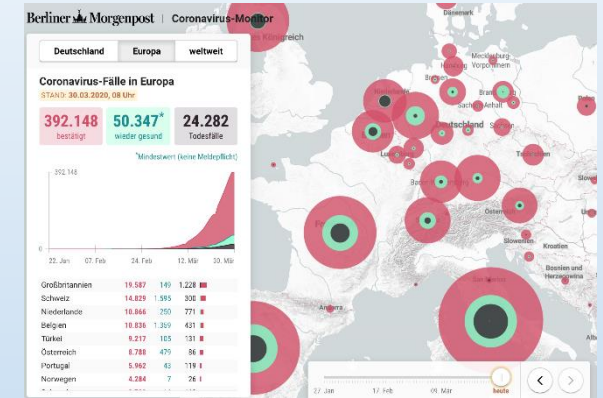
- High contagiousity ( $R_0 = 3.0$ )
- Transmitted by coughing, sneezing
- Incubation time 7 days
- Manifestation Index (60-80%)
- **Underdiagnosis factor 20 (all asymptomatic!)**
- Patients with ARDS (10-25%)
- Case fatality rate: Europe 10.5%, Germany 4.5%



# Covid-19

## Course of disease – First wave

- High contagiousity ( $R_0 = 3.0$ )
- Transmitted by coughing, sneezing
- Incubation time 7 days
- Time to ICU 10-14 days
- Importance of Hotspots (Après-ski, China Market, Mardi Gras, retirement homes )



# Covid-19

## Principles of Prevention

Social distancing (1.5 m)

Respiratory hygiene measures

- Mask, Hand wash

Cleaning of environmental surfaces

- Disinfectant

Quarantine

- 14 days for contact persons

Lock down

- School, University, Hospitals, Economy

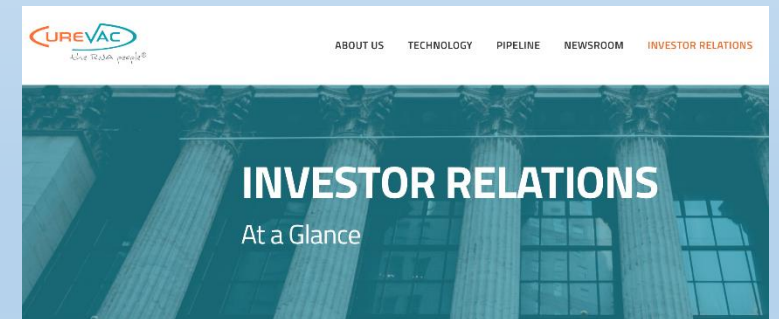


## Unspecific drugs ??

- Viral entry inhibitors (Chloroquine)
- Inhibitors of RNA-synthesis (Remdesvir)
- Inhibitors of protein synthesis (Lopinavir)

## Specific drugs

- convalescent plasma
- Vaccine (Cure-Vac, Astra-Zeneca)





# Covid-19

## Treatment Options for severe cases

### Unspecific Therapy on ICU

- Non-invasive ventilation
- Intubated ventilation with PEEP
- Extracorporeal membrane oxygenation (ECMO)
- Diuretics
- Antithrombotic treatment
- Cortisone

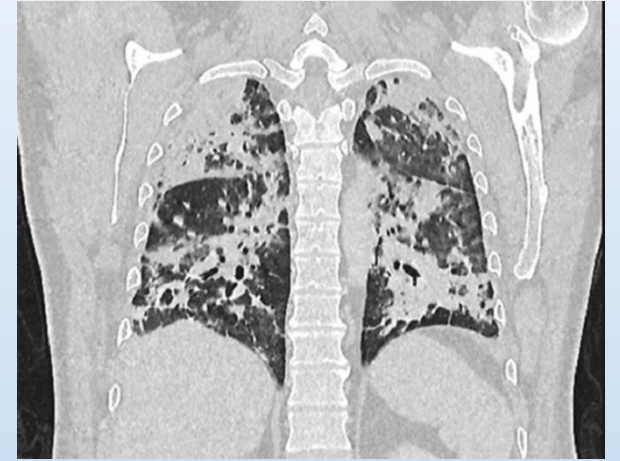


Covid-19

# How to master COVID-19 (First wave)

## Unspecific Therapy on ICU

- 10-14 days after symptoms
- 10-14 days on ICU
- 10-40% Letality on ICU



A critical window of 2-3 weeks

There are Hotspots

Decentralization (National, Europe)



# Covid-19

## Principles of Prevention

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**Lock down**

- **School, University, Hospitals, Economy**



## Timing of Lock-down in Europe

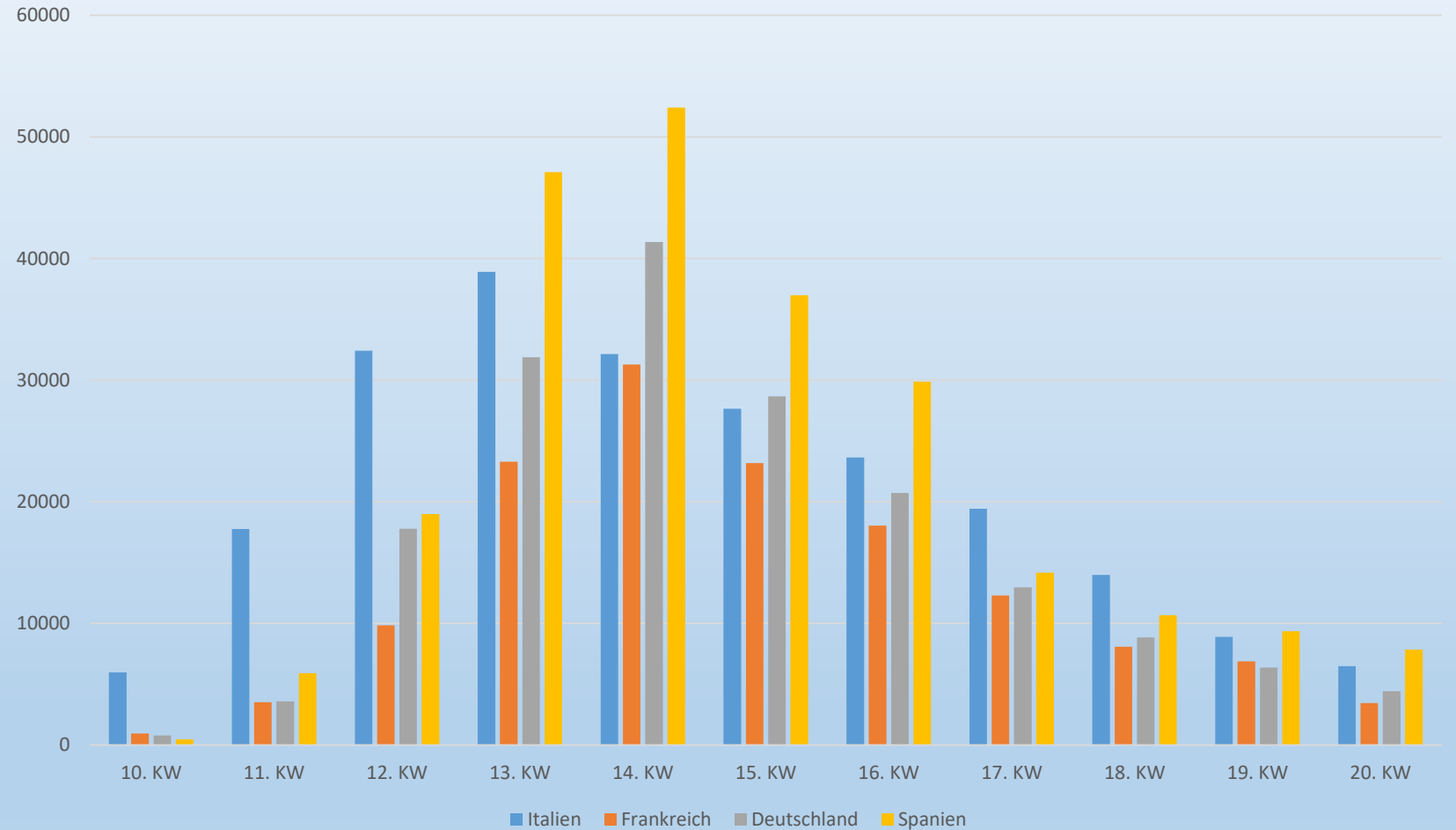
	School/Uni	Restaurants	Isolation
Italy:	24. February	5. March	9. March
Spain:	13. March	20. March	21. March
France:	17. March	18. March	18. March
Germany:	17. March	21. March	23. March



# Covid-19

## Curve of incidence in Europe (First wave)

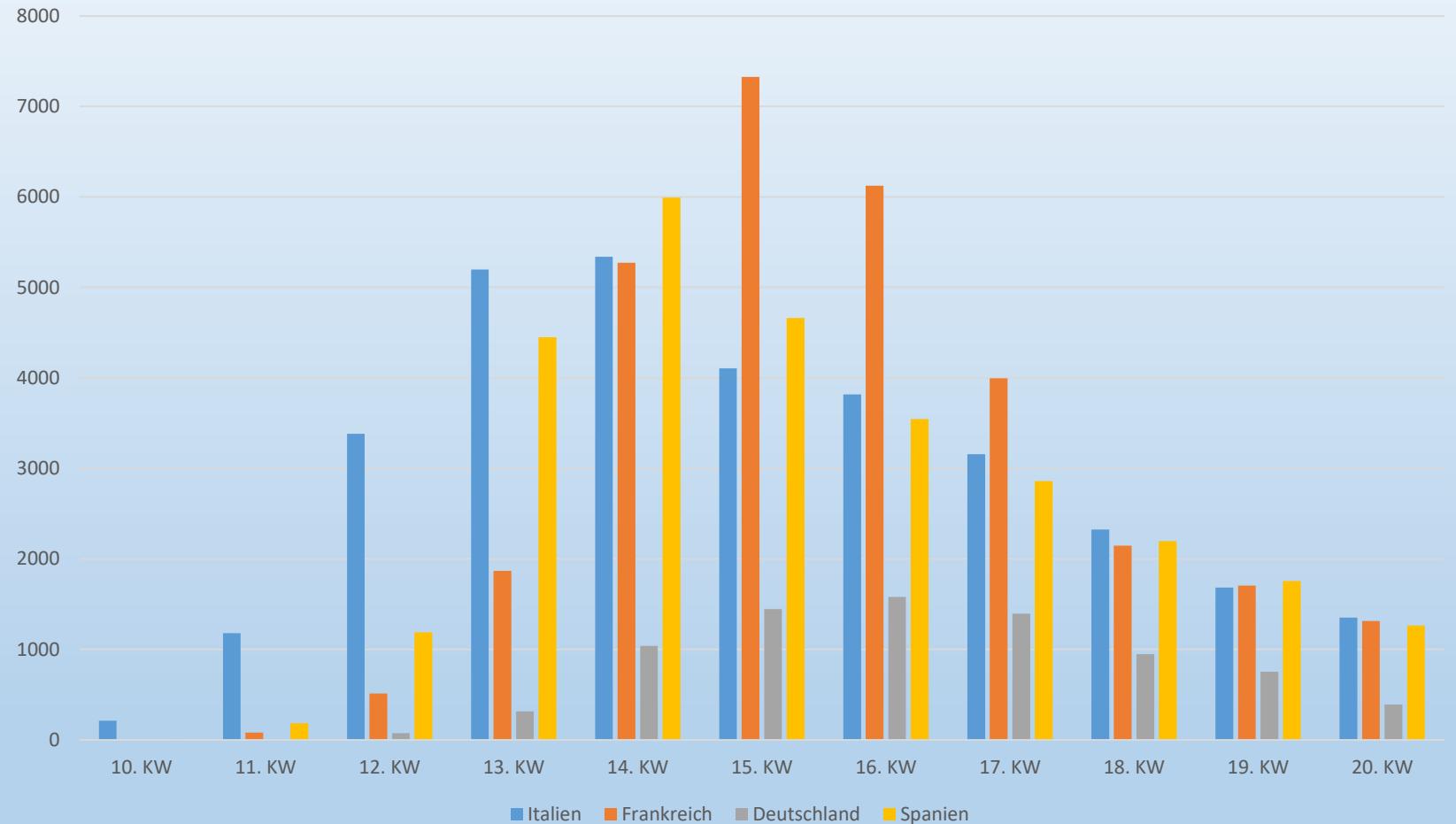
- Peak two weeks after lock-down
- Two extreme weeks
- Steady decrease with  $R_{eff}(7d) = 0.7$



# Covid-19

## Curves of mortality in Europe (First wave)

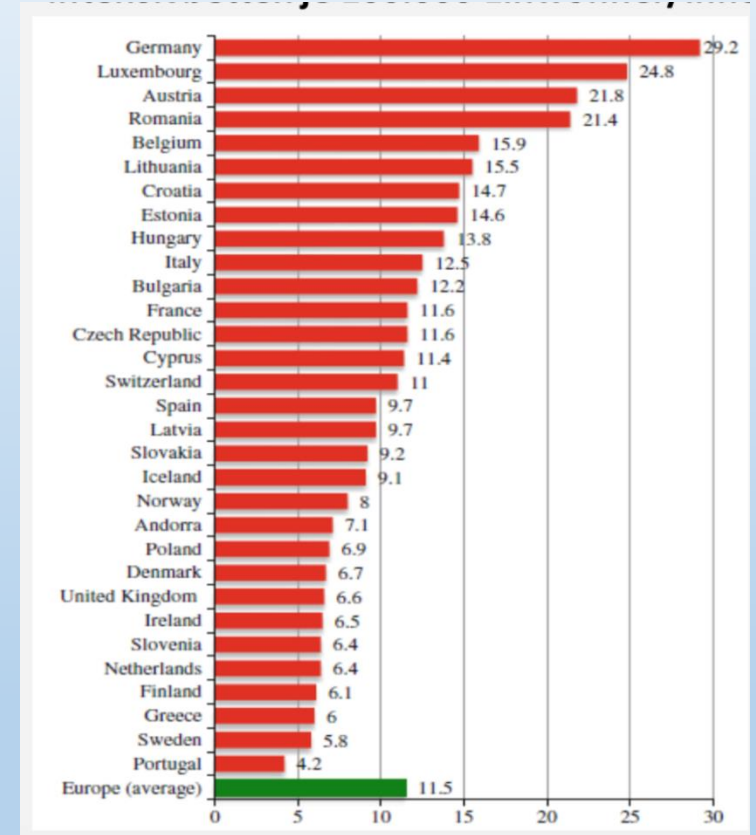
- Peak two weeks after incidence peak
- Two extreme weeks
- Critical period 3 weeks
- Steady decrease with  $R_{eff}(7d) = 0.7$



# Covid-19

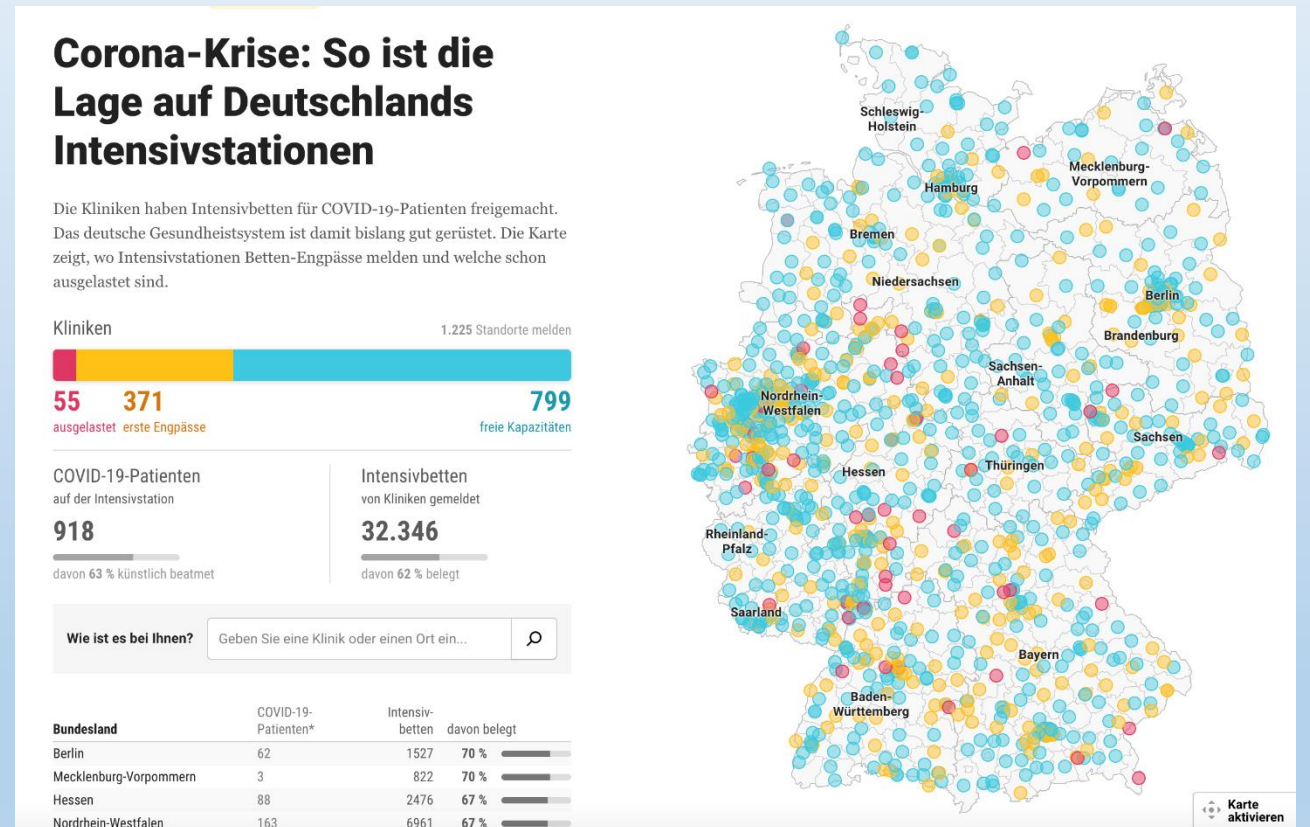
# Mortality Rates in Europe

21-5-2020 (KW 21)	Cases	Deaths	Mortality
Italy:	228006	32486	14.2 %
Spain:	233037	27940	11.9 %
France:	144163	28215	19.6 %
Germany:	178748	8203	4.5 %



## Centralized Registry of ICU-beds

- Never a problem in Germany
- Able to help more other countries!





## Covid-19

# Factors influencing the "Incidence"

- Depending on numbers of tests (country, period)
- Depending on quality of registration
- Depending on holidays, weekends
- Depending on local hotspots
- Depending on virulence of the virus (second wave)

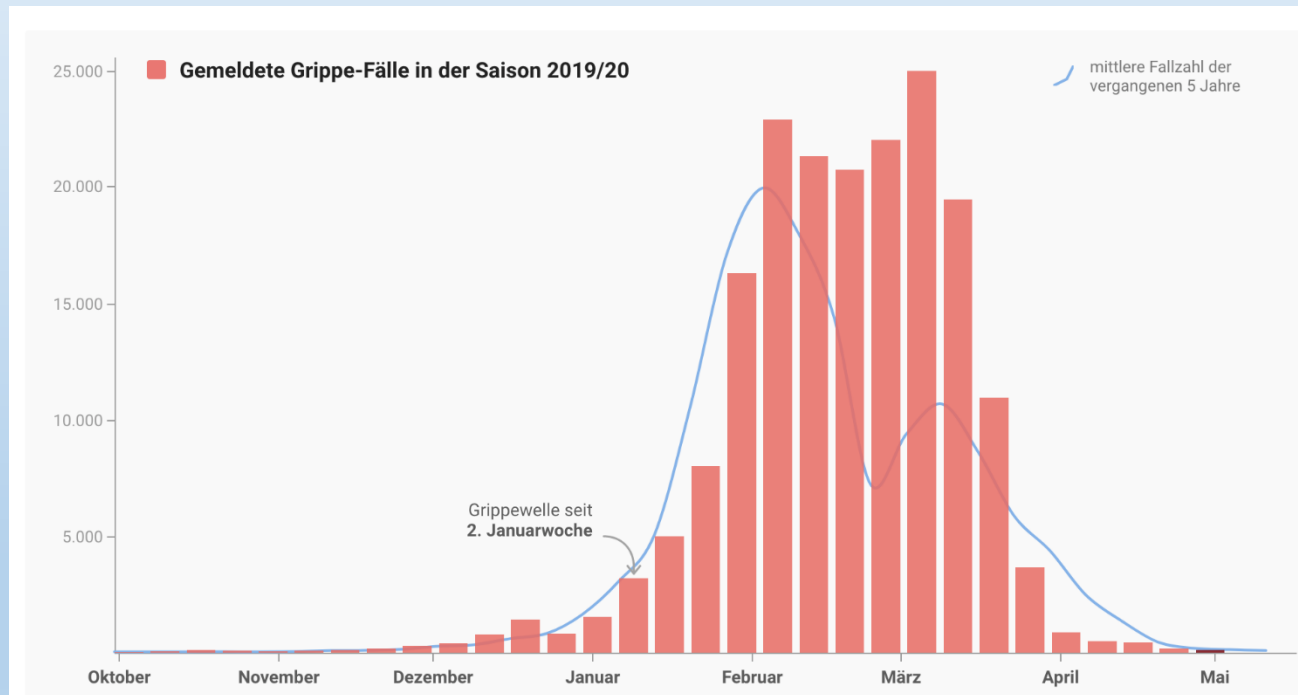
But some factors may have no impact!



# Covid-19

# How to understand the disease

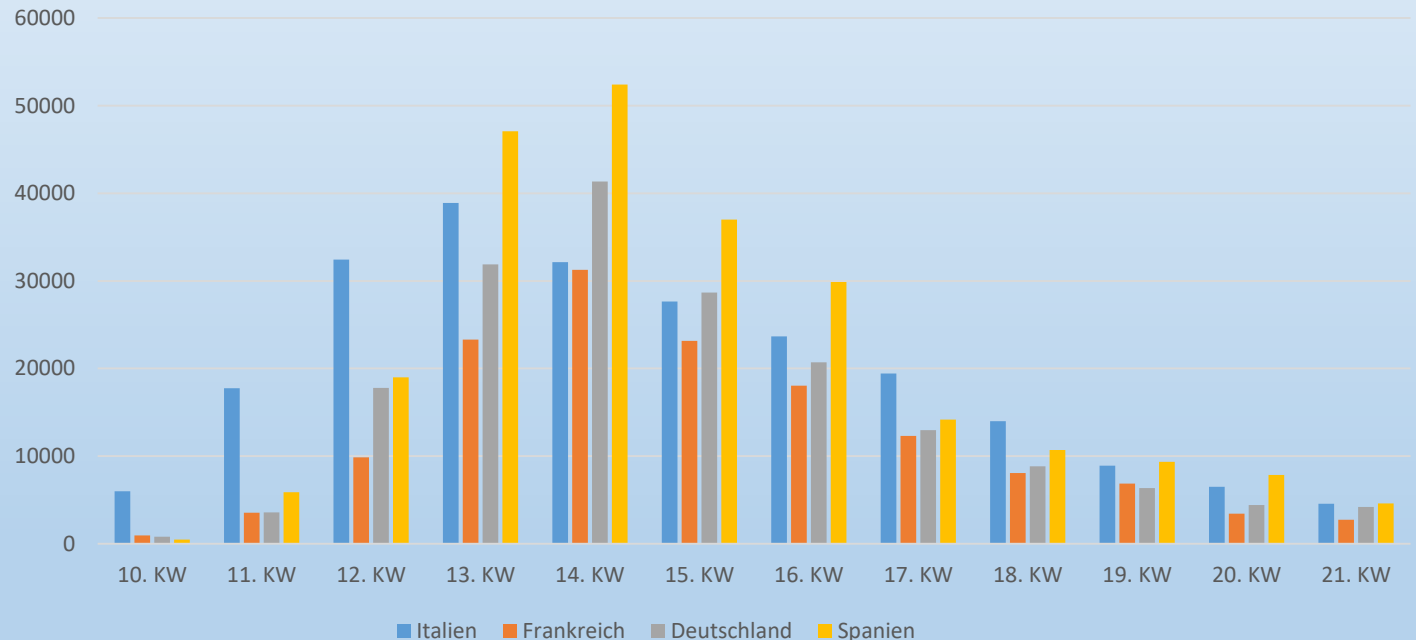
Similar characteristics as Influenza or SARS?  
- will it (temporarily disappear?): No



# Covid-19

## Curve of incidence in Europe

- No significant impact of measures
- Scholars are coming from quarantine
- More markets are not important
- Still masks and social distance
- There will be no 2<sup>nd</sup> wave!



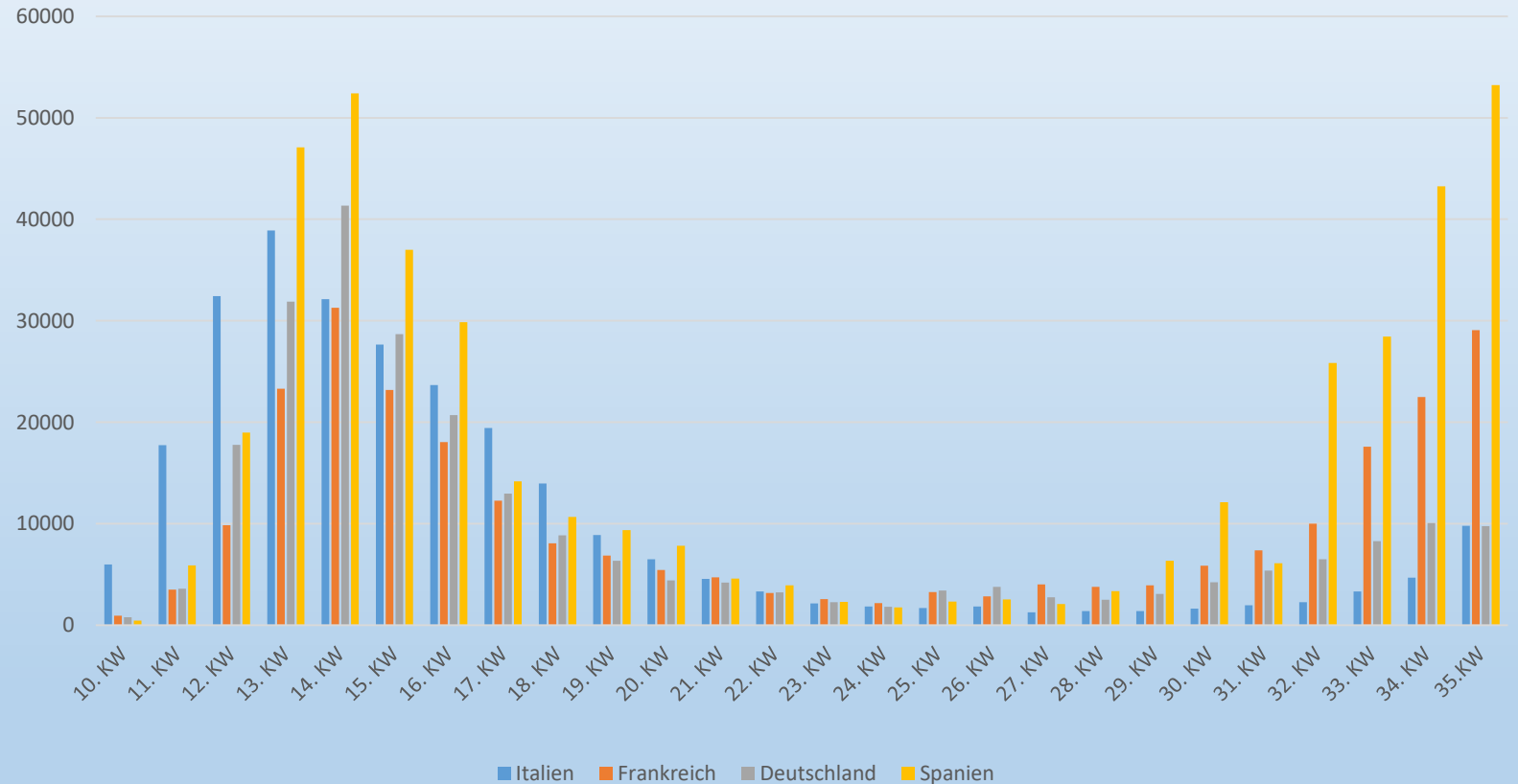
# Covid-19

## The second wave – Incidence in Europe

- Since July 18 increasing
- In Germany and Italy with steady increase  
 $Reff(7d) = 1.2$
- In Spain and France exponential Increase

Main reason is travelling

- Holiday
- Family meeting
- Specific Hotspots  
(Slaughtereries)



# Covid-19

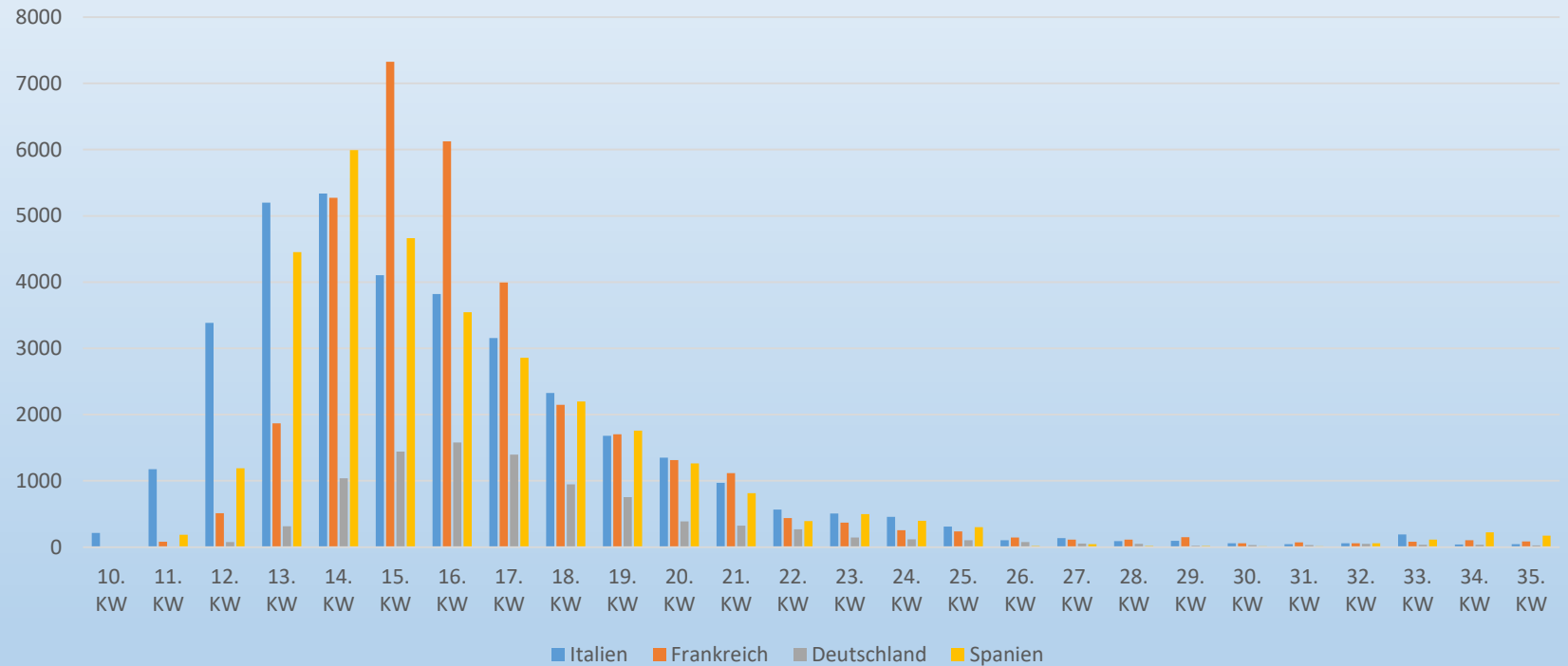
## The second wave – Mortality in Europe

- The wave has not reached the Hospitals

Main reason:

- Attenuation of virus
- High testing activities
- More younger patients

Risk-patients are compliant (Masks, hygiene, distance)



- Lock down may speed up the recovery (Europe vs Sweden)
- Severity of Lock down has no impact on recovery
- Hotspots have to be identified (retirement homes, carnival, ski resorts)
- There is a 3 week peak period!
- Medical system needs to be provided (registry, early distribution of patients)
- Timing of re-start is crucial (really only step-by-step)
- Second wave with attenuated virus mainly due to travelling
- Hygienic rules and measures still important

