

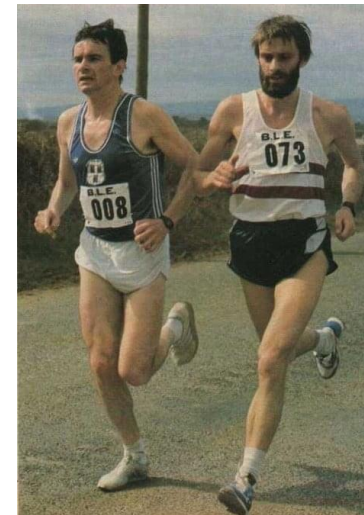
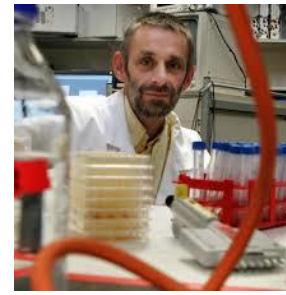


Kingston Mills

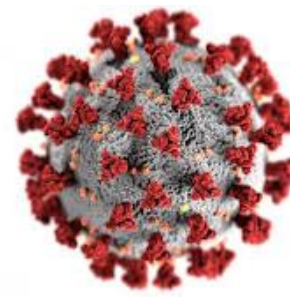
The challenges of COVID-19 for Athletics

Kingston Mills – Brief Biography

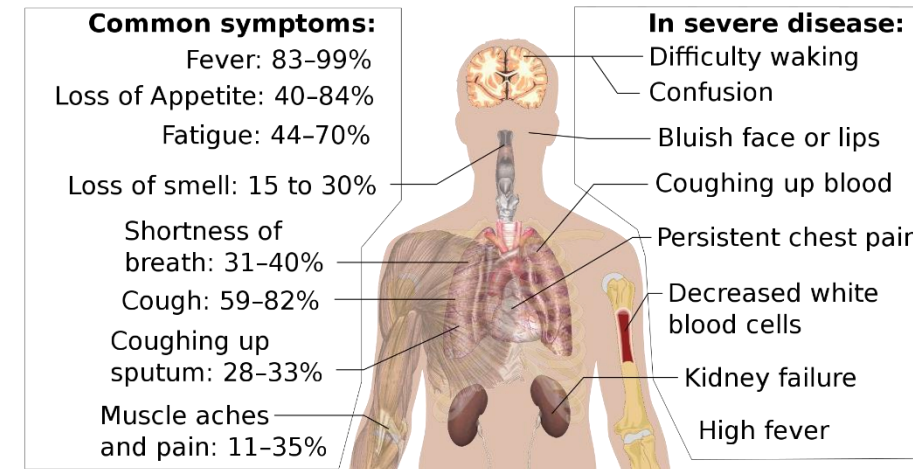
- Professor of Experimental Immunology, Trinity College Dublin
- Director of Trinity Biomedical Science institute
- Lead Investigator, Trinity COVID-19 Research Hub
- Scientific training at UCL and NIMR London
- Former athlete,
 - DUHAC, Civil Service AC, Shaftsbury Harriers London
 - Irish international: cross country, track & marathon



COVID -19

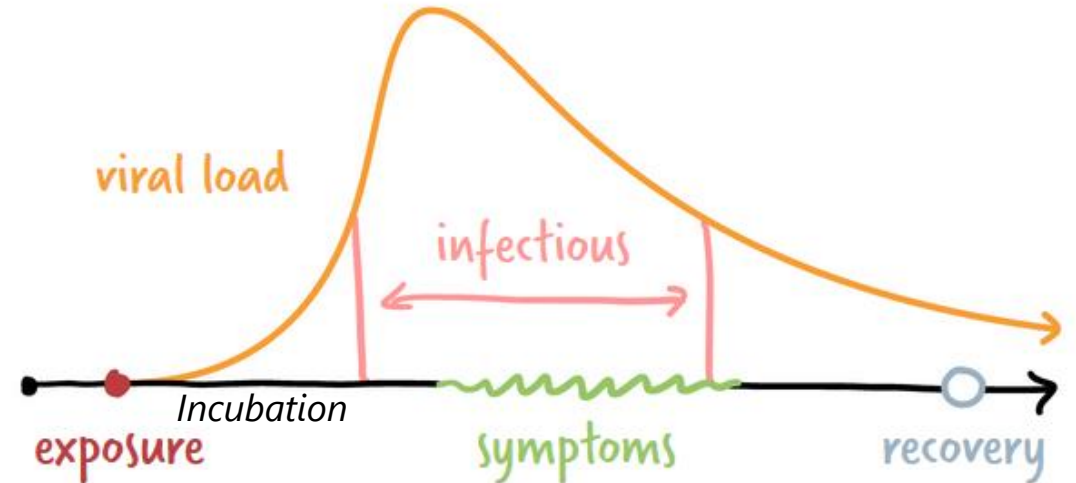
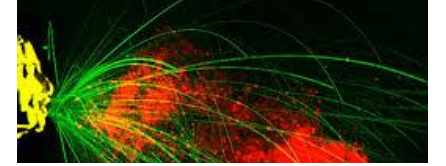


- COVID-19: an acute respiratory viral disease caused by the virus SARS-CoV-2
- >50% infections are asymptomatic
- ~20% of COVID-19 cases hospitalized
- ~2% have severe illness
- 0.5-1% fatal disease (influenza fatality rate 0.1%)
- Deaths from acute systemic inflammation / cytokine storms
- Risks factors: >70 yrs and underlying medical conditions
 - obesity, type 2 diabetes, cardiovascular disease

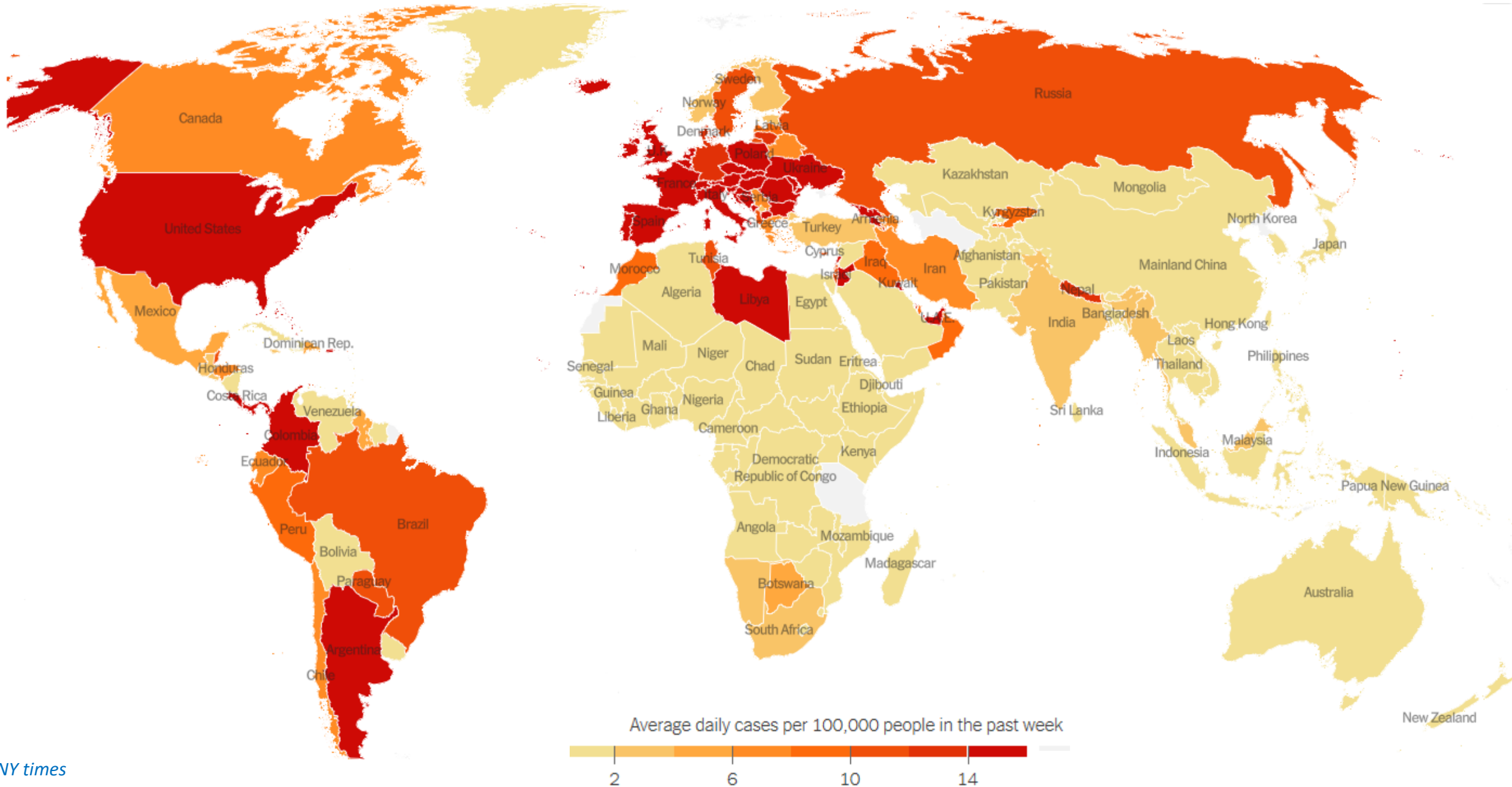


SARS-CoV-2 transmission

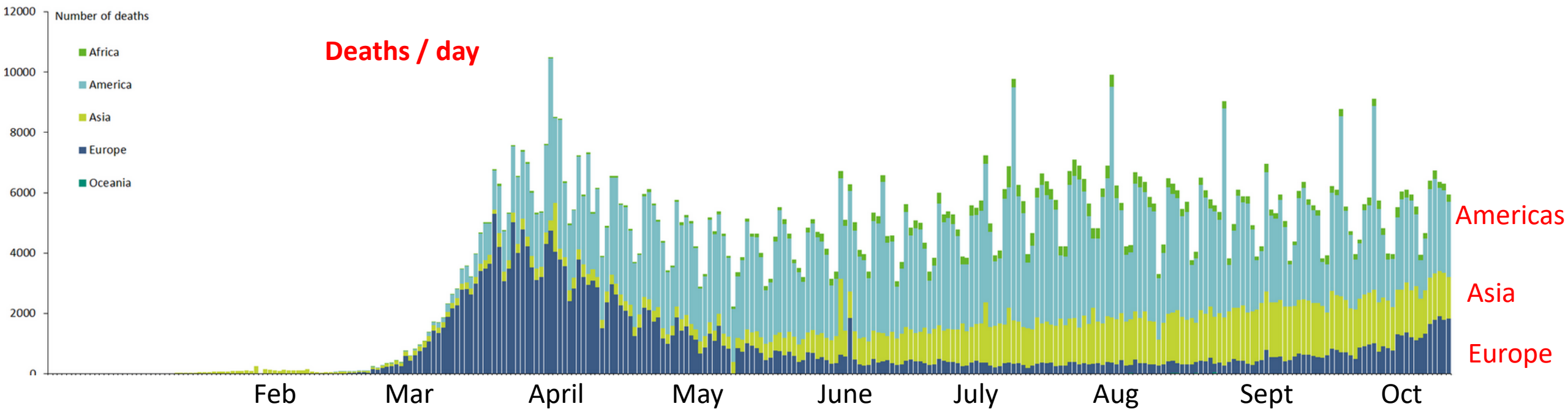
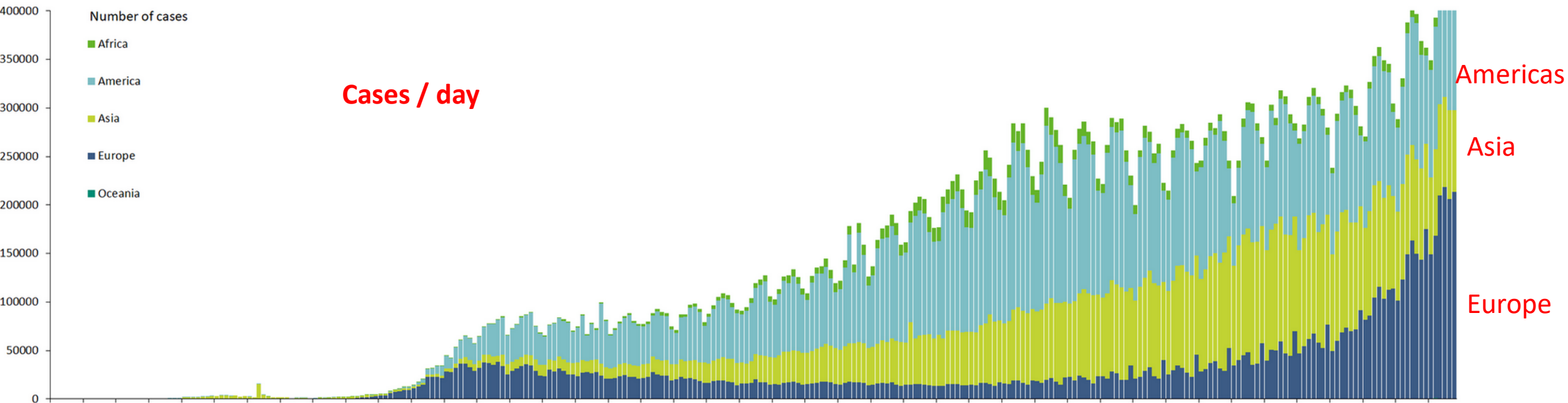
- Virus spreads from person to person via direct contact.
- Virus is mainly transmitted via small respiratory droplets, through sneezing, coughing, shouting
- Enhanced by people interacting in close proximity for some time
- Physical distancing and face coverings reduce transmission
- Transmission much lower outdoors compared with indoors
- Virus can be spread in pre-symptomatic phase and by those infected without symptoms (asymptomatic individuals)



Global incidence of COVID-19 (26 Oct 2020)



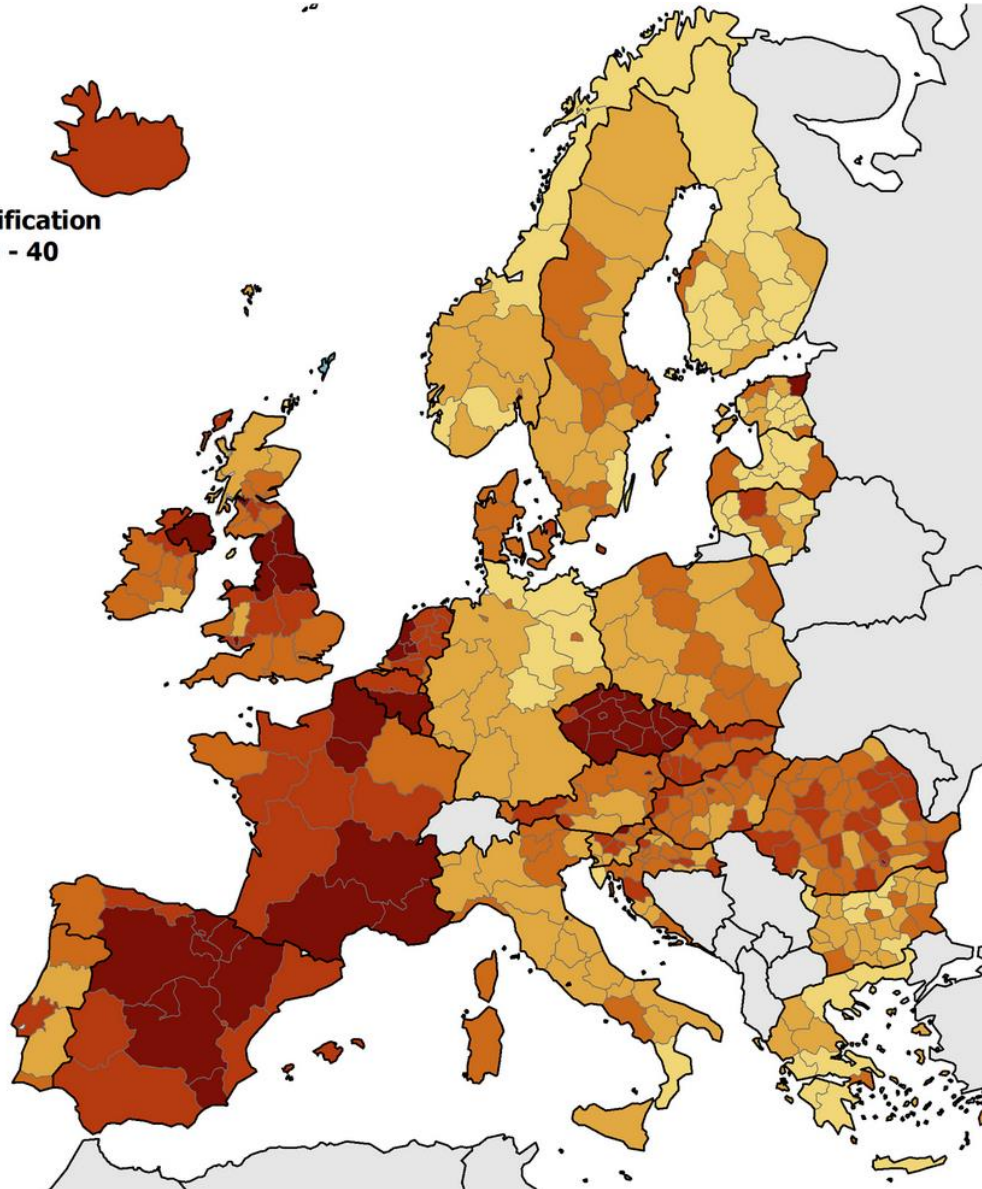
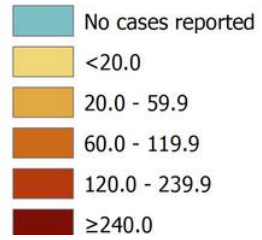
Trends in Global Cases and Deaths from COVID-19



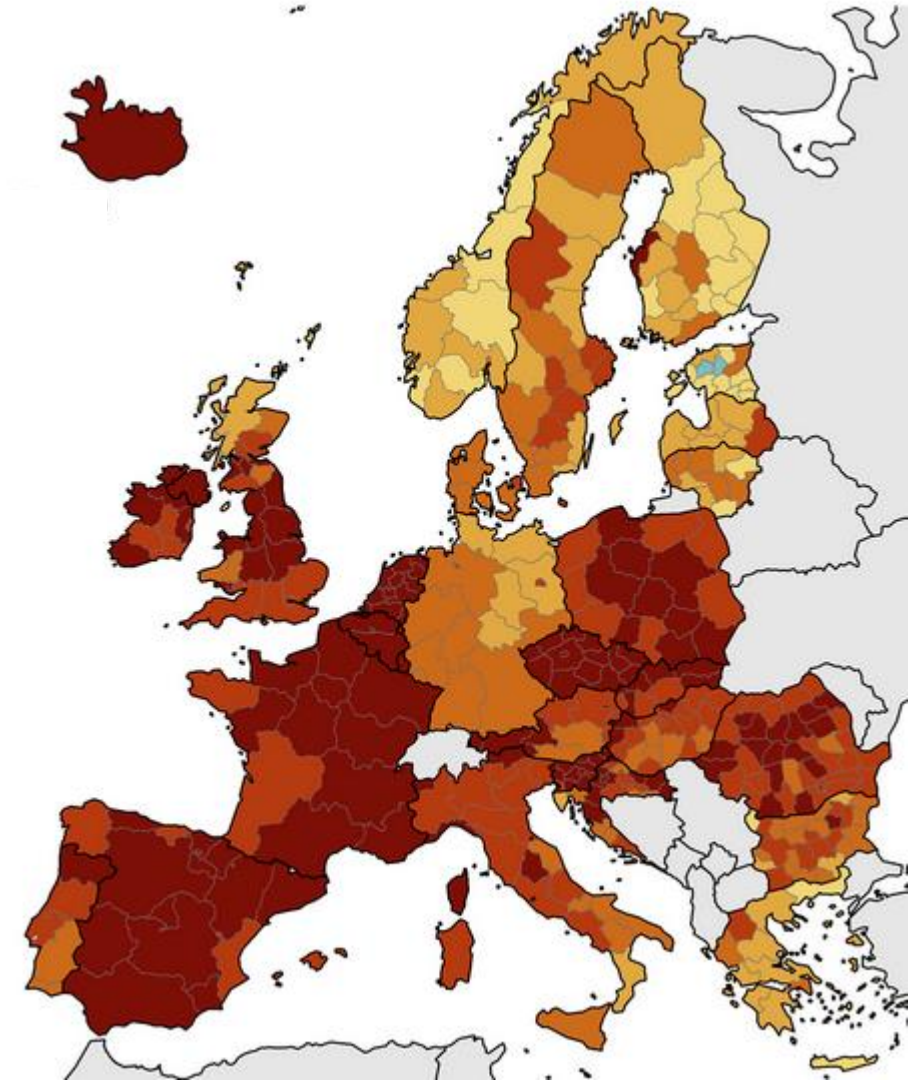
Europe – 12 October 2020



14-day COVID-19 case notification rate per 100 000 weeks 39 - 40

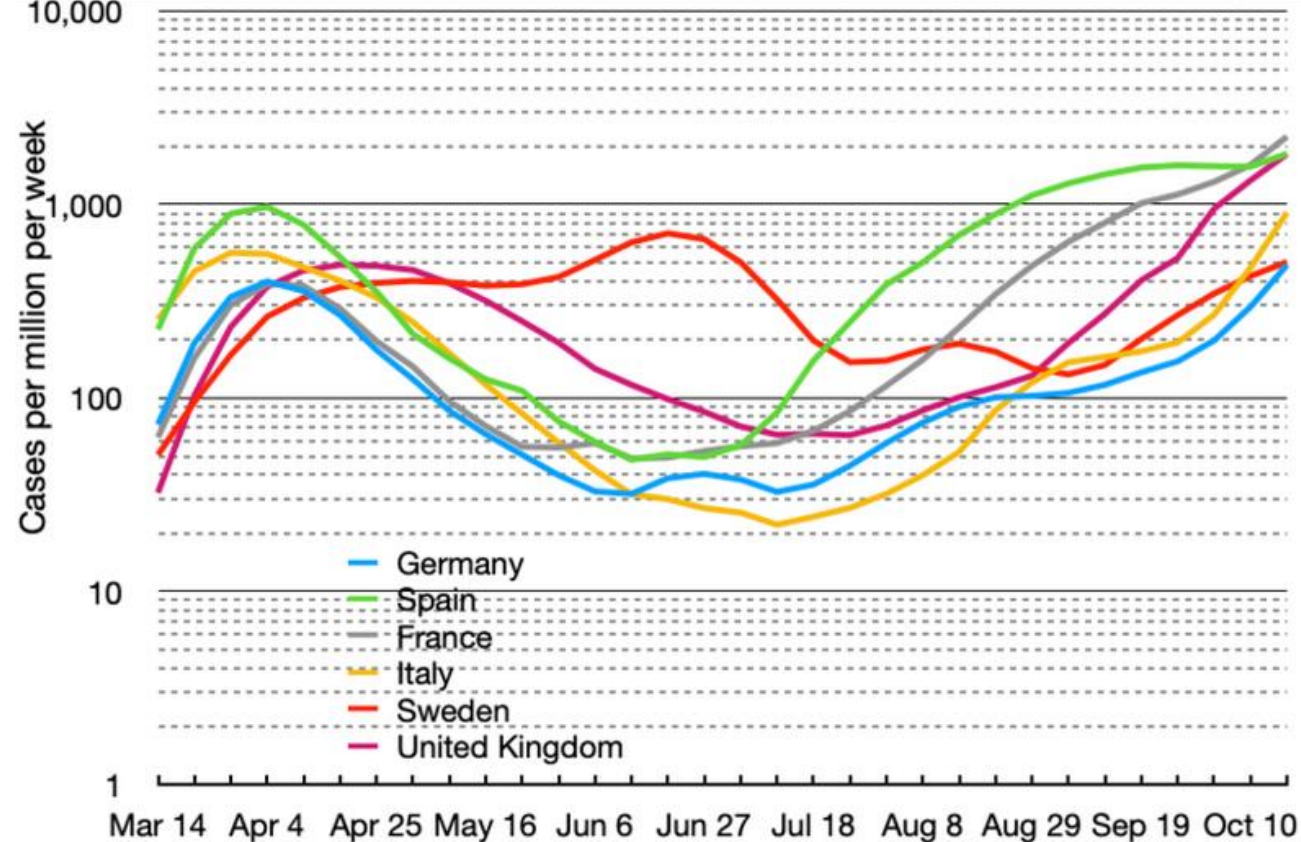


Europe – 26 October 2020

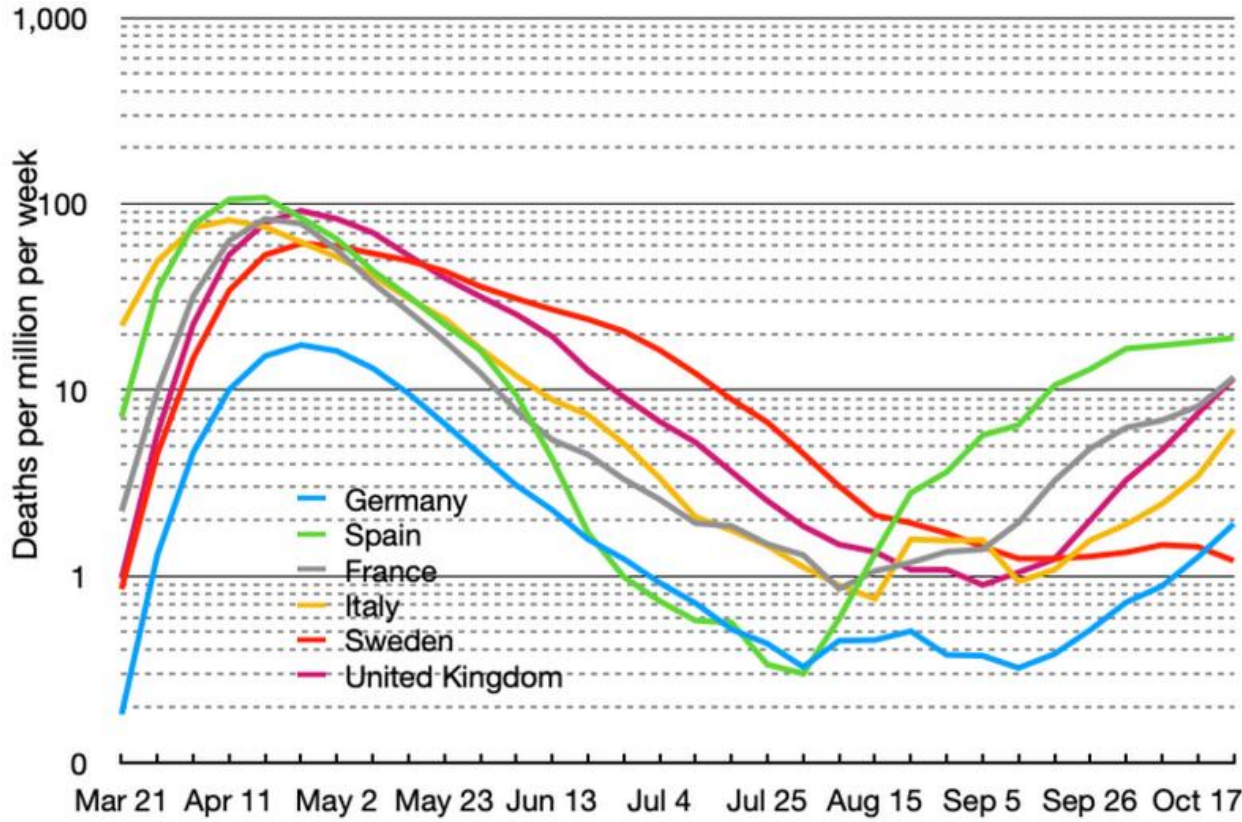


Cases of COVID-19 in selected European countries to 26th Oct 2020

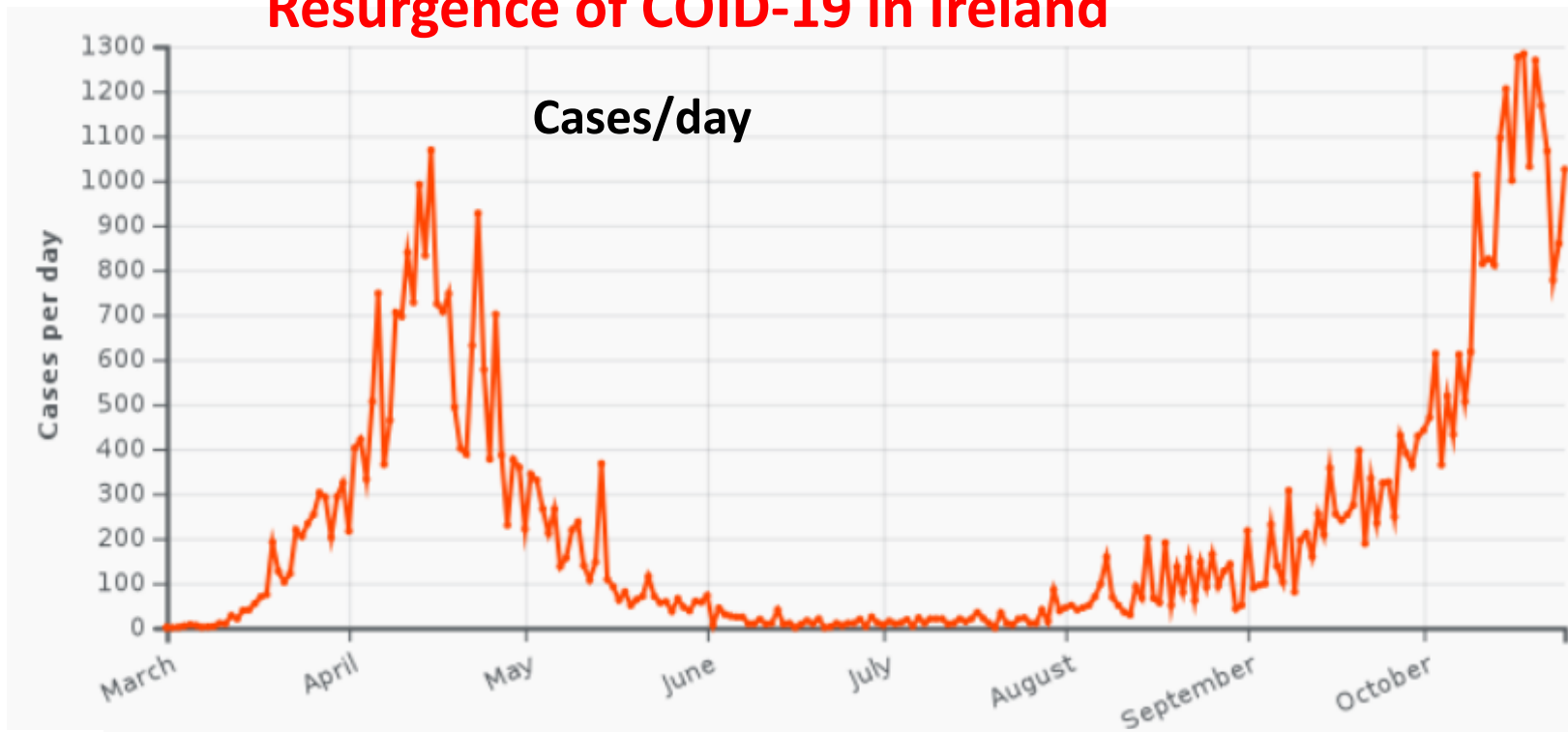
Cases



Deaths



Resurgence of COVID-19 in Ireland



COVID-19 In Ireland (23 Oct 2020) : Older - higher fatality, Younger - can be hospitalized

Cumulative cases

Age	Cases (%)
0-4	1,163 (2.1%)
5-14	2,777 (5%)
15-24	9,542 (17.26%)
25-34	9,649 (17.46%)
35-44	8,885 (16%)
45-54	8,665 (15.68%)
55-64	6,242 (11.29%)
65-74	3,308 (5.98%)
75-84	3,046 (5.51%)
85+	2,797 (5%)

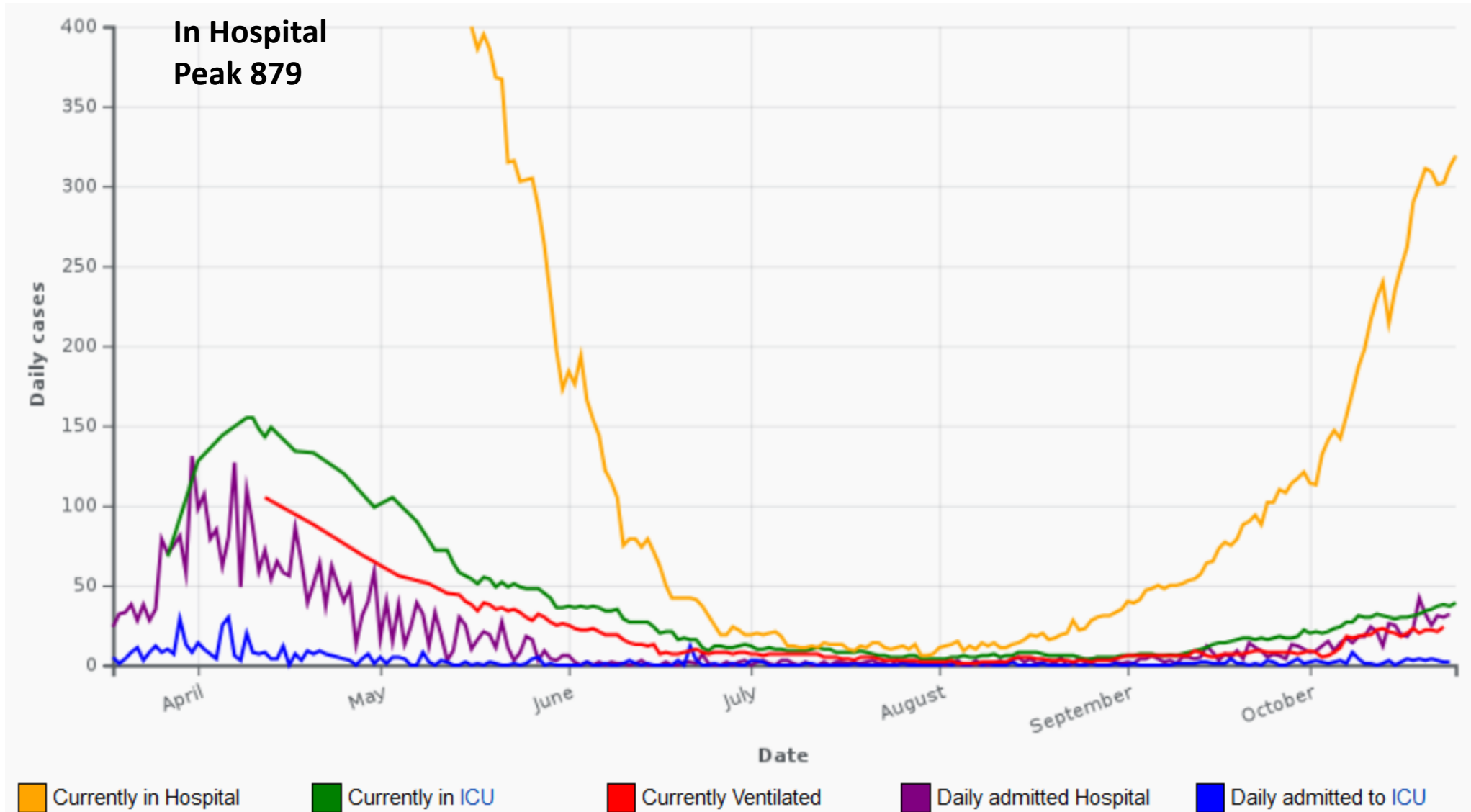
Hospitalized cases

Age	Number of cases (%)
0-4	43 (1%)
5-14	37 (0.88%)
15-24	123 (2.95%)
25-34	264 (6.34%)
35-44	336 (8%)
45-54	547 (13.13%)
55-64	629 (15.1%)
65-74	747 (17.94%)
75-84	906 (21.76%)
85+	561 (13.47%)

Deaths

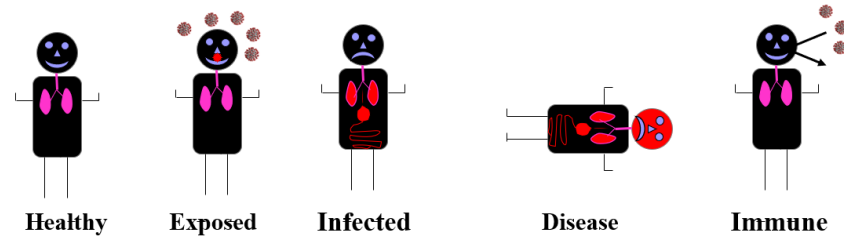
Age	Deaths (%)
0-24	1 (0.05%)
25-34	7 (0.37%)
35-44	13 (0.7%)
45-54	31 (1.66%)
55-64	82 (4.4%)
65-74	268 (14.35%)
75-84	640 (34.1%)
85+	833 (44.37%)

COVID-19 in Ireland: Daily Hospitalizations and ICU Admissions

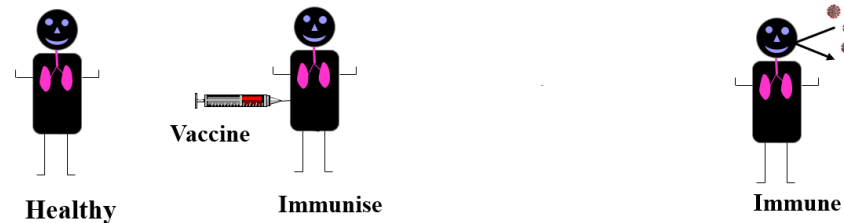


Immunity to SARS-CoV-2

Induction of Immunity by natural infection



Induction of immunity by vaccination



Estimated % of population infected

Manaus, Brazil: 44%

New York: 22-34%

London: 15%

Dublin: 3%

Population or Herd Immunity

- Threshold of vaccine uptake that must be reached for a vaccine to be effective in the whole population (herd).
- Usually > 80-95% of the target population (minimum 70% for an effective COVID-19 vaccine)
- Provides protection for people who have not themselves developed immunity by eliminating the spread of the virus within the population.
- Particularly important in protecting the most vulnerable

COVID-19 Treatments and Vaccines

Treatments

Antibody therapy:

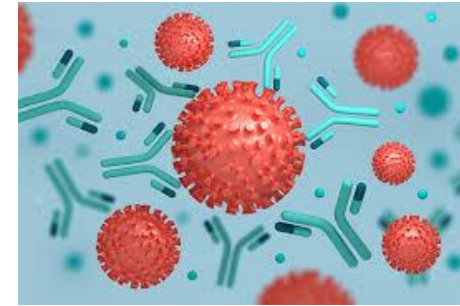
prevents infection, only useful early in infection

Anti-viral drugs:

e.g. Remdesivir – Can reduce viral load early in infection

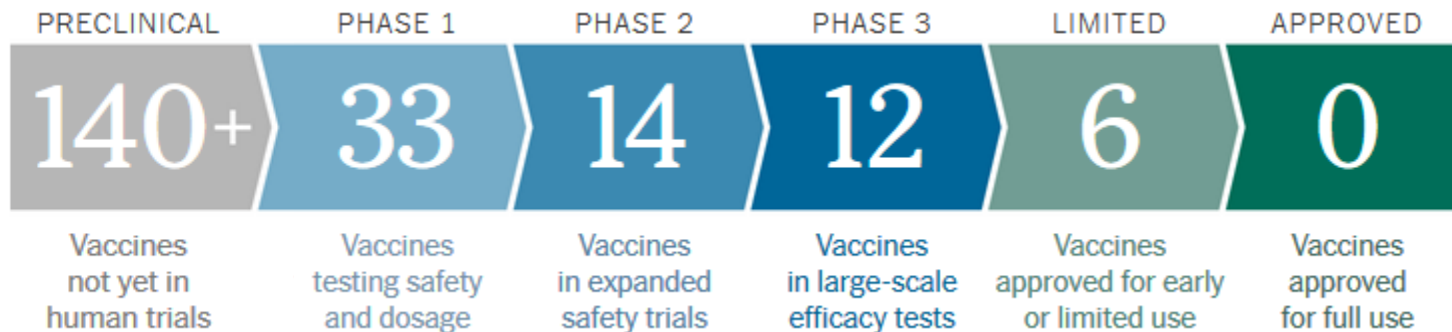
Anti-inflammatory drugs:

e.g. dexamethasone, a steroid that can reduce lethal inflammation



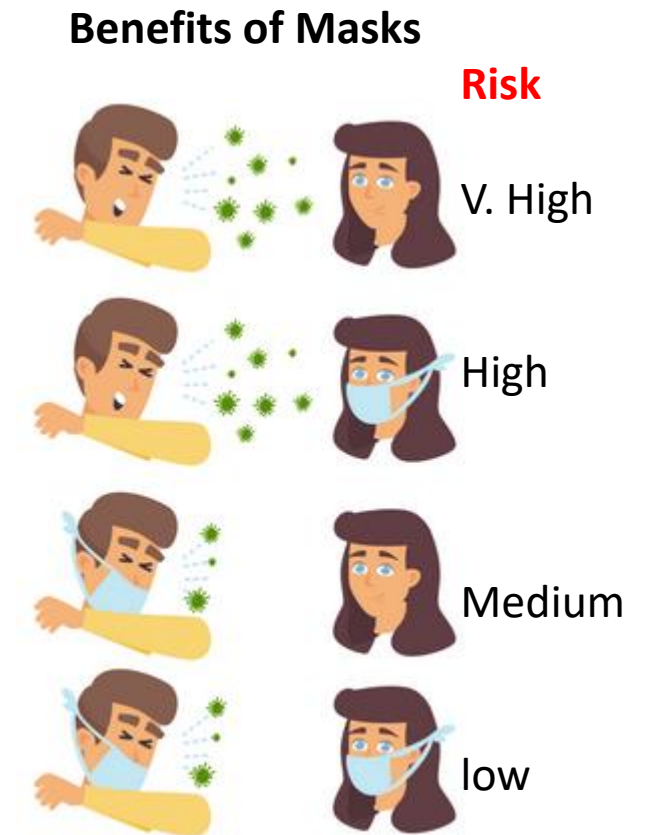
Vaccines

- An effective vaccine - the best long term solution for control of COVID-19 pandemic
- Only medical intervention that will prevent infection with SARS-CoV-2
- Progress:

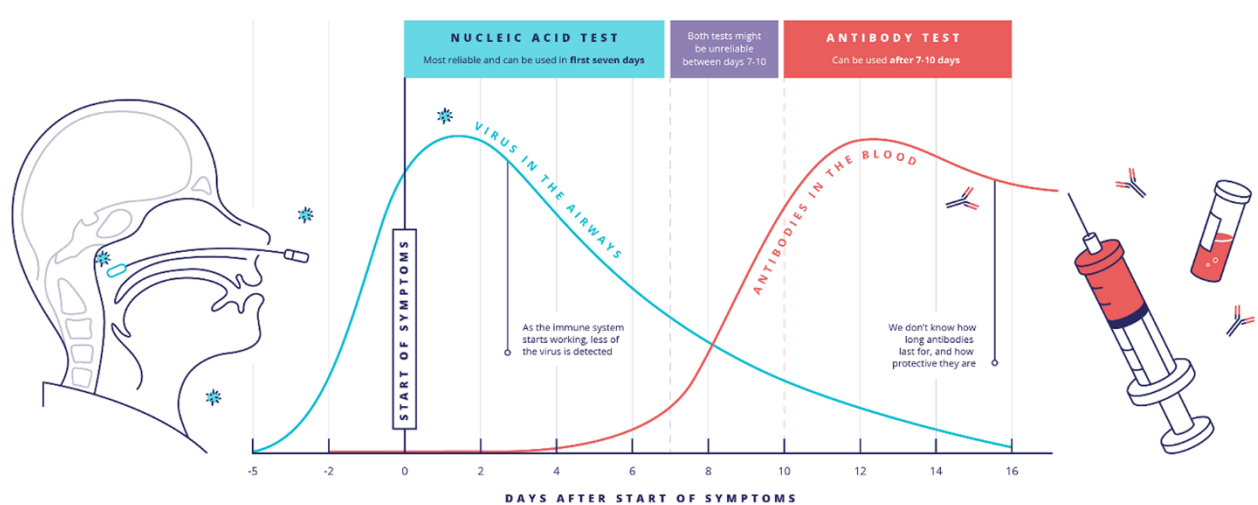


Controlling COVID-19 by preventing infection with SARS-CoV-2

- Limiting contact with others
- Social distancing – especially indoors
- Mask / face coverings
- Contact tracing, testing and isolation
- International travel restrictions & testing pre- / post-travel (at airports)



Testing for COVID-19 / SARS-CoV-2

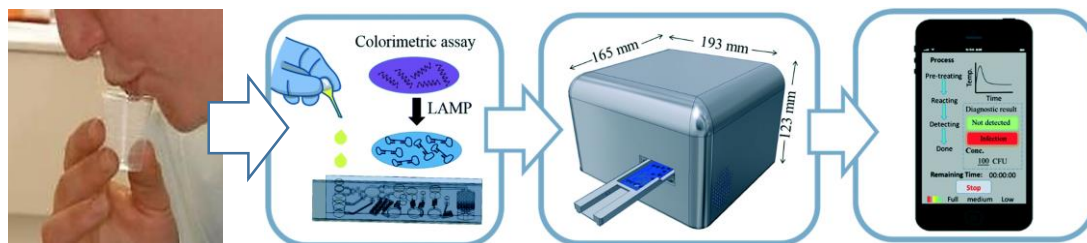


Virus testing

PCR Test



Rapid LAMP Assay on saliva

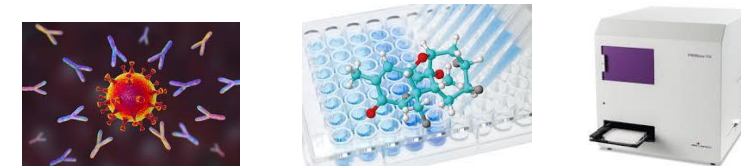


V. rapid Strip test for viral Antigen



Antibody testing

Antibody ELISA



Antibody strip test



Impact of COVID-19 on sport

Tokyo 2020 Olympics postponed over coronavirus concerns
The global competition is the biggest sporting event to be affected by the coronavirus pandemic.



European Cross-Country in Dublin is cancelled due to Covid-19

Event was scheduled to take place at Abbotstown in December

© Tue, Sep 8, 2020, 14:14

Ian O'Riordan
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The 2020 European Cross-Country Championships were due to take place at the purpose-built course at Abbotstown. Photograph: Tommy Dickson/Inpho

COVID-19 robs sheen off Diamond League 2020



England v Barbarians called off after players breach Covid rules

By Chris Jones & Laura Scott
BBC Sport

© 23 October 2020 | Rugby Union



England, who have not played since March, are set to face Italy in the Six Nations on Saturday 31 October in Rome
England's match against the Barbarians at Twickenham on Sunday has been called off after 12 Barbarians players were stand down for breaking Covid rules.



Exercise and Athletics in the COVID-19 Pandemic Era

May 14, 2020 | Michael Scott Emery, MD, FACC; Dermot M. J. Phelan, BAO, MB BCh, PhD, FACC; Matthew W. Martinez, MD, FACC

“regular moderate exercise has an abundance of beneficial effects beyond the cardiovascular system including mental health and a boost to the immune system.”

Impact of COVID-19 on sport



An immunology expert view on racing's return

Posted by Jessica Whittington | May 15, 2020 |

Former athlete Professor Kingston Mills says that with some innovation, running is a sport which could soon get back on track following the coronavirus pandemic

THE IRISH TIMES

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Marathon efforts: Can distance runners keep safely apart?

Runners are low-risk, says a top immunologist, but 25,000 runners? That's a problem

Wed, May 13, 2020, 07:00

Ian O'Riordan



Two joggers run along the quays in Dublin city centre. Photo: Tom Honan/The Irish Times

Distance runners moving at any reasonable pace present no significant risk of spreading Covid-19. The problem, according to Prof Kingston Mills, is, say,

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Coronavirus: PSNI investigate possible breaches at GAA game

21 September



Crowds came onto the pitch after Dungannon Clarkes won their first Tyrone Football title in 64 years

COVID-19 Risks: Athletes - training

Individual training
No risk



2-3 athletes training:
Very low risk



Small groups outdoor:
Low risk



Changing rooms, public transport:
Higher risk



COVID-19 risks: Athletics competitions

**Elite marathon
no spectators:
low risk**



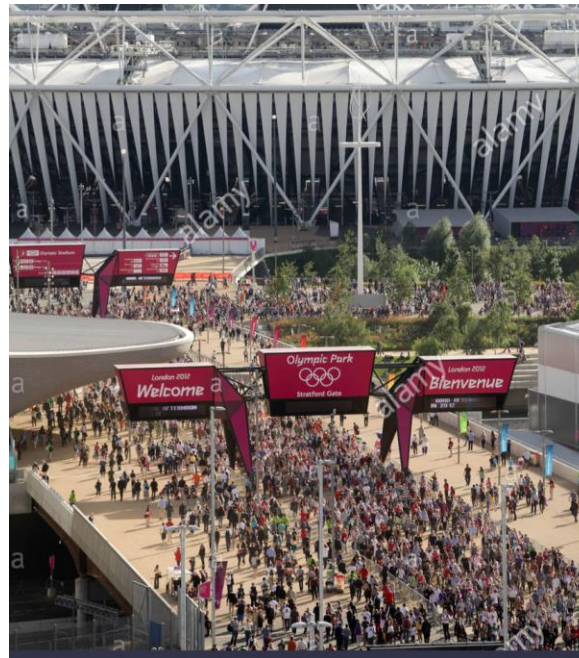
**Elite T&F
no spectators:
low risk**



**Mass participation events with spectators:
High risk**



COVID-19: spectators, coaches, officials, press and travel to athletic events: medium-high risk



European Indoor Athletics championships

Torun Poland 5-7 March 2021

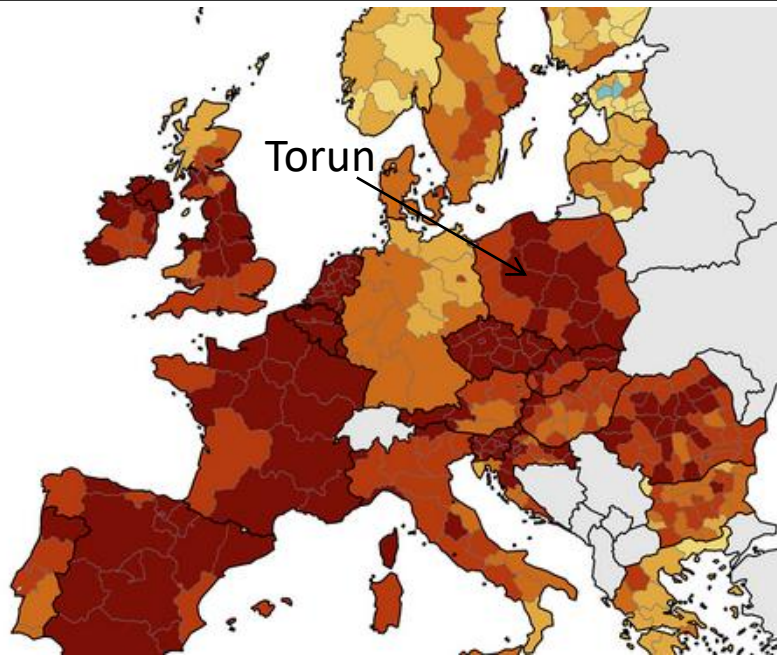


Poland announces new measures as Covid-19 cases rise

Updated / Saturday, 10 Oct 2020 14:33



Health workers carry out Covid-19 tests in Krakow



Measures to reduce risks for athletes, officials and organizers

Athletes, coaches, officials, press

- Testing 5 and 1 day before competition
- Testing before and on arrival from international travel
- Social distancing (>2M) where possible
- Compulsory masks wearing, except athletes while competing
- Avoid public transport
- Avoid changing rooms – change at home or in hotel room
- Avoid /limit athletes' time in indoor holding rooms

Spectators

- Control entry and exit of spectators
- Distanced seating arrangement
- Compulsory masks wearing
- Test all spectators if rapid testing available

