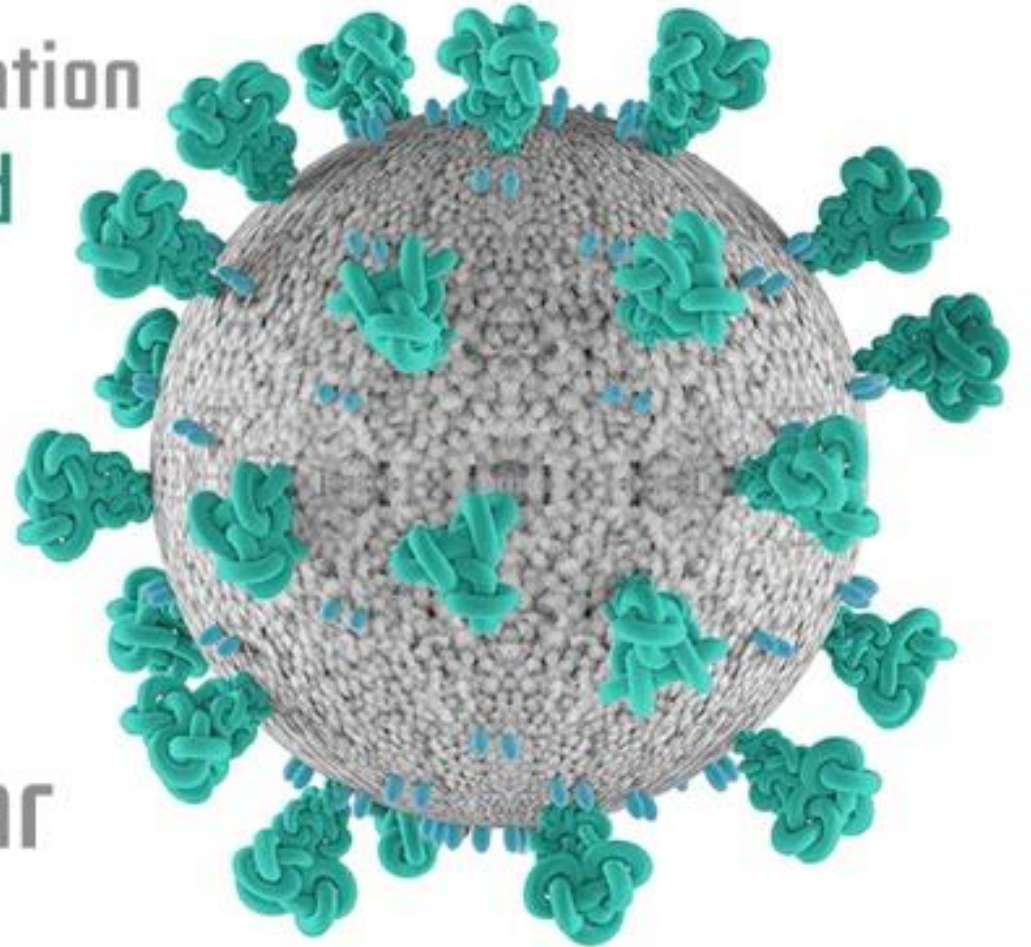


# THE EUROPEAN DIRECTORATE FOR THE QUALITY OF MEDICINES & HEALTHCARE (EDQM)



28 April 2020

Tissue donation  
from deceased  
donors during  
**COVID19**  
pandemic  
Webinar



# Agenda

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15:00-15:05 **Opening Remarks & Introduction**, Susanne Keitel, Director EDQM, and Laurent Mallet, Head of Department of Biological Standardisation, OMCL Network & HealthCare (DBO)

15:05-15:15 **Introduction by the Chairs**

15:15-16:05 **Experiences from tissue establishments in different countries**

15:15-15:25 Eliana Porta, Centro Nazionale Trapianti, Italy

15:25-15:35 Isabelle Martinache, Agence de la Biomédecine, France

15:35-15:45 Ralf Reinhard Tönjes, Paul Ehrlich Institute, and Martin Börgel, Deutsche Gesellschaft für Gewebetransplantation, Germany

15:45-15:55 Jorge Gayoso, Organización Nacional de Trasplantes, and Anna Vilarrodona, Banc de Sang i Teixits, Spain

15:55-16:05 Kyle Bennett, National Health Services Blood and Transplant, United Kingdom

16:05-16:30 **Questions & Answers**

16:30-16:45 **Risk of transmission through tissues from deceased donors and testing practices**, Dragoslav Domanovic, European Centre for Disease Prevention and Control (ECDC)

16:45-17:20 **Open Discussion**

17:20-17:30 **Conclusions & Closing Remarks**

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# Welcome Address

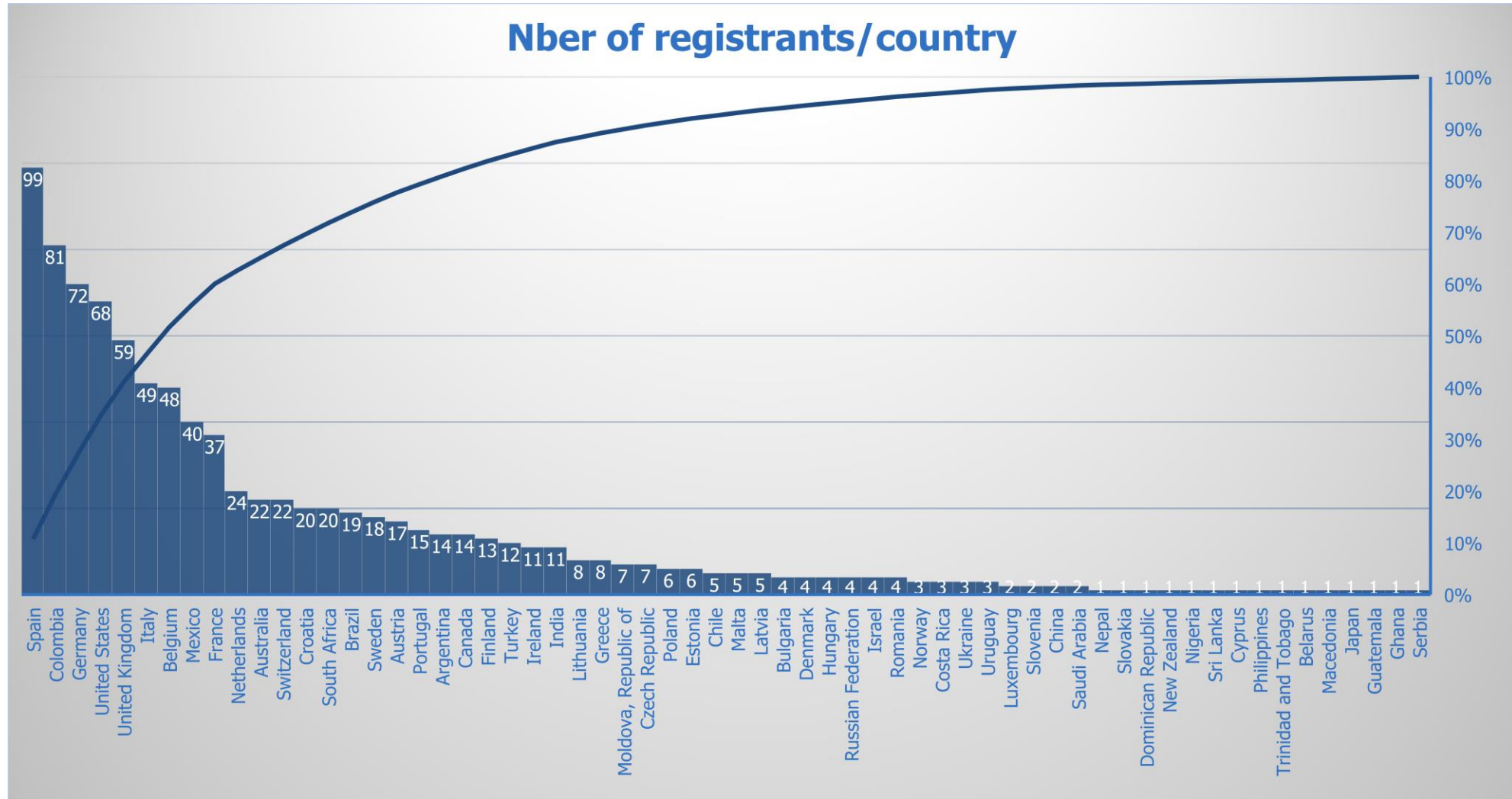
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Dr Susanne Keitel  
Director of the EDQM,  
Council of Europe





# Number of registrants by country



# Welcome Address

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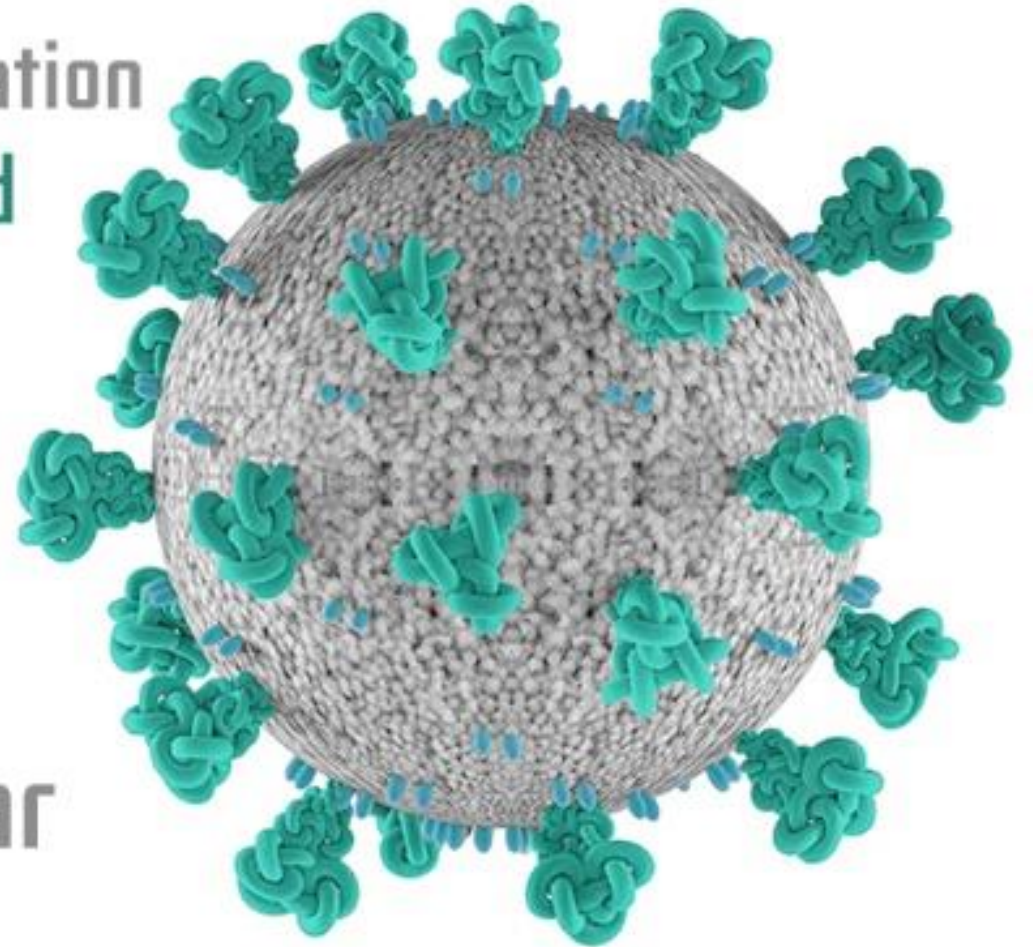
Dr Laurent Mallet

Head of Department of Biological  
Standardisation, OMCL Network & HealthCare,  
EDQM, Council of Europe



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from deceased  
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pandemic  
Webinar







# Akila CHANDRASEKAR

Co-Chair European Committee on Organ  
Transplantation  
Co-Chair Guide to the Quality and Safety  
of Tissues and Cells

**JPAC** Joint United Kingdom (UK) Blood Transfusion and Tissue  
Transplantation Services Professional Advisory Committee



# Introduction

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- **Substance of Human Origin (SoHO) : Blood, Organs, Tissues or Cells:**
  - Many years of clinical use
  - There is always concern about risk of infection transmission (TTI) and consequences to the recipients
- **Tissue Establishments strive to make them as safe as possible**
  - Donor selection
  - Testing ( for known TTI)
  - Processing ( including sterilisation) & Storage
  - Monitoring
- **Unknown Infections : New Infection or New Territory** (geographical spread)



# New or Emerging Infections

- **Monitor: Horizon Scanning – National & International**

World Health Organization (WHO)

Centers for Disease Control and Prevention (CDC)

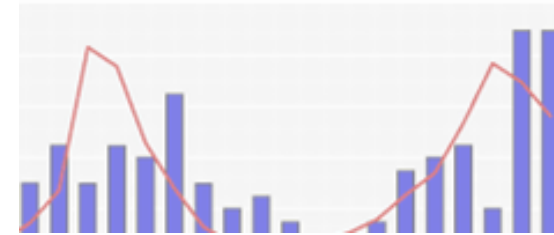
European Centre for Disease Control (ECDC)

EU Rapid Alert System : Eurosurveillance

European Infectious Diseases (EID) Monitor group of the European Blood Alliance (EBA)

Public Health Authorities

Competent Authorities Alerts



- **Examples:**

SARS : (2002-2003), H1N1 ( 2009-2010),

Ebola ( 2014-2016, 2019), Zika ( 2015-2016)

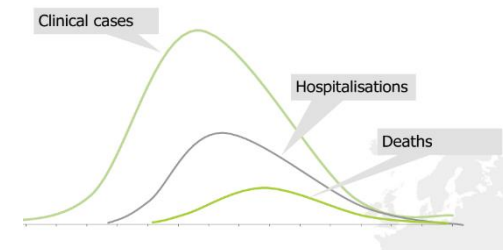


- **Actions**

Exclude donors with travel history/symptoms,

Exclude contacts

Pandemic plan



# SARS CoV 2 Outbreak- What is different?

New Strain Corona virus - SARS Cov 2 (virus) – COVID 19 ( infection)

## • **Timeline :**

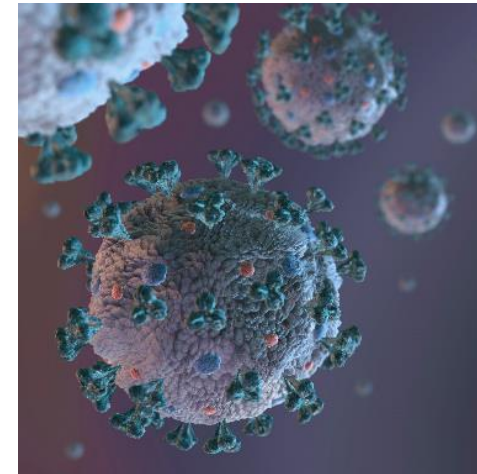
- ? Nov/ Dec 2019 : first reported in China
- January 2020 : first Report in Europe
- Feb- March 2020 : Europe epicentre (with cases in China declining)
- 11<sup>th</sup> March 2020 : WHO declared pandemic- Global spread

## • **Challenges to tissue establishments:**

- Rapid spread overwhelming healthcare system in Europe
- Pressure on intensive care beds, cancellation on planned surgical procedures
- Social distancing/lock down
- ? Challenges in donor selection with community spread/ testing

## • **Guidance & Support**

- Local : NHSBT Position statement/Risk Assessment
- National : JPAC (UK)
- European : ECDC
- International ( Scientific Associations)





# Jacinto SÁNCHEZ

Co-Chair Guide to the Quality and  
Safety of Tissues and Cells  
President European Association of  
Tissue and Cell Banks





# SARS CoV 2 Outbreak- Scientific Associations

You are here: / Home / Updates / COVID-19

## COVID-19



Published: 28 March 2020

EUROPEAN ASSOCIATION OF TISSUE AND CELL BANKS

It's important that tissue and cell bankers keep themselves updated on the latest developments relating to the ongoing COVID-19 pandemic. For the benefit of our members, and the wider tissue and cell banking community, the Board will ensure that the most relevant and up to date information relating to COVID-19 and tissue and cell banking is available here.

This page will be updated regularly as further information and guidance become available. If you have any information that you think should be added to this page, please send it to the EATCB office at [office@eatcb.eu](mailto:office@eatcb.eu)

## COVID-19 Update

Bulletin 20-10

April 2, 2020



## COVID-19 AND BLOOD ESTABLISHMENTS



### ALERT UP-DATE: Coronavirus (COVID-2019) and Ocular Tissue Donation.



EUROPEAN BLOOD ALLIANCE

## COVID-19 and BMT



European Society for Blood and Marrow Transplantation

## ESHRE COVID-19 working group

In view of the rapidly growing number of reports and the impact of the COVID-19 coronavirus on public health, ESHRE has formed a specialist working group to keep track of bibliography and published scientific reports relevant to reproductive medicine, pregnancy and newborns.



# SARS CoV 2 Outbreak- Challenges to tissue establishments

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- **Donor evaluation / Safety of Recipients:**

- No known transmission from donor to recipient through Transfusion or Transplant
- Period of viraemia – not known
- Immunosuppressed recipients: and increased risk?

- **Safety of staff in TE and procurement team:**

- Transmission through respiratory droplets, contact, faecal/oral route, ? Aerosol
- Staff absence/availability – particularly small tissue establishments

- **Sufficiency:**

- Several unknowns – asymptomatic infection in donors
- Is testing required/ what test/when to test
- Decline in demand for planned procedures

- It is highly likely experiences in tissue establishments vary- and the purpose of this webinar is to learn from each other

# Speakers

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- Eliana Porta : Italy
  - Isabelle Martinache : France
  - Ralf Reinhard Tönjes, Martin Börgel : Germany
  - Jorge Gayoso, Anna Vilarrodona : Spain
  - Kyle Bennett : United Kingdom
- 
- Dragoslav Domanovic : European Centre for Disease Prevention and Control (ECDC)



# ITALY

## Eliana PORTA



Centro Nazionale Trapianti





# General situation in the country

## Impact of COVID-19 on healthcare activity in general and on tissue donation activity in particular

On April 24th: 192.994 total cases, 25.969 deaths on a population of 60.431.283

Re-organisaton of many departments to face the epidemic

Overload of the Intensive Care Units

-23,5% organ donors compared to the same period of 2019 (Feb 27th - Apr 16th)

- We observed a significantly lower opposition rate.
- No relevant decrease in the number of donors for skin, heart valves, vessels and musculoskeletal tissue compared with the first quarter of 2019 but a reduction in March 2020 is expected, the same way as it happened with corneas (50% of corneas retrieved compared to 2019).
- Such a decrease is expected to continue for as long as the emergency goes on.
- A relevant reduction of living donations has been observed.

# Situation of tissue donation from deceased donors

---

In addition to the usual selection criteria, since March 3rd:

## ➤ **Deceased tissue donor**

- ❖ Oropharyngeal or nasopharyngeal swab taken within 24 hours from donor death on all donors notified in all Italian regions.
- ❖ The test results must be available before the tissues are released
- ❖ If positive, donor must be deferred.

As of April 22nd: 9 actual donors were found positive.

# Precautionary measures for tissue procurement

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- There are no specific recommendations at national level.
- Usual procedures (protective clothing, procurement techniques) are considered adequate to face the risk of contamination of the staff; even if some initial concern had been expressed.
- Many tissue establishments performed some training on PPE and the measures aimed at reducing the transmission of the disease to the personnel involved in procurement activities.

# Precautionary measures for tissue processing

---

➤ There are no specific recommendations at national level.

Taking into account:

- Decontaminating procedures put in place during transportation and processing;
- The low probability to find the virus in the retrieved tissues;
- The unlikely occurrence of aerosols/droplets during processing;
- Clothing that is required during processing (for all tissues, except for corneas, a GMP class A environment with a class B background is required – for corneas, clothing requirements include a surgical mask, goggles, double gloves, long-sleeved water-resistant gown).



# Availability of personnel in tissue establishments

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- No specific measures for tissue establishment personnel have been introduced.
- In Italy, tissue establishments are inside public hospitals and all countermeasures aimed at reducing the transmission of the disease are applied to anyone entering healthcare facilities.
- Administrative staff from tissue establishments are working from home, if possible.
- For people working in the laboratories, rules on correct clothing and distancing (as recommended nationally following ECDC indications) are respected.
- Tissue establishments with high activity and high number of personnel are evaluating a reorganisation of the activities, introducing working shifts.
- The risk of a reduction in the availability of the personnel due to COVID is real, but at the moment the number of personnel in tissue establishments guarantees the continuity of the activity.

# Clinical application of tissues from deceased donors

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- There has been a decrease in the demand of corneas, because of the provision given nationally to postpone all non-urgent surgical operations.

(March 2020: 33% less of cornea transplantations than on March 2019, but 80% less in the last two weeks).

- CNT has recommended that hospitals capable of doing so maintain their cornea transplant programmes
- For all other tissues, a less relevant reduction in transplantation activity has been observed and no difficulties in transportation have been reported.

# Provisions to control tissue availability

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- No specific provisions for tissue availability were made:
  - Tissue procurement is going on with no significant reduction.
  - There is no reduction in the stocks, for all tissues that can be stored for long.
  - The decrease in the procurement of corneas causes some concern, as far as the post-epidemic phase is concerned, and CNT together with the Eye Banks and the regional centres is defining measures to limit the problem.
  - At the moment, there is a surplus of corneas that is being managed at CNT level.
  - A good network is in place to face an emergency in skin demand or the request of 'rare' tissues (heart valves with unusual size).



**FRANCE**

Isabelle MARTINACHE



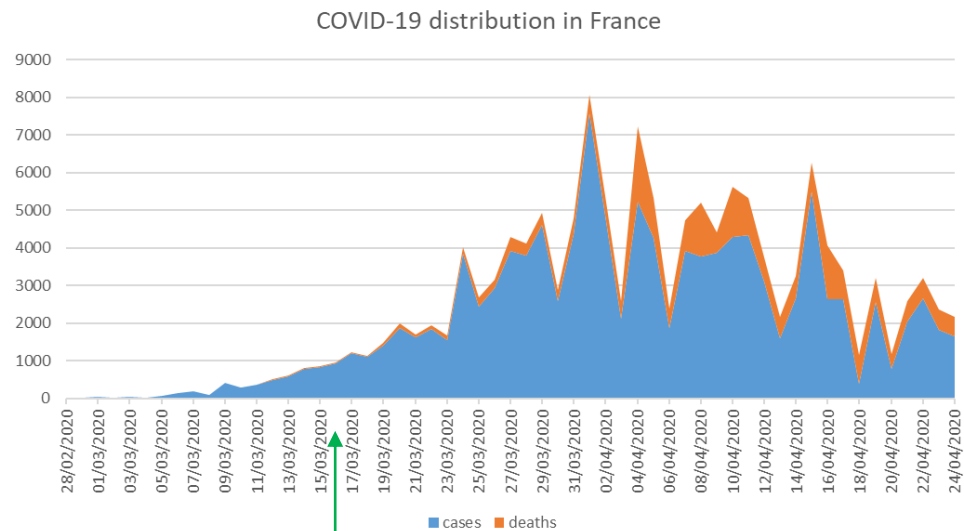


# General situation in the country

## COVID 19 situation

66 987 244 Inhabitants  
 120 804 Cases  
 21856 Deaths

Situation 24/04/2020



*containment*

## Tissue donation activity

Between 16/03/2020 and 23/04/2020

Deceased donors	Bones	Skin	Vessels	Valves	Cornea	
O&T	48	4	5	26	13	23
T	22	0	1	0	0	22
<b>total</b>	<b>70</b>	<b>4</b>	<b>6</b>	<b>26</b>	<b>13</b>	<b>45</b>

Source : CRISTAL database

# Situation as regards tissue donation from deceased donors

## Donor evaluation : investigation & questionnaire update

- Absence of symptoms suggestive of SARS-CoV-2 infection < 28 days.
  - Influenza Syndrome (headache, arthralgia and fever)
  - Respiratory infection (fever, cough, shortness of breath)
  - Digestive symptoms (vomiting, diarrhea, loss of taste or smell)
  - Eye symptoms (conjunctivitis)
- Absence for contact with a person at COVID risks <28 days

## Donor testing update

- Systematic COVID testing on OTC donors
  - SARS-CoV-2 by nose/throat swab are accepted with a negative nucleic acid testing (NAT) result.



# Precautionary measures for tissue procurement

## COVID **Neg** donor : Standard protocols & protective clothing

- Cleaning of working surfaces, appropriate and effective disinfectant, scrubbing as for surgery, procurement under aseptic conditions
- Sterile gown, sterile gloves, protective mask

## If **unknown** : Complementary recommendations



- Waterproof overshirt + single-use plastic apron.
- Single-use FFP2 mask
- Protective glasses.
- Compliance with the undressing procedure.
- Particular attention to hand hygiene each time gloves are removed /at the end of the handling.

# Precautionary measures for tissue processing

## Living donors

- Nasopharyngeal tests vs donor risk assessment interview and quarantine only :  
→ *under evaluation*

## Organ donors

- Systematic nasopharyngeal tests results before procurement : COVID – donors only

## Deceased Tissue donors

- Systematic nasopharyngeal tests
- At the time of procurement and as close to death as possible within 24
- Under storage and transport conditions validated
- Results :
  - If negative before procurement : ok
  - If positive : no procurement
  - If ongoing : procurement and quarantine awaiting results prior to processing



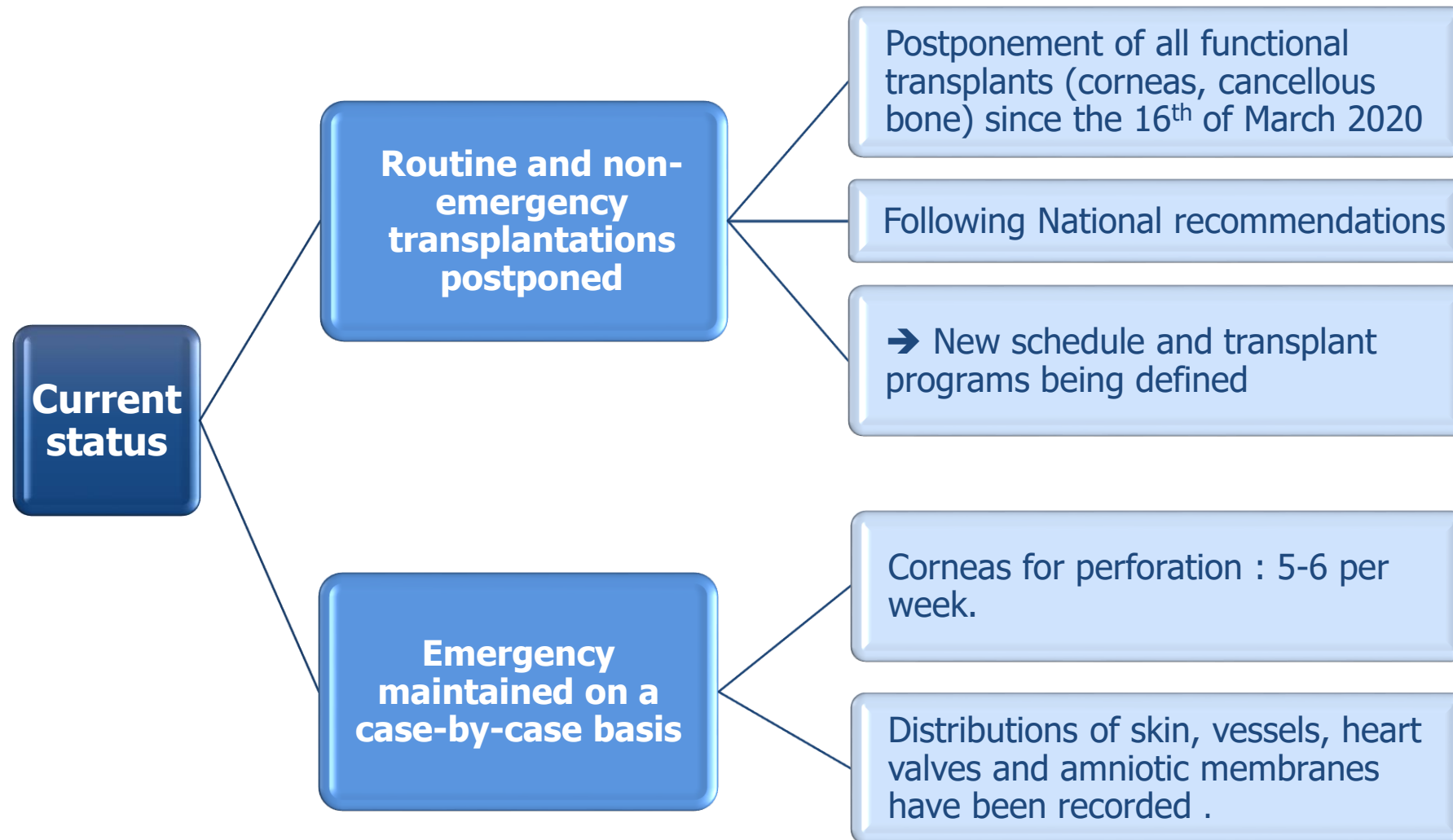
**Processing tissues COVID neg under usual conditions**

# Availability of personnel in tissue establishments

Problems	Social distancing	Contingency planning in case of infected personnel
<p><b>Cessation of activity</b> (monotissue bank) technical unemployment</p>	<p>In line with recommendation &amp; adapted to the size of the team and the premises</p>	<p>Quarantine of 14days after recovery in accordance with medical prescription</p>
<p><b>Reduced activity &amp; staff</b> in line with containment recommendation promoting homeworking &amp; with due respect of emergency needs:</p> <ul style="list-style-type: none"> <li>- Half team</li> <li>- Binomes (responsible/technician)</li> </ul> <p>Partial activity</p>	<ul style="list-style-type: none"> <li>- mask mandatory in the presence of other persons</li> <li>- separation of office workstations,</li> <li>- hydroalcoholic gels available</li> <li>- wearing of gloves,</li> <li>- 1m physical distance,</li> <li>- disinfection of containers coming from outside,</li> <li>- regular decontamination of workstations.</li> </ul>	<p>If infected personnel, request for testing of all personnel who have been in contact.</p> <p>If staff suspected of infection but not tested, quarantine for a minimum of 14 days and adjust according to symptomatology.</p>



# Clinical application of tissues from deceased donors



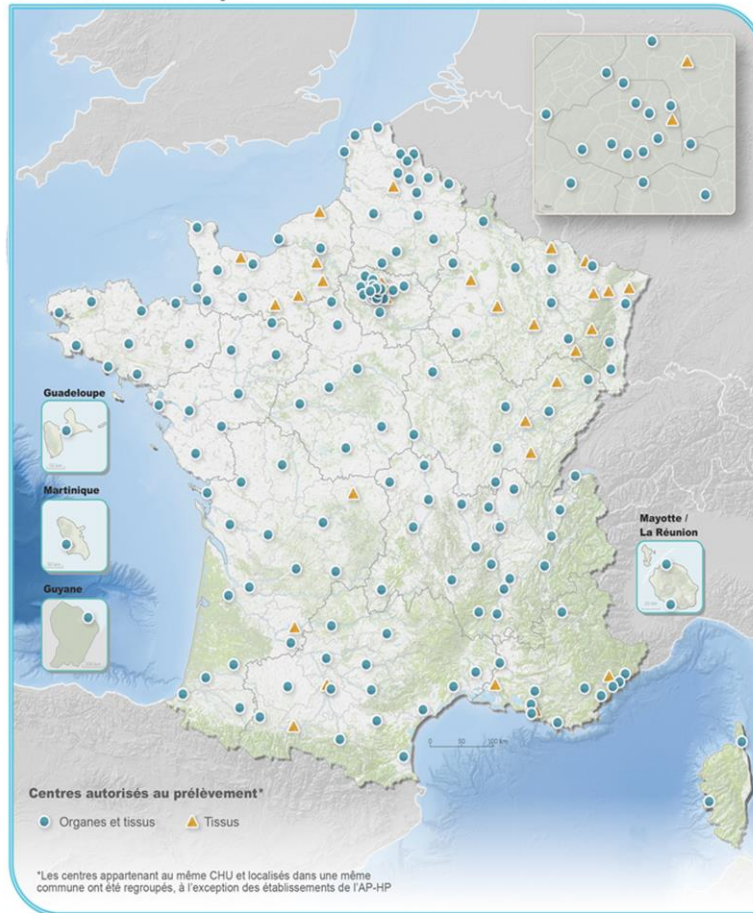
# Provisions to control tissue availability

## Monthly national inventory (tissue from deceased donor) 16 TE/21

Etat des stocks		Nombre de tissus conservés <u>validés</u> , en stock en fin de mois				DROIT	GAUCHE	
Peau	cm <sup>2</sup>	337681		Tissus osteoligamentaires	Femur	entier	5	9
						diaphyse	7	8
Valves cardiaques	pulmonaire Ø ≤ 17 mm	5				épiphyse supérieure	10	14
	pulmonaire Ø 18-24mm	35				épiphyse inférieure	11	6
	pulmonaire Ø ≥ 25 mm	54			rotule	1	0	
	aortique	180			Tibia	entier	13	12
Vaisseaux	carrefour (bifurcation aorto bi-iliaque)	35				diaphyse	1	0
	artère fémorale (axe ilio-femoro-poplité)	145				épiphyse sup	5	8
	artère thoracique	81			epiphyse inf	4	3	
	veine	2			Humérus	entier	16	8
	.....	34				épiphyse inf	0	1
					Cubitus	0	0	
					Hemi bassin	1	0	
					Appareil extenseur complet (avec ou sans patella)		14	7
					Tendon	Achille	13	2
						ischio-jambiers (DIDT)	9	1
						rotulien	24	1
						quadriceps	15	0
						tibial (ant/postérieur)	18	1
					fascia-lata	137	1	
					Ménisque	interne	44	0
						externe	9	14

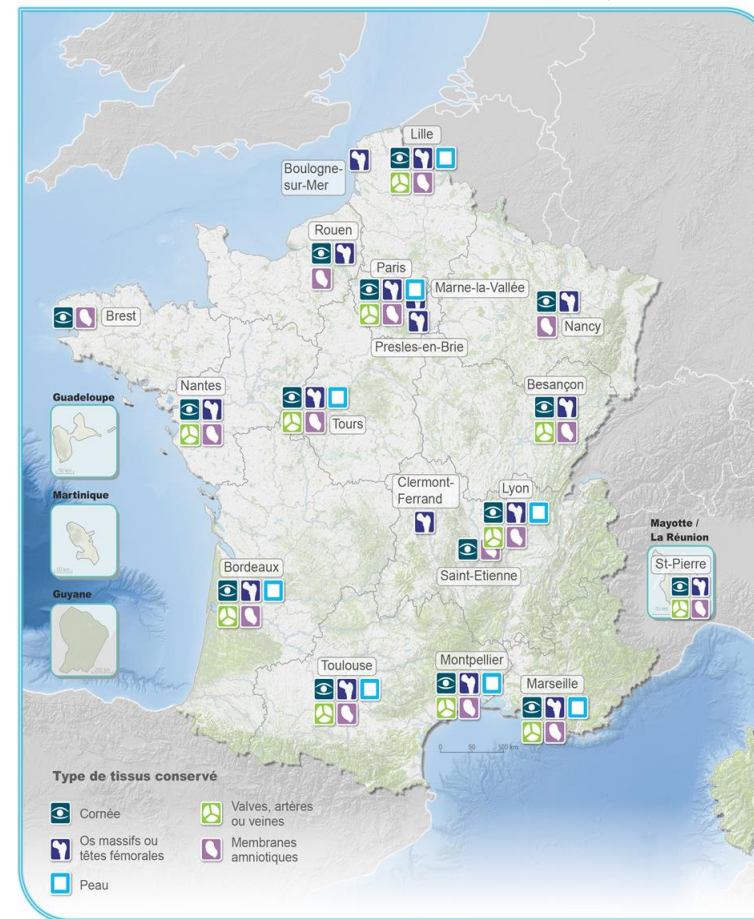
- Very low cornea stocks ⇔ emergency stock (<1 to 3-4 corneas in organoculture/TE + a larger one at -40°C)
- Other tissues : low number of entries ⇔ low number of exits

Sites autorisés au prélèvement au 31 décembre 2018



Sources : Agence de la biomédecine 2019, CIAT-CSI (SRTM <http://srtm.csi.cglar.org>) 2010

French Tissue establishments authorised on december 31, 2018



Sources : Agence de la biomédecine 2019, CIAT-CSI (SRTM <http://srtm.csi.cglar.org>) 2010

*Thank you for your attention*



# GERMANY

Ralf Reinhard TÖNJES

Paul-Ehrlich-Institut 



Martin BÖRGEL

**DGFG**  
DEUTSCHE GESELLSCHAFT FÜR  
GEWEBETRANSPLANTATION  
GEMEINNÜTZIGE GESELLSCHAFT mbH

# General situation in the country (1)

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## How safe are tissue preparations in the context of SARS-CoV-2?

- A transmission of respiratory viruses by transplantation of human tissues has not been described yet.
- As there is currently no evidence that SARS-CoV-2 can be transmitted through the transplantation of tissue preparations, the PEI proposes the following precautionary measures:
  1. Exclusion of potential tissue donors upon contact with people with confirmed SARS-CoV-2 infection within 14 days before the donation.
  2. Exclusion of potential tissue donors with confirmed SARS-CoV-2 infection within 14 days after completion of the recovery.
- Tissue preparations that undergo a validated pathogen reduction process for enveloped viruses are not affected by these precautionary risk-minimizing measures.

Source: <https://www.pei.de/EN/newsroom/dossier/coronavirus/coronavirus-node.html>

# General situation in the country (2)

Confirmed cases	Deaths	Deaths (%)	Recovered
148,046 (+ 2,352*)	5,094 (+215*)	3.4%	ca. 103,300**

– Changes since the last report are marked *blue* in the text –

\*Change from previous day; \*\*Estimate

## Summary (as of 23/04/2020, 12:00 AM)

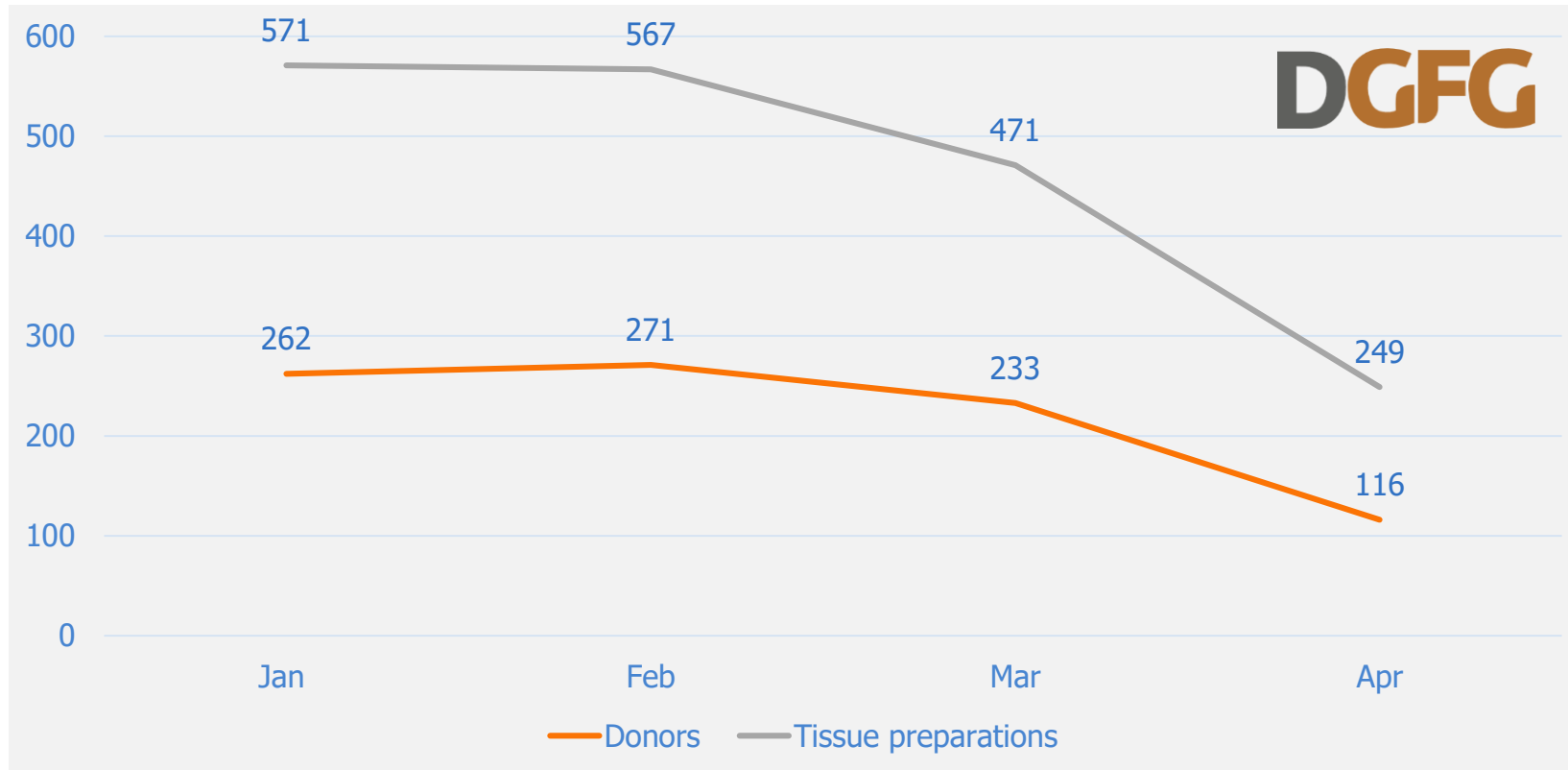
- In total, **148,046** COVID-19 cases and **5,094** deaths due to COVID-19 have been electronically reported to the Robert Koch Institute in Germany.
- The incidence (cases per 100,000) of COVID-19 is highest in Bavaria (**301**), Baden-Wuerttemberg (**266**), Saarland (**242**) and Hamburg (**233**).
- Most cases (67%) are between 15 and 59 years old; men (48%) and women (52%) are almost equally affected.
- 87% of deaths, but only 19% of all cases, occurred in persons aged 70 years or older.
- COVID-19 related outbreaks in nursing homes and hospitals continue to be reported. In some of these outbreaks, the number of deaths is relatively high.

Source: [Daily situation Report RKI, 23.04.2020](#)

In Germany, approximately 0.18% of the population (83 million) is or was infected with SARS-CoV-2; reproductive number  $R=0.9$  (23.04.2020)



# General situation in the country: Tissue donation



Since the beginning of the COVID-19 pandemic, the number of donors and retrieved tissue in the DGFG network has approximately decreased by half, (Source: DGFG, 22.04.2020).



# Situation as regards tissue donation from deceased donors (1)

## Source of information for German tissue establishments:

Paul-Ehrlich-Institute (PEI), Robert-Koch-Institute (RKI), European Eye Bank Association (EEBA), European Association of Cell and Tissue Banks (EACTB), Global Alliance of Eye Bank Associations (GAEBA), German Ophthalmologist Society (DOG) – section tissue, European Centre for Disease Prevention and Control (ECDC)



# Situation as regards tissue donation from deceased donors (2)

## Exclusion of potential tissue donors...

Paul-Ehrlich-Institut 

**DGFG**

upon contact with people with confirmed or suspected SARS-CoV-2 infection within 14 days before the donation

with confirmed SARS-CoV-2 infection within 14 days after completion of the recovery (negative PCR) or 28 days free of symptoms

with following symptoms  
unexplained/unclarified pneumonia or respiratory infections, unexplained fever  
presence of an x-ray thorax with diagnosis "Covid-19 pneumonia cannot be excluded"

- Since every donor is thoroughly medically evaluated, the presence of several individual uncritical symptoms combined with background information may also lead to donor exclusion
- PCR-Testing of donor for SARS-CoV-2 not mandatory
- At current, other assays like testing for antibodies or tissue testing are not available or useful/valid at the moment

# Situation as regards tissue donation from deceased donors (3)

## Actual available tests for COVID-19:

- First tests for antibody detection are described
- **Gold standard: SARS-CoV-2-PCR**, only validated for respiratory specimens
- Current RKI advice for testing of patients using SARS-CoV-2-PCR (**no information** available for **testing deceased persons**):

ROBERT KOCH INSTITUT



„Testing is generally recommended for **symptomatic** individuals ... as well as in the context of **differential diagnosis**, if there is a **clinical suspicion** based on medical history, symptoms or findings compatible with a COVID-19 disease and a diagnosis for another disease is missing, which sufficiently explains the clinical picture.



**Due to the unclear significance of a negative result and in order to save test capacities, we generally advise against testing asymptomatic persons.**

*A negative PCR result does not completely rule out the possibility of infection with SARS-CoV-2. False-negative results cannot be ruled out, e.g. due to poor sample quality, improper transport or unfavourable timing (in relation to the course of the disease) of sample collection. ...*

*The **most suitable test material** depends on the **time of collection** during the course of the disease. In the **case of deep respiratory tract infections**, the testing of sample **material from the oro- and nasopharynx alone** is not suitable to exclude an infection, since in this phase of the disease only material from the lower respiratory tract or stool may be positive in the PCR."(RKI Website, 30.03.2020)*



## Conclusions for testing deceased donors:

- Since there is no re-testing possible for deceased donors, it would be **dangerous to rely on a single swab test** for COVID-19 risk assessment
- Due to the required invasive **smear technique**, the **retrieval staff** is exposed to a **significantly higher risk of infection**
- The **risk to transmit Covid-19 via corneal transplantation is very low** even in the case of a positive donor
- For evaluation of deceased tissue donors a **thorough risk assessment can be sufficient** if enough information about the donor is available
- If resources allow for the carrying out of a **SARS-CoV-2 PCR test** to give additional information (but still not 100% safe) this can be done, but should **not be mandatory**

# Precautionary measures for tissue procurement

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## Tissue procurement:

- **No specific requirements** for tissue procurement **regarding COVID-19 described**
  - All **previously known standards** for minimizing cross-contamination and for the protection of staff **continue to be complied** with, e.g.
    - ✓ Hand disinfection with alcohol-based disinfectants
    - ✓ Personal protective equipment: Face mask, gown, gloves, hood
    - ✓ Protective goggles for the eyes are recommended
    - ✓ Staff members have to be trained in the use of personal protective equipment and safe retrieval techniques
    - ✓ Protective clothing must be discarded after use
    - ✓ Covering of the retrieval area with sterile tissues
    - ✓ Decontamination of retrieval area with pvp-iodine
    - ✓ The procurement is performed with sterile instruments, direct contact with the donor should be avoided
- ! **Current challenges due to COVID-19:** Limited availability of hand disinfectants and face masks (which are required in shops and public transportation in Germany as of 27 April)

# Precautionary measures for tissue processing

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## Tissue processing:

- **No specific requirements** for tissue banks regarding COVID-19 described
  - **All previously known standards** for minimizing cross-contamination and for the protection of staff continue to **be complied** with, e.g.
    - ✓ All processing steps with open tissue must be performed in a laminar flow hood with background of class D
    - ✓ Protective clothing like face mask, gown, gloves
    - ✓ Protective clothing has to be discarded after use
    - ✓ Some tissue banks use reusable clothing that is safely reprocessed (with exception of gloves)
    - ✓ Regular disinfection of the work space with virucidal / limited virucidal disinfectants
    - ✓ To prevent cross-contamination, instruments must be changed after each donor
    - ✓ Biological waste is disposed of safely
- ! **Current challenges due to COVID-19:** Limited virucidal disinfectants and face masks

# Availability of personnel in tissue establishments

---



- Decrease of potential donors and recipients lead to a significant reduction in the working hours of the staff

- Staff members are told to work in home office if possible



- If home office is not possible: teams are half divided up, in the case that one team member is infected, the other team can be completed and may continue working

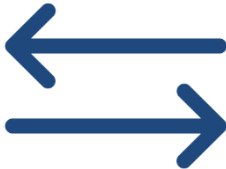


# Clinical application of tissues from deceased donors



•Cancellation of many elective surgeries lead for to a decreased demands for ocular tissue

•Current, many postponed surgeries are planned in the near future



•Due to reduced donation numbers during the last weeks an adequate transplant supply becomes difficult

• In Germany, so far there are no problems / limitations in the transportation of tissues



# Provisions to control tissue availability

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INFORMATION TO INCLUDE: Are any in place and for which tissues (e.g. live saving tissues such as heart valves, skin)

**For Germany, no provisions are taken or are planned up to now.**



**SPAIN**

Jorge GAYOSO

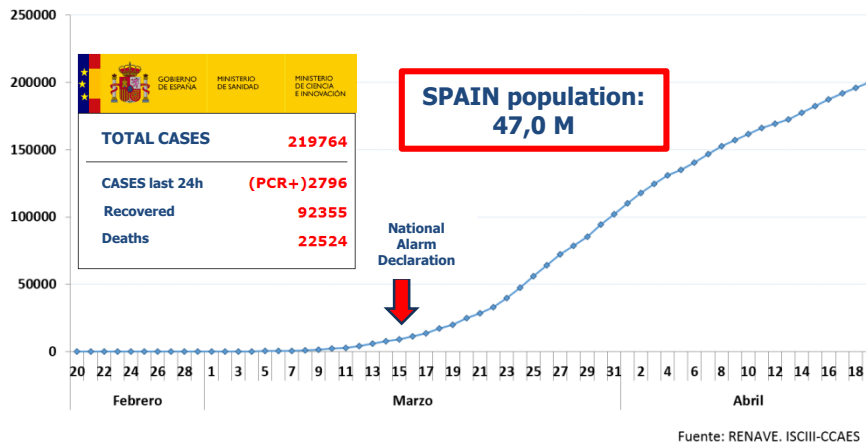


Anna VILARRODONA

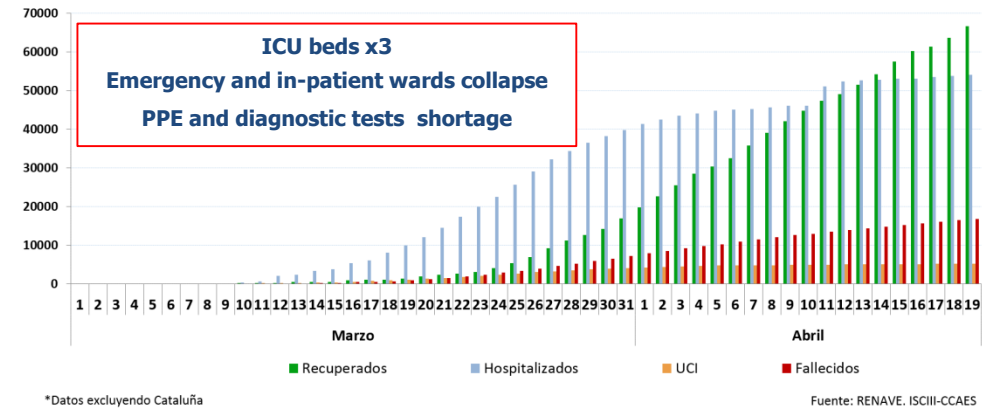


# General situation in the country

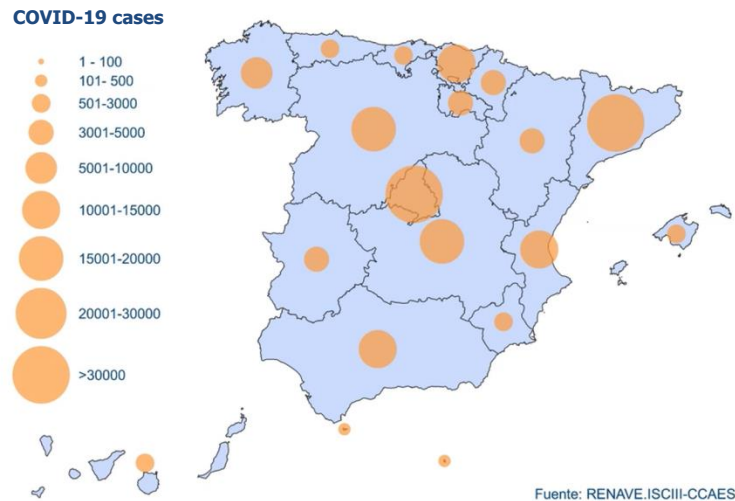
Cumulative-cases per notification date



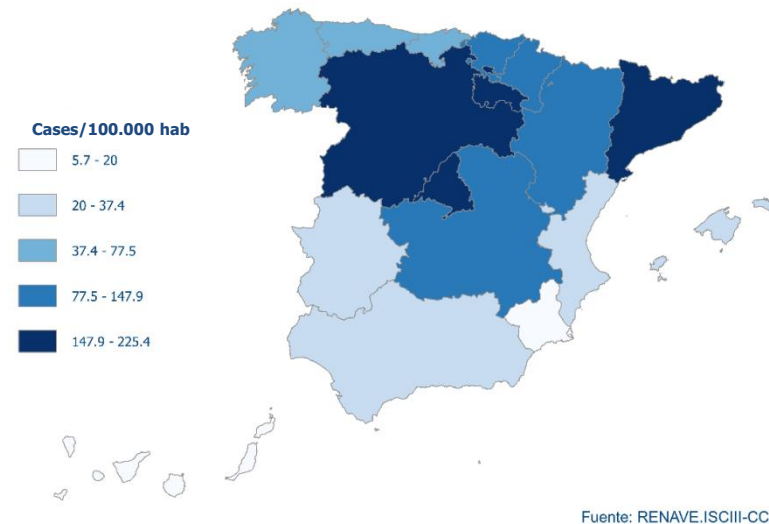
Clinical situation daily evolution



Total cases (24-APRIL-2020)

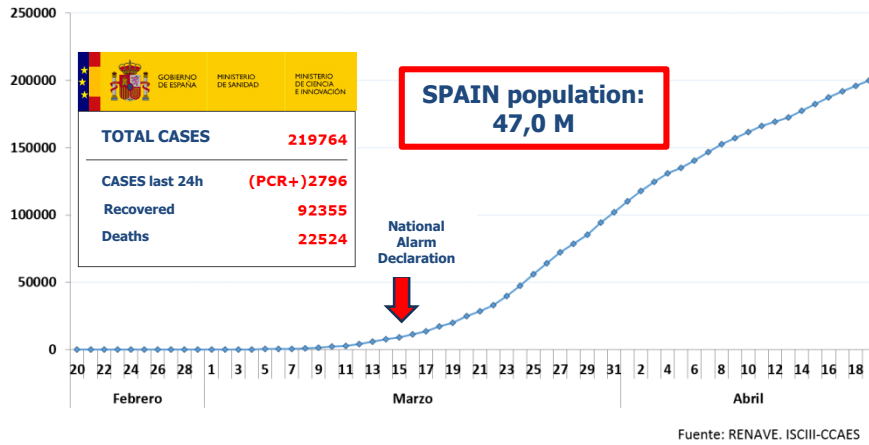


Cumulative incidence during last 14 days (24-APRIL-2020)

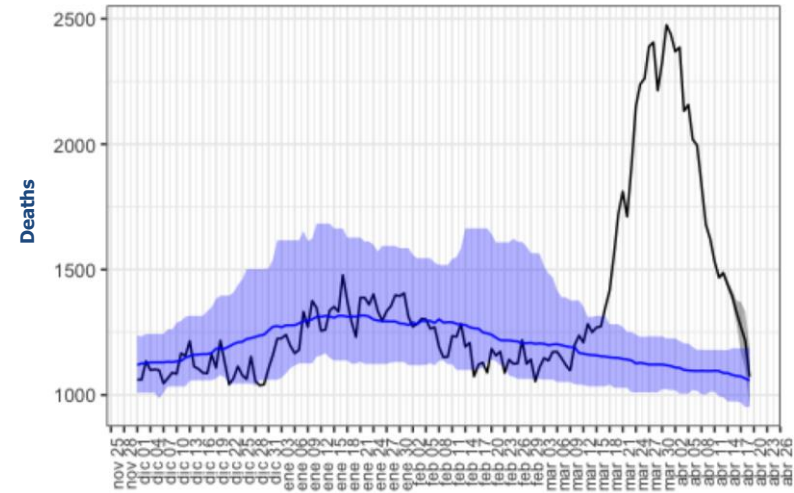


# General situation in the country

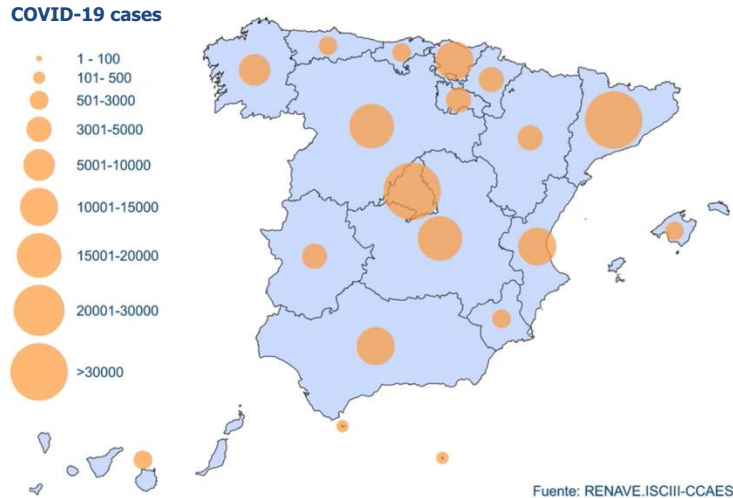
Cumulative-cases per notification date



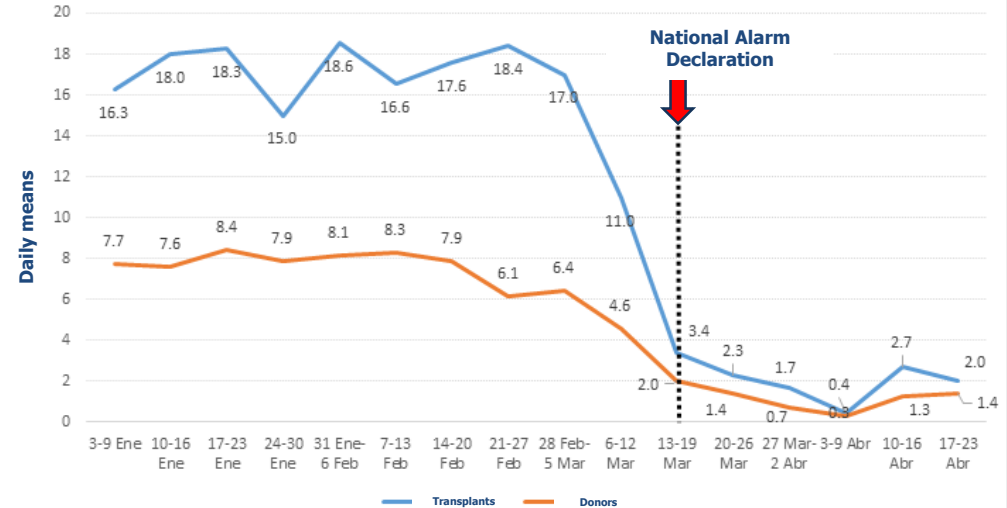
All causes mortality rate. SPAIN (24-APRIL-2020)



Total cases (24-APRIL-2020)



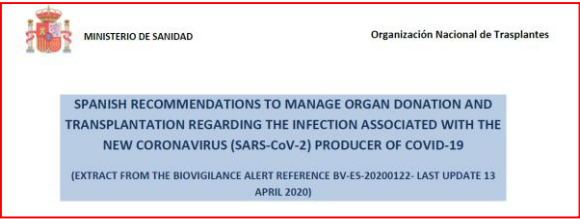
Deceased donors and transplantation. SPAIN (23-APRIL-2020)



# Situation as regards tissue donation from deceased donors



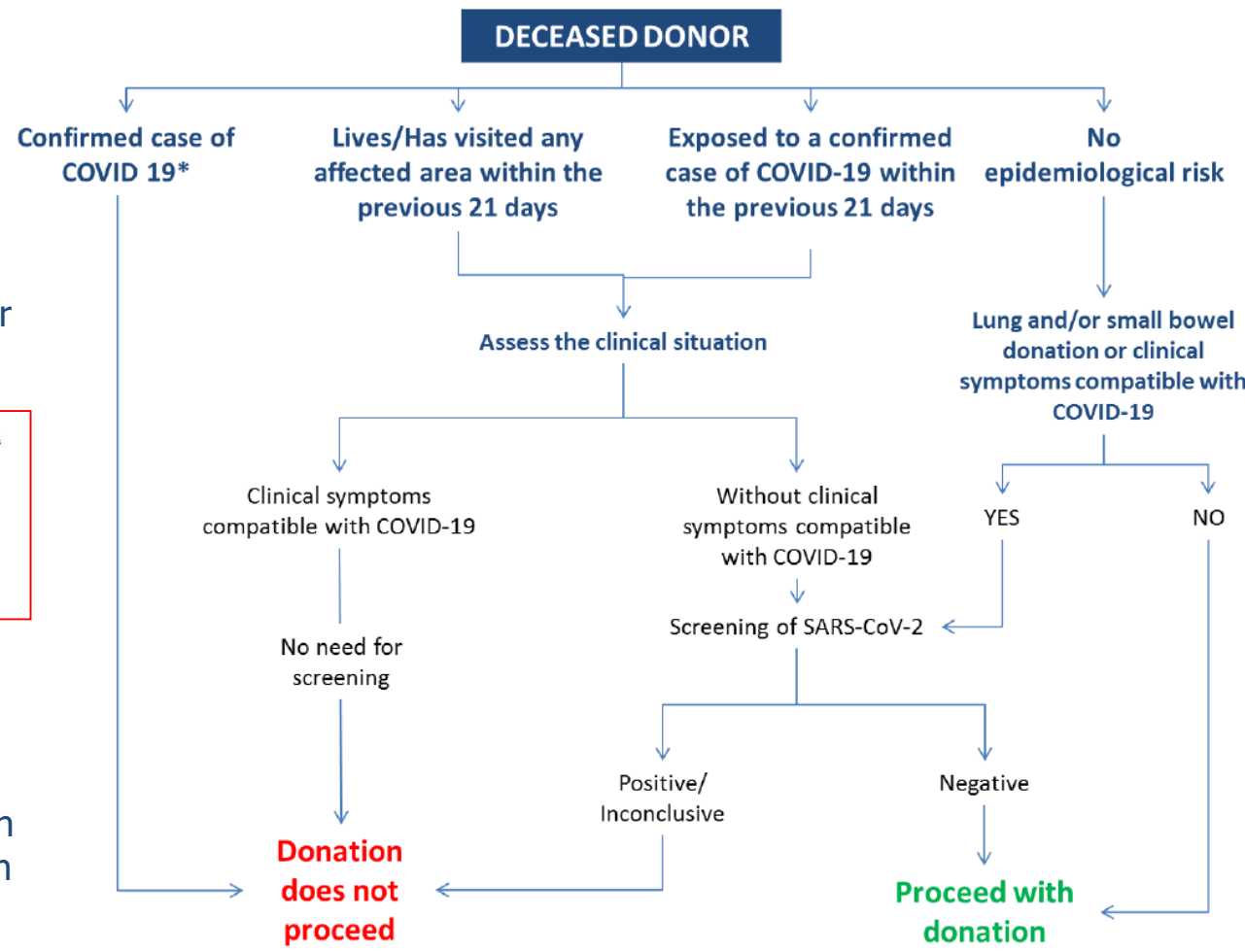
Weekly biovigilance report to our network from January 23th



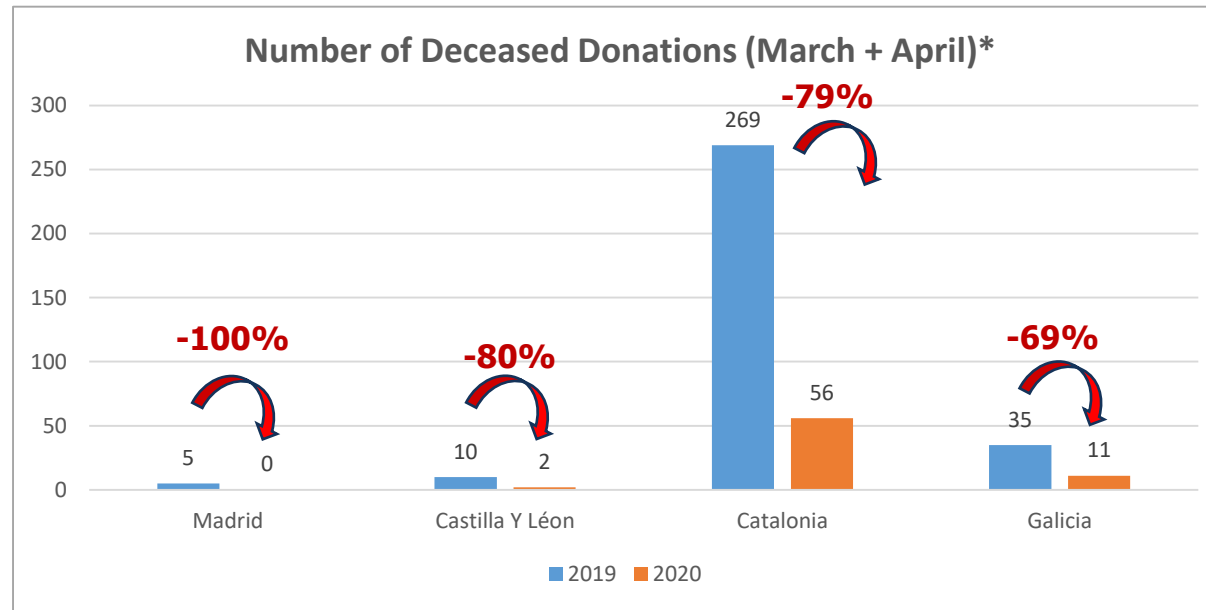
Screening strategy according to the epidemic scenario

RT-PCR test on BAS/BAL/ nasoph samples obtained <24h donation

## ALGORITHM TO FOLLOW FOR DECEASED DONATION



# Situation as regards tissue donation from deceased donors



## On the field:

- All National tissue establishments reported severe reduction of activities with deceased donors after the 2<sup>nd</sup> week of March
- Tissue establishments reported activities are mainly associated with living donors (Semen, cranial flaps, SED, breast milk, AM)
- The mandatory SARS-CoV-2 rRT-PCR tests were very limited and not always available to test potential donors (the situation seems to be improving)
- Transplant/Donor Coordinators were allocated to life saving tasks and not available to identify and evaluate potential donors
- ICUs and morgues were overwhelmed with COVID-19 patients



# Precautionary measures for tissue procurement

---

**Local Measures** (implemented by the tissue establishments): Adoption of new procurement SOPs based on risk assessments

- Additional protective garments for professionals involved in procurement procedures (PPE, face shields ..)
- Protection of donors' oral and nasal cavities during procurement procedures (BTB/BST)
- Limitation: Tissues from thorax will not be procured (BTB/BST).
- Extraordinary agreements with transport services and review their disinfection procedures (Leon)

## On the field:

- Shortage of PPEs
- Health Professionals were not available to perform procurement
- Operating theatres were not available

# Precautionary measures for tissue processing

## Local Measures (implemented by the TEs):

Adoption of new SOPs for procurement based on risk assessments:

- Additional disinfection of material introduced in the clean rooms (Alcohol 70%) (Balearic Islands)
- Processing of MSK tissues procured (and stored) before Dec 2019



## On the field:

- Shortage of PPEs
- Processing of tissues (other than MSK) has stopped almost completely

# Availability of personnel in tissue establishments

## National requirements:

- Presence of staff in tissue establishments was reduced due to sick leaves, self quarantine and lockdown rules;
- Home office for all non technical/non essential workers;

## Locally:

- Some staff from tissue establishment was relocated to other services in the hospitals



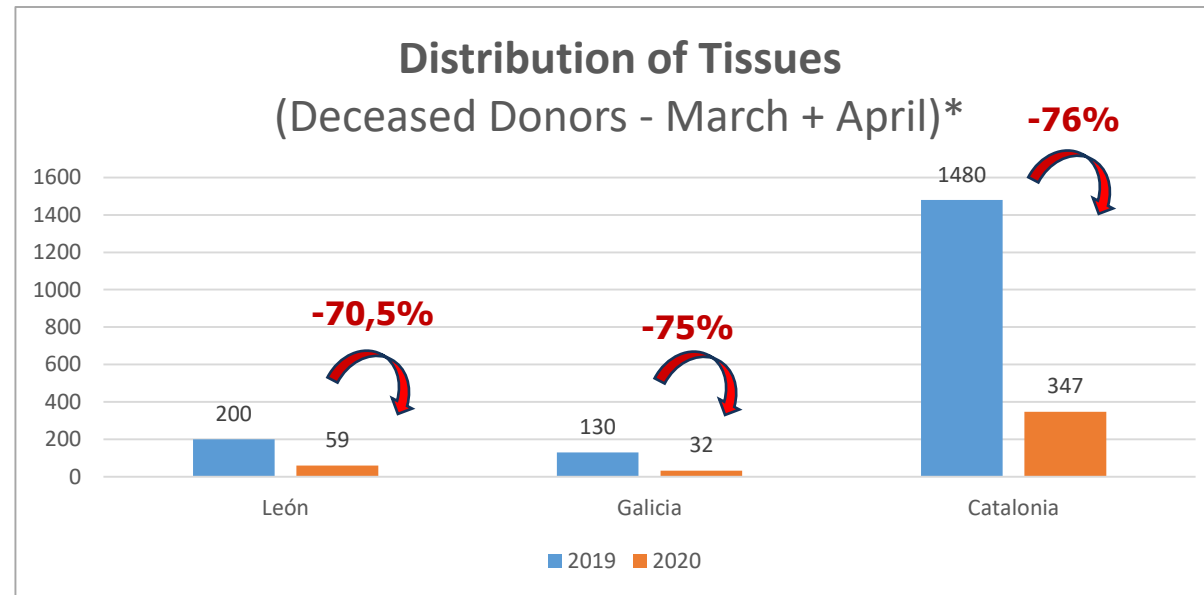
## On the field:

- The absence of staff (due to sick leave / national requirements) had very limited impact due to the significant decrease in the volume of the activities (procurement, processing and distribution were highly affected)

# Clinical application of tissues from deceased donors

## Clinical application at National Level:

- Elective surgeries were canceled
- Transport/distribution services seemed affected only between some countries (ex: Italy)



## On the field:

- All transplant/implant of tissues ceased, except for urgent procedures.
- Alternative therapies were used (ex: Serum Eye Drops to Amniotic Membrane Ext.)

# Provisions to control tissue availability

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- **Demand is expected to recover faster than donation:** tissue establishments foresee a **severe shortage of tissues with short shelf life** when regular surgical activities return to normal
- Stock of MSK tissues should not be affected, **if testing is available and new (validated) testing techniques are available soon**
- Guidelines for the **risk assessment/lookback for the tissues donated in the period before the declaration of emergency** – Value of testing antibodies?
- **Suspension of autopsy procedures** may have resulted in a loss of knowledge related with the real incidence of the disease, and presence of virus in the different tissues and organs
- New techniques for **viral inactivation** may play an important role in the future processing activities (ongoing research)
- **Financial impact** of the pandemic may result in difficulties for the sustainability of activities in the tissue establishments in the long term - **Collaboration Network between tissue establishments** will more valuable than ever.



# UNITED KINGDOM

Kyle BENNETT

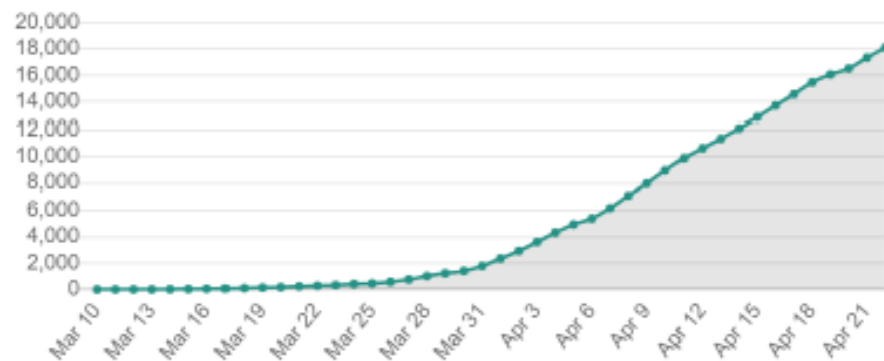


*Blood and Transplant*

# General situation in the country (on 23 April 2020)

**UK Population: 66.65 million**

Total Number of COVID-19 associated UK deaths  
in hospital by date reported = **18,100**



Daily Number of COVID-19 associated deaths  
in hospital by date reported = **759**



Nation	Total cases	Deaths
England	99,137	16,271
Northern Ireland	2,874	220
Scotland	9,038	985
Wales	8,124	624

Total Number of lab confirmed UK cases = **133,495**

Daily Number of lab confirmed UK cases = **4,451**

Data accurate as of 23<sup>rd</sup> April 2020 @ 09:00 (<https://coronavirus.data.gov.uk>)



# Situation as regards tissue donation from deceased donors

Respiratory viruses are not known to be transmitted via tissue allografts, Precautionary measures are being applied until the pathogenesis of this new Coronavirus is known

**Donor Selection:** Follow UK Joint Professional Advisory Committee (JPAC) Donor Selection Guidelines (DSG)

**23 Jan 2020 : New coronavirus specific entry** in DSG : **Travel related**

Initially **China** but extended in early Feb to **8 other countries including airport stop overs** and then in early March further extended to include **Italy**



Less than 21 days from a donor's return from a Coronavirus risk area or from the last contact with a person with Coronavirus infection . Less than three months since recovery from Coronavirus infection

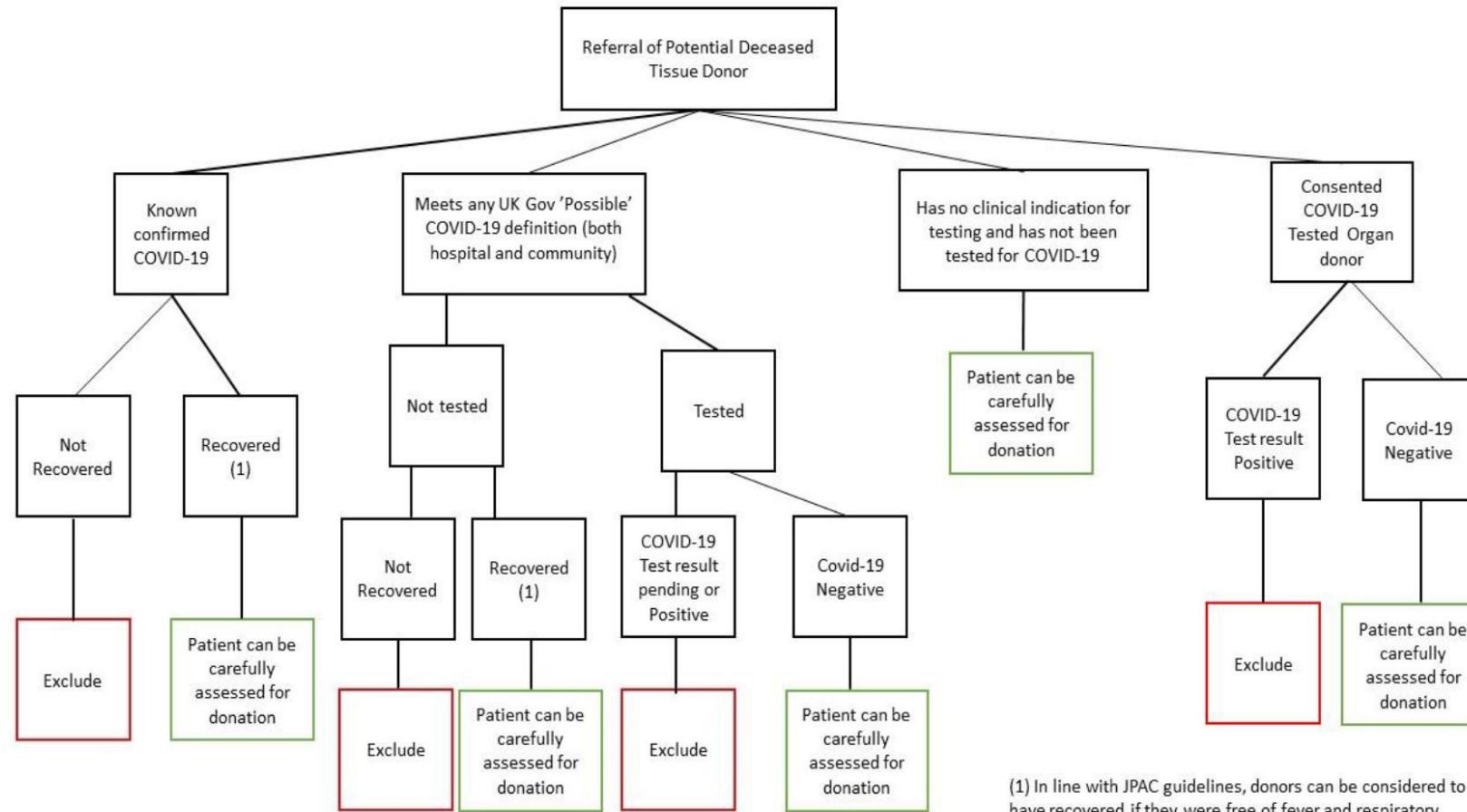
**23 March : No longer travel risk (UK is an affected country)** as increasing cases due to community spread in the UK

**Confirmed or suspected COVID-19 infection** not to be accepted until at least 14 days after resolution of symptoms . Similar restrictions are applied to potential donors who may have been in contact with a person with COVID-19

<https://www.transfusionguidelines.org/dsg/ctd/guidelines/coronavirus-infection-1>

Any donor who had **respiratory symptoms at the time of death not accepted** unless Covid-19 had been excluded after testing at the hospital

# NHSBT Tissue & Eye Services Donor Referral Flow Chart



(1) In line with JPAC guidelines, donors can be considered to have recovered if they were free of fever and respiratory symptoms for 14 days at the time of death

**NO routine testing:** Asymptomatic, undiagnosed donors with COVID-19 may be accepted for tissue donation: NHSBT Tissue & Eye Services has documented a Position Statement after risk assessment to *evaluate other steps that would inactivate/eliminate the SARS-CoV-2 in tissues*

# Precautionary measures for tissue procurement

- Detailed **risk assessment on tissue procurement** with input from H&S professionals, Tissue Bankers and Clinical Virologists.
- Guidance** from other sources such as the Association of Anatomical Pathology Technology (AAPT) and the Royal College of Pathologists (RCPATH)
- Extensive **venue and donor risk assessment** is carried out prior to each tissue procurement activity and PPE is already in use
- Main change** : introduction of Filtering Face Piece 3 (FFP3) masks for **aerosol generating procedures** such as bone, tendon and heart retrieval
- Reduced Activity to reduce risk:** From 10 tissue donors per day to 3, with every potential multi tissue donor being referred to senior management for a decision on whether to proceed. This is based on donor characteristics (age, sex etc), potential tissue availability and donor location.
- Tissue retrievers are **working from home** where possible and are only being asked to work when there is a donor or a requirement for other duties to be carried out. This helps us meet the current **social distancing guidance**.

03/04/2020 Date: NHD Blood and Transplant - Safety, Health and Environment Risk and Inspections

03/04/2020

NHD Blood and Transplant - Safety, Health and Environment Risk and Inspections

Location: National (For Risk Assessment use only)

Division: Organ and Tissue Donation and Transplantation (OTDT)

Department: Tissue and Eye Services (For risk assessment use only)

On/Off Site: NGST Wick (For Risk Assessment use only)

Location: All Area

Type of Form Registered and its Purpose: COVID-19 Risk Assessment

Form Number: Select the correct form for your needs. For more information on the correct form to use, please refer to the guidance on the form.

Title: Protecting Tissue and Eye Services Colleagues from COVID-19 during donor operations and processing activities

Reference Number: TSC/COVID-19/UK/ANZ

Identifier: E.g. NHD/OTDT/ or D-18-01

Identifier: Provide a summary of what you are assessing e.g. activity, process, workstation. This will be used to identify the hazards and risks associated with the activity.

What might occur?: Donor Operation: Tissue and Eye Services (TES) colleagues (including hospital, hospice and funeral homes) undertake donor operations to collect and store, transport, test, store and process. Operations can vary as it will depend on what has been agreed as part of the donor contract but it usually takes about 2-3 hours. Processing activities: Tissue and Eye Services (TES) colleagues undertake donor operations (heart, skin, cornea, medical, anatomy) and processing activities. Processing activities include: collection of donor risk and control room environments depending on requirements. Some operations (heart and skin) are time critical and processed within 24 hours of collection whilst others (bone and tendon) are stored and processed at a later date.

Hazardous substance involved: Number of hazardous substances involved: 2

Hazardous Substance 1: Substance 1 - Form/Type/Concentration: Whole blood from donor

Hazardous Substance 2: Substance 2 - Form/Type/Concentration: Aerosol generated droplets (from use of saw)

Frequency of exposure and who is affected?: Donor Operation: Duration/Exposure time will be the same as per standard activities. This can last up to 2 hours. Processing activities: Duration/Exposure time will be the same as per standard activities. This can last up to 2 hours per clean room.

# Precautionary measures for tissue processing

---

Tissue processing within NHS Blood & Transplant is carried out in accordance with The Human Tissue Act 2004 and the EU Tissue and Cells Directive (EUTCD) via the Human Tissue (Quality and Safety for Human Application) Regulations 2007.

The Human Tissue Authority (HTA), the UK competent authority has published COVID-19 guidance for licensed establishments (<https://www.hta.gov.uk/coronavirus-covid-19-guidance-hta-licensed-establishments>).

## **Tissue processing within NHS Blood Transplant continues during the pandemic.**

Current tissue processing practises have been reviewed with regards to COVID-19 taking into account up to date scientific advice and published data. This review has formed part of Risk Assessment. This outcome of the risk assessment can be categorised into two main areas:

- 1. PPE:** The main change for tissue processing is with regards to **Aerosol Generating Procedures** such as bone cutting, blending or grinding. For these processes it has been recommended that current PPE is upgraded and the use of Filtering Face Piece 3 (FFP3) masks implemented. It is also a requirement that these masks are fit tested by a qualified tester
- 2. Virus Inactivation through processing :** A review of current processing techniques has been performed to identify potential COVID-19 risk reduction measures that are already in place. For example Polyvinyl Pyrrolidone (PVPI) is used in Cornea processing and there is evidence that PVPI inactivates a variety of both enveloped and non-enveloped viruses, including influenza A, MERS-CoV and SARS-CoV.

# Availability of personnel in tissue establishments

---

**Social Distancing** has been implemented across NHSBT Tissue & Eye Services with team members being asked to **work from home**, if their role permits this. Additional IT equipment has been provided to individuals to help facilitate this.

For individuals who have to work on an NHSBT site (such as tissue processors), we have introduced other measures to aid with social distancing such as,

- Staggered start and finish time
- Different shift patterns
- Staggered breaks
- Restrictions on meeting room use
- Meetings held via skype, zoom, Microsoft teams etc

Team members who have been identified as 'high risk' or 'vulnerable' have been asked to self-isolate at home for 12 weeks.

A meeting is held each morning to review staffing, activity, resources and other contingency planning.

# Clinical application of tissues from deceased donors

---

- Elective surgery within the UK ceased in April with only emergency surgery taking place.
- Due to Elective surgery being cancelled we observed a large number of cancellations which unfortunately led to some clinical tissue **time expiring** (mainly corneas due to their short expiry).
- The only tissue that continues to be issued regularly is Heart Valves, Corneas and Skin, however corneas issues have significantly reduced.
- **Delivery** of tissue has been largely **unaffected** and we have been able to meet the demands of clinicians.

## Provisions to control tissue availability

---

- All tissues processed within NHSBT Tissue & Eye Services have been deemed **essential** so processing continues
- Some tissues (heart valves, skin and corneas) have been classified as 'emergency' tissues and would take **priority** should staff availability reduce to a level that would prevent all tissue type being processed. This is as per existing business continuity/emergency plans.
- Processing of corneas has reduced in line with demand (due to tissue expiry dates). Heart Valve processing continues at pre COVID-19 levels. There is sufficient skin currently available to meet demand.
- NHSBT Tissue & Eye Services are now working on a '**recovery**' plan to ensure sufficient tissue is available to clinicians post COVID-19 when elective surgery re-starts

# The floor is yours!

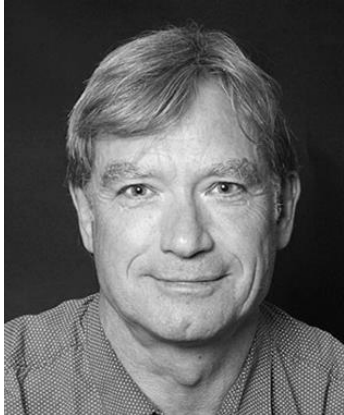
Type your question in the chat window and indicate to whom it is addressed



Eliana PORTA



Isabelle MARTINACHE



Ralf Reinhard TÖNJES



Martin BÖRGEL



Jorge GAYOSO



Anna VILARRODONA



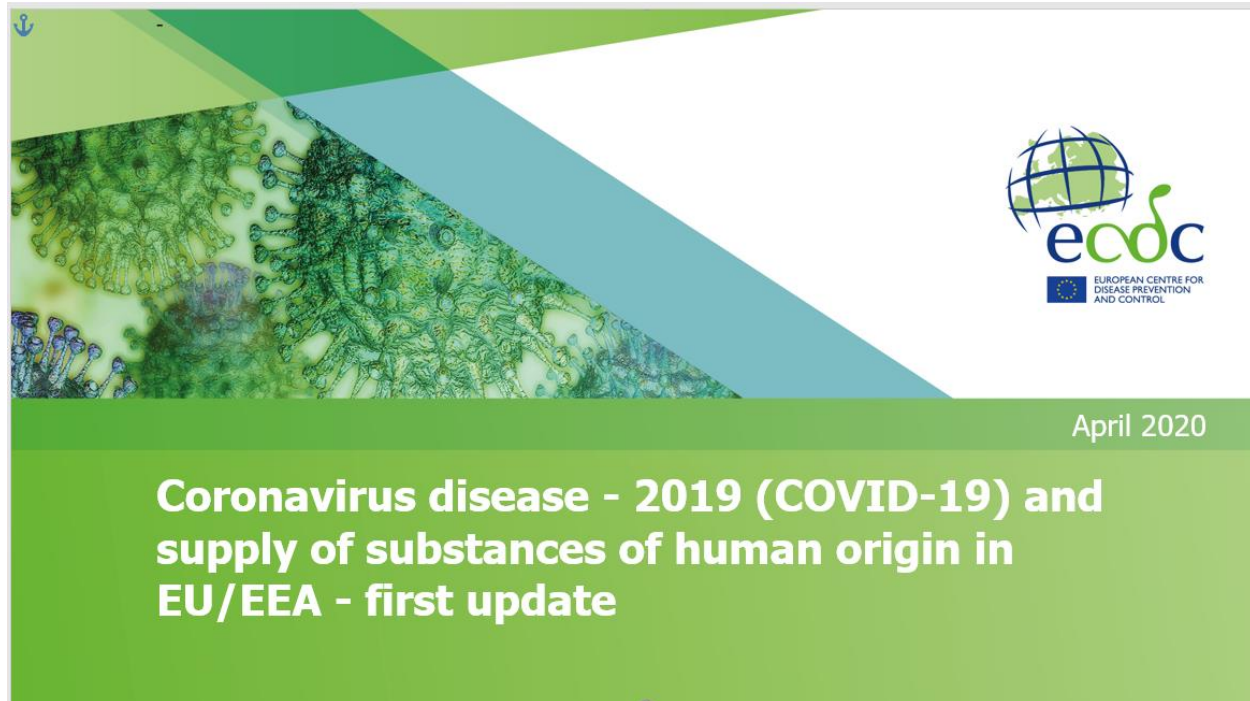
Kyle BENNETT



Dragoslav Domanovic, ECDC Stockholm

# Risk of COVID-19 transmission through tissues from deceased donors and testing practice

# ECDC technical document



# **Risks posed by COVID-19 pandemic to SoHO**



**Risk to the viral safety of SoHO**

**Risk to the SoHO recipients**

**Risk to the staff in SoHO establishments,**

**Risk to the sufficiency of SoHO supply**

# COVID-19 infection and patient



## Route of infection

- Infection in community
- Nosocomial infection
- Transfusion and transplantation?

## Presence of the viral RNA

- Respiratory tract specimens
- Body fluids (tears, saliva, stool, urine)
- Blood (whole blood, serum, plasma )
- Tissues and organs (distribution of hACE2) ?

# Risk of COVID-19 transmission through SoHO



No report of COVID-19 transmission through SoHO

Low levels of detectable RNA in the blood - Infectivity not determined

RNA positivity of tissues and organs uncertain

Routine donor screening (medical and behavioural history and medical check) should detect donor with symptoms of acute respiratory illness

Disinfection, sterilization or pathogen reduction of some types of SoHO

Risk of COVID-19 transmission through SoHO is **THEORETICAL** but cannot be excluded

Suggested interventions – **PRECAUTIONARY**

# Laboratory testing



## **NAT - rRT-PCR**

- WHO have shortlisted three molecular detection assays through the Emergency Use Listing Procedure (EUL) and Foundation for Innovative New Diagnostics (FIND) has provided validation results for five more

## **Antigen detection tests**

## **Antibody detection tests**

Source: European Commission: Guidelines on COVID-19 in vitro diagnostic tests and their performance, 2020

# Source of specimen

## Lower respiratory tract

- sputum
- aspirate
- lavage

## Upper respiratory tract

- nasopharyngeal and oropharyngeal swabs
- nasopharyngeal wash/nasopharyngeal aspirate

## Additional sources

- stools, whole blood, urine, and if diseased, material from autopsy

# Detection SARS-COV-2 RNA in Clinical Specimens by rRT-PCR of

Table. Detection Results of Clinical Specimens by Real-Time Reverse Transcriptase–Polymerase Chain Reaction

Specimens and values	Bronchoalveolar lavage fluid (n = 15)	Fibrobronchoscope brush biopsy (n = 13)	Sputum (n = 104)	Nasal swabs (n = 8)	Pharyngeal swabs (n = 398)	Feces (n = 153)	Blood (n = 307)	Urine (n = 72)
Positive test result, No. (%)	14 (93)	6 (46)	75 (72)	5 (63)	126 (32)	44 (29)	3 (1)	0
Cycle threshold, mean (SD)	31.1 (3.0)	33.8 (3.9)	31.1 (5.2)	24.3 (8.6)	32.1 (4.2)	31.4 (5.1)	34.6 (0.7)	ND
Range	26.4-36.2	26.9-36.8	18.4-38.8	16.9-38.4	20.8-38.6	22.3-38.4	34.1-35.4	
95% CI	28.9-33.2	29.8-37.9	29.3-33.0	13.7-35.0	31.2-33.1	29.4-33.5	0.0-36.4	

Abbreviation: ND, no data.



# Deceased tissue donors – testing practice



- **Routine testing of all deceased tissue donors**
- **Testing of particular categories of deceased donors**
- **No testing**

# Testing practice (1)



**Deceased donors with an active confirmed COVID-19 at the time of death are not eligible for tissues donation – No testing**

Rationale:

Precautionary intervention to prevent SARS-CoV-2 transmission which is based on possible presence of the virus in blood, body fluids and tissues of a deceased with active confirmed COVID-19 at the time of death

## Testing practice (2)



**Deceased donors who have recovered from COVID-19 may donate tissues if tested negative for the presence of SARS-CoV-2 RNA in upper respiratory tract specimens more than 14 days before death or if became asymptomatic 28 days before death.**

### Rationale

Precautionary intervention to prevent SARS-CoV-2 transmission is based on the possible presence of the virus in blood, body fluids and tissues of a deceased donor who has recovered from the disease. Since the risk of the virus shedding after a patient tested negative for the presence of SARS-CoV-2 RNA in upper respiratory tract specimens is lower, we suggest 14 days deferral (maximum incubation period) before death. The risk of prolonged virus shedding after a patient became asymptomatic is higher, therefore, we suggest 28 days deferral (double maximum incubation period) before death.

# Testing practice (3)



**Tissues should not be collected from deceased donors, who are without symptoms or diagnosis of COVID-19, and who lived in, or visited, areas of sustained community transmission of the virus unless:**

- **There is disinfection, sterilisation or a microbial inactivation step of procured tissues that is validated for enveloped viruses, or**
- **Donors tested negative for the presence of SARS-CoV-2 RNA in upper or lower respiratory tract specimens collected within 72 hours before procurement.**

Rationale:

Precautionary intervention to prevent SARS-CoV-2 transmission is based on the possible presence of the virus in blood, body fluids and tissues of an asymptomatic or pre-symptomatic deceased donor.

Tissues that can be disinfected, sterilized or inactivated using a method validated for enveloped viruses during procurement and processing are excluded, because in such tissues the risk of diseases transmission negligible and acceptable

Although testing of lower respiratory tract specimens are more sensitive than upper, both options are suggested to be not restrictive for those tissue procurement organizations who are not able to collect lower respiratory specimens

The time criterion for the collection of lower or upper respiratory tract specimens for the detection of the viral RNA within 72 hours before tissue procurement allows to collect specimen before death without increased risk of donor infection in the period between specimen collection and death

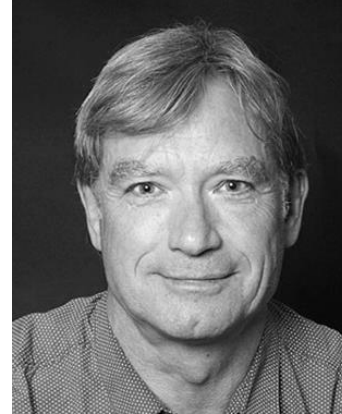
# Open Discussion



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Martin BÖRGEL



Jorge GAYOSO



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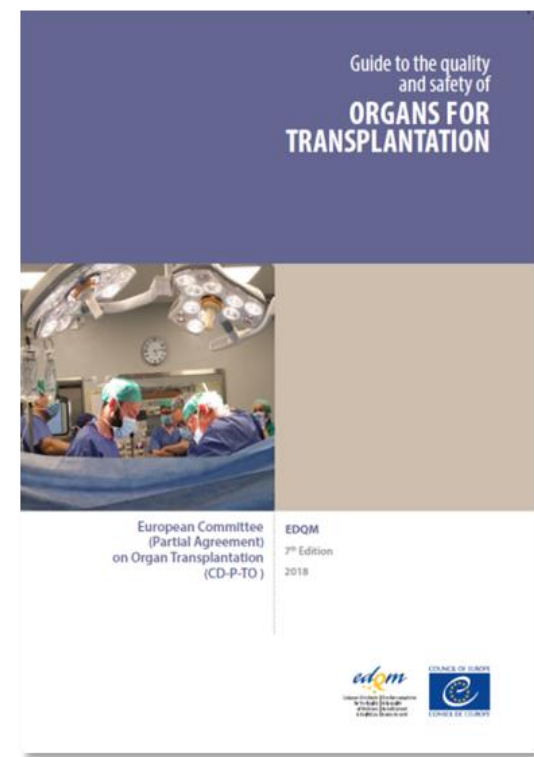
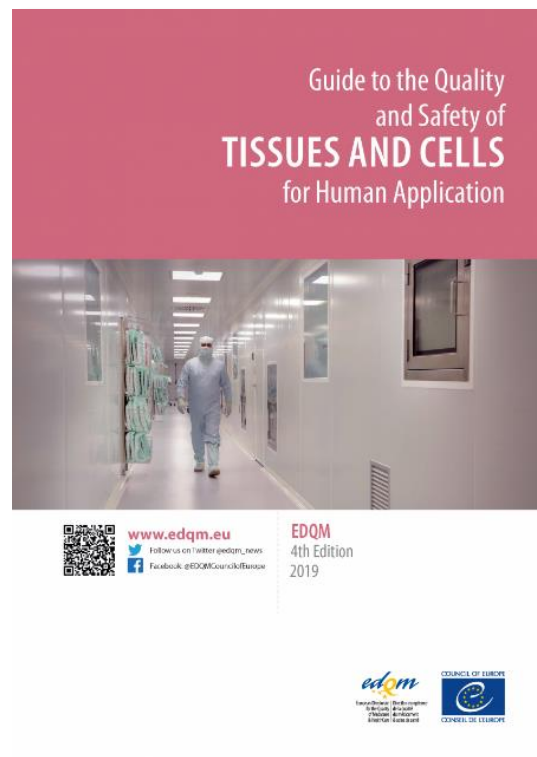


Kyle BENNETT



Dragoslav DOMANOVIC

# Conclusions and Closing remarks



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Special thanks to our moderators and speakers



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