EURADOS recommendations to deal with the COVID-19 pandemic

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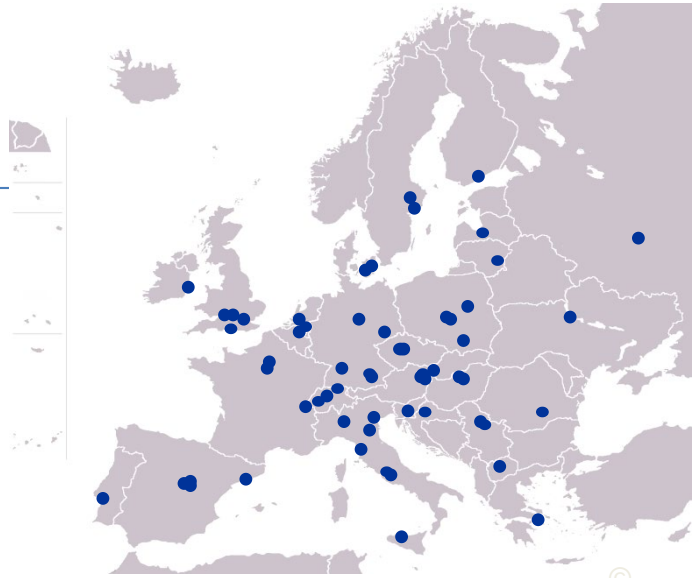

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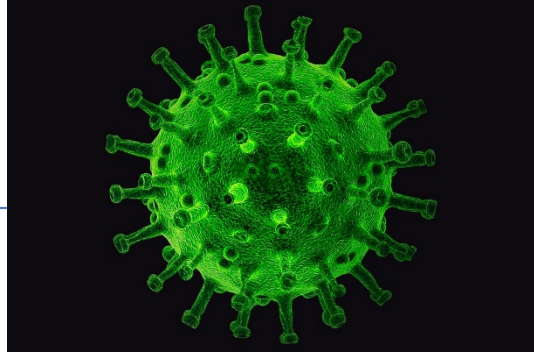
  80 Voting Members (institutions)

  represented by designated individuals

- Activities:
  - coordination of working groups
    - which promote technical development and its implementation in routine work
    - which contribute to harmonization within Europe
  - organization of intercomparisons and bench mark studies
  - organization of scientific meetings and training activities
  - organization of Annual Meeting (>300 participants)

- EURADOS website: www.eurados.org
  - Free registration to our newsletter
  - EURADOS Strategic Research Agenda (SRA)

General introduction



- Everybody affected by COVID-19
  - Also dosimetry community
- Many aspects of routine operations and research affected
  - Need for guidelines
- Situation is different for each country
  - Different level of COVID contaminations
  - Different legislation and practices
  - Different evolution of COVID in next months/years

General national and WHO rules and recommendations must be followed

Proper communication with the customers and the decision-makers at institutional/local/national level must be guaranteed.

General introduction

- **Target audience**
  - Staff and responsibles of Individual Monitoring services (internal, external) and calibration labs
  - Researchers
  - Radiation protection experts
  - Responsible authorities
  - Occupationally exposed workers

- **COVID-19 might be around for long time to come**
  - Recommendations stay relevant….

General guidance

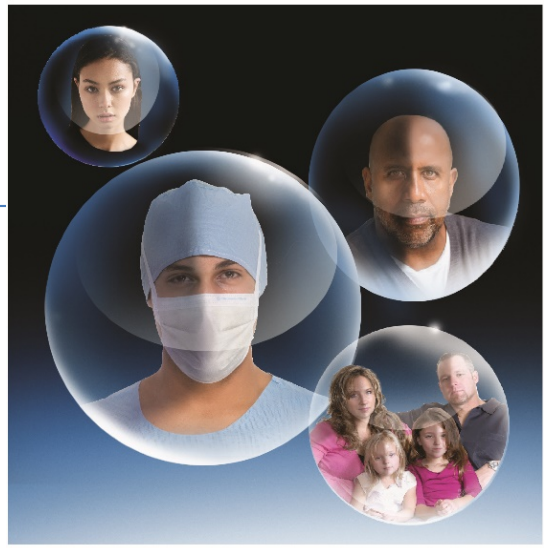
- Priority: **protection of the dosimetry laboratory staff**

- Staff: Should be able to follow the advised hygiene measures.
  - Wash your hands frequently
  - Staff shall keep a distance of at least 1 m from each other and from customers
  - Avoid touching eyes, nose and mouth
  - Practise respiratory hygiene
  - Personal Protective Equipment should be available to the staff
  - Anyone who is displaying symptoms of COVID-19 or who lives with someone who has symptoms, should not be involved in performing laboratory calibration services

General guidance: Essential Services

- **Some dosimetry services can be regarded as essential**
- Measures must be taken such that these services will not be interrupted
- Examples
  - Response and measurements in case of nuclear emergencies
  - Potential significant exposure for ongoing professional activities
  - Activities related to the response to the COVID-19 pandemic

General guidance: Essential Services



- For such essential services it must be assured that
  - Sufficient qualified staff will always be available
  - Supplies and shipment will be available

- The following arrangements can be made:
  - Reducing the number of samples/persons measured
  - Alternate staff in the lab to avoid possible contamination of the whole team
  - Make increasing use of work from home
  - Adapt the open time of the lab and the working time of the staff

- Transport must be available to ensure samples and dosemeters

- For consumables required (nitrogen…):
  - Supplies should be sufficient in case of longer delivery times
  - Precautionary measures to avoid the transfer of the virus
    - Contactless transfer of goods and temporarily quarantining of goods

General guidance: Research Activities

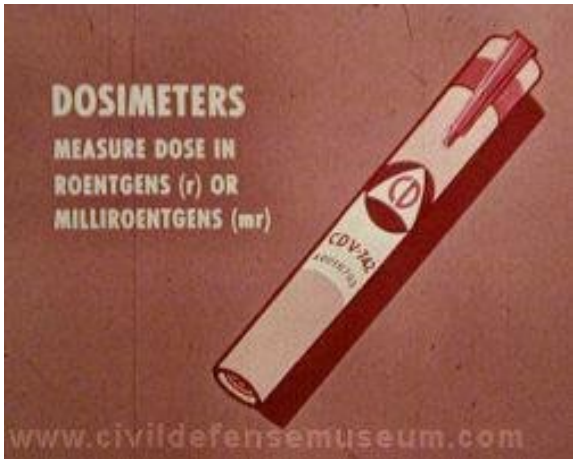
- **Research activities cannot be considered as essential services**
- High priority research should be continued if the protective measures can be applied
- All non-essential experiments should be postponed
- Working from home should be encouraged as much as practically possible
- If laboratory work is performed, data analysis and write-up should be performed at home

General guidance: Calibration, Maintenance and Quality Assurance

- The schedules for all routine calibration, maintenance and quality assurance and control procedures should be reviewed
- Essential tasks that cannot be postponed, e.g. key regulatory requirements, shall be maintained as far as reasonably practicable
- Tasks may be considered for postponement after risk assessment
  - e.g. those which are scheduled at regular intervals
  - e.g. annual APD calibrations
- Exception records may be used to document any justified deviation
- A negotiation with the accreditation body can be undertaken for a relaxation of the accreditation criteria
  - This must be done on a solid scientific basis, without penalizing the traceability and the quality of the service in general

External Dosimetry: Personnel Safety

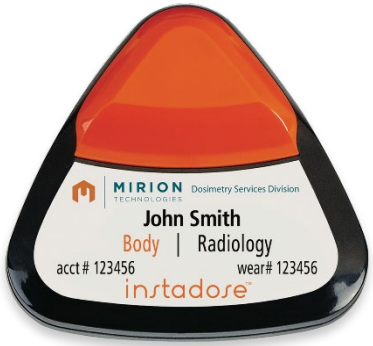
- A risk assessment shall be carried out to reduce the transmission of COVID-19 to laboratory personnel and monitored individuals
- It is recommended that a delay of at least 3 days is introduced before opening all dosemeter consignments
- Where practicable, surface wipes with alcohol-based disinfectant solution should be performed on all items returned by clients
  - However, it is recognised that wiping all dosemeters might be impracticable for some large scale IMS
- When performing disinfection of dosemeters, laboratory personnel shall wear protective gloves



External Dosimetry: Amendments to IMS Service Schedules

- Prioritization
  - It is essential that the Individual Monitoring Services (IMS) contact the customer to prioritise essential and urgent measurements over those that could tolerate delays

- Suitable arrangements for dosemeter transport between IMS and user locations must be established in case routine postal or courier services are disrupted



External Dosimetry: Monitoring Period

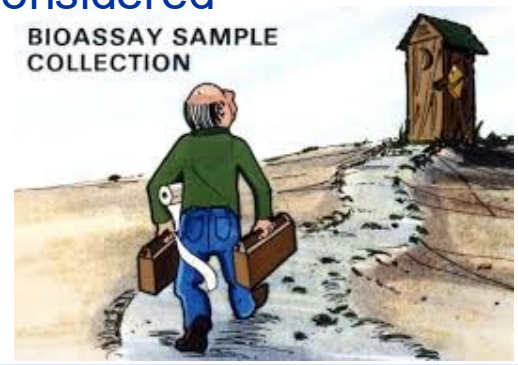
- **Capacity must be maintained for urgent measurements**
- Routine monitoring periods may be extended to up to a maximum of six months
  - If supported by an exposure history and knowledge of the workplace

- **Six months is the maximum monitoring period taking into consideration the fading characteristics**
  - The associated increase of uncertainty is considered acceptable with respect to the standards
  - The detection limit can change for extended monitoring periods
  - The natural background radiation must be appropriately subtracted. For extended monitoring periods, the use of specific client values may be preferred over the use of an average value, such as a national average

- Agreement on the change of the monitoring period must be made with the customers and the legislator, and this should be documented

Internal dosimetry: Missed/Skipped Measurements

- Routine in-vivo measurements: could be postponed
  - Some workplaces might also be in a mode of reduced operations
- In-vivo measurements after incidents should be performed
- For long-lived nuclides, the sampling of excreta should be continued, to allow for later treatment and measurement
- For short-lived nuclides immediate treatment and measurement of the samples should be considered
- Availability of public transport (for in-vivo customers) and shipment services (for bioassay monitoring) might be reduced and needs to be considered
- If possible, it should be guaranteed that intakes corresponding to E(50) ≥ 1 mSv are detected
- Customers should be informed by the service



Internal dosimetry: In-vivo Measurements

- Close contact between operator and the person that is measured cannot be avoided
  - Rules of hygiene should be followed before the measurement
  - Protective equipment, such as facemasks, should be worn by both
  - For the staff a higher level of protection (such as FFP3 masks) should be used
  - Disinfection of the chair/bed and the measuring chamber after each measurement should be performed
  - Time for ventilation of the room should be allowed between the measurements

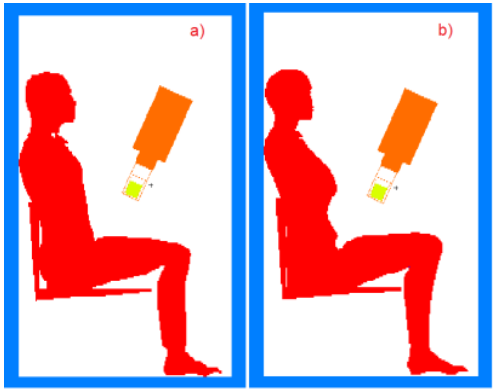
- Extra time needs to be taken into account in the scheduling of the lab's operations

- If in-vitro methods are available and feasible these may be preferred to minimize direct contacts

Internal dosimetry: In-vivo Measurements

- Measurements should be prioritized
  - The duration of the postponement of the measurements affects the minimum detectable doses of the monitoring programme
    - It depends on the radionuclides monitored and the monitoring intervals.
  - Consultation with the RPO (Radiation Protection Officer) and the customer is required to establish the changes in the monitoring, which should be documented

- Nitrogen supply for HPGe-detectors might be affected. If the supplies are reduced electrically cooled detectors might be used, or if it is possible to switch to measurements using Scintillators



Internal dosimetry: In-vitro Measurements

- Bioassay samples are biological materials and are handled taking into account the biohazard

- If possible, the collection of excreta samples should be continued
  - A reasonably large number of containers for sampling should be prepared and provided by the dosimetry service
  - Pre-treatment (e.g. adding acid to urine samples) could be done at the workplace of the persons if the bioassay laboratory is not available
  - Samples should be stored in a fridge until further treatment

- Supply of chemicals required for the analysis might be reduced. Alternative separation techniques should be investigated

Calibration laboratories

- Some Calibration services can be regarded as essential. Measures must be taken such that these services will not be interrupted, e.g.:
  - Calibrations for the healthcare sector
  - New medical facilities that have been set up as part of the COVID-19 response. e.g. imaging departments in hospitals

Calibration laboratories

- If extended calibration periods are to be used:
  - They must be accompanied by the user ensuring that enhanced function checks are performed. These should be documented and appropriate check sources should be used
  - For fixed point monitoring, users should check for either what the instrument recorded last time, or what they expect at that position, so poor performance of the instrument can be suspected
  - In novel measurement situations, dual measurements could be performed, using pairs of instruments

Calibration laboratories

- During the transition of strict lockdown to a progressive relaxation of the containment measures, the following actions can be considered:
  - Do not allow customers to be present during the calibrations
  - Define a dedicated area for goods delivery
  - Consider the instrument as potentially virus contaminated, handle with gloves and clean it with sterilizing wipes
  - Give precedence to customers from the medical sector or other areas particularly important during the pandemic

- Assist customers needing scientific support
  - This should be done mainly in terms of identification of situations where the validity of the calibration certificate can be extended without penalizing the quality of the measurements

Summary

- COVID-19 can affect Individual Monitoring Services and Calibration labs for long time
- Some services are essential: *Emergency and incident measures, high dose measures, medical applications*
- Protection of the dosimetry laboratory staff
- The schedules for all routine calibration, maintenance and quality assurance and control procedures should be reviewed
- It is essential that the Individual Monitoring Services (IMS) contact the customer and legislator to prioritise essential and urgent measurements
- Practical guidelines are available