

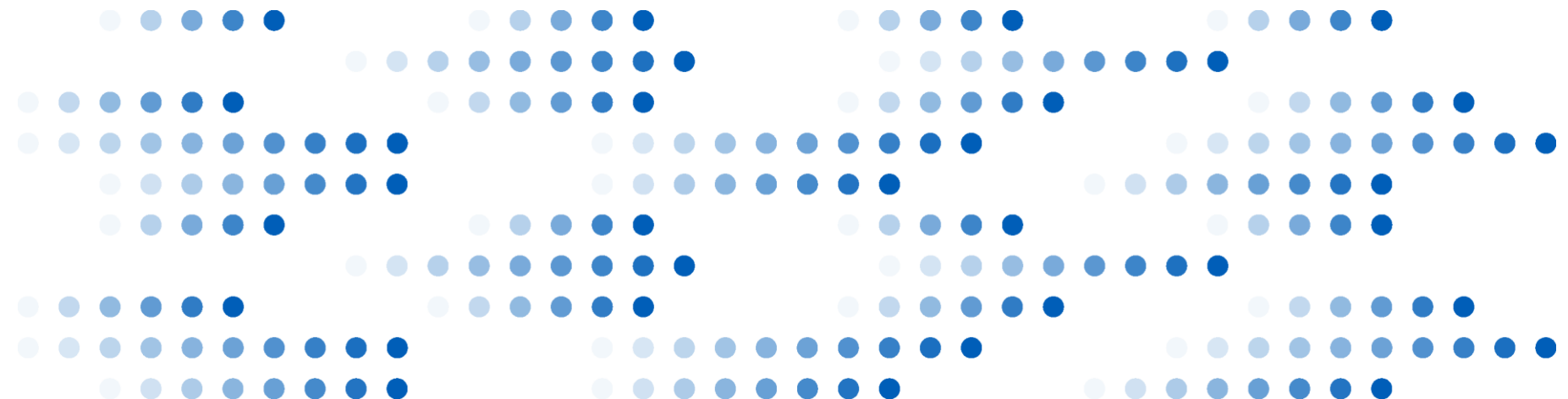


DANISH HEALTH
AUTHORITY
RADIATION PROTECTION

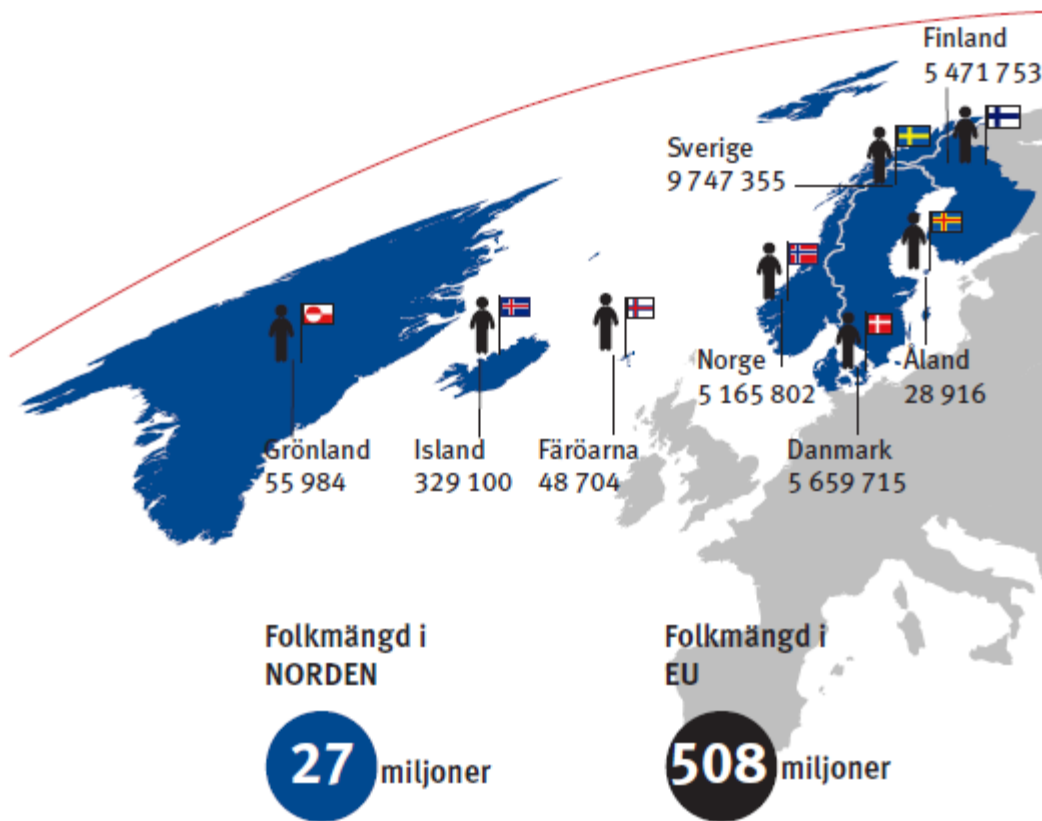
Nordic countries

Hanne N Waltenburg

HERCA MSW "Generic Justification", Paris 24 – 26 October 2016

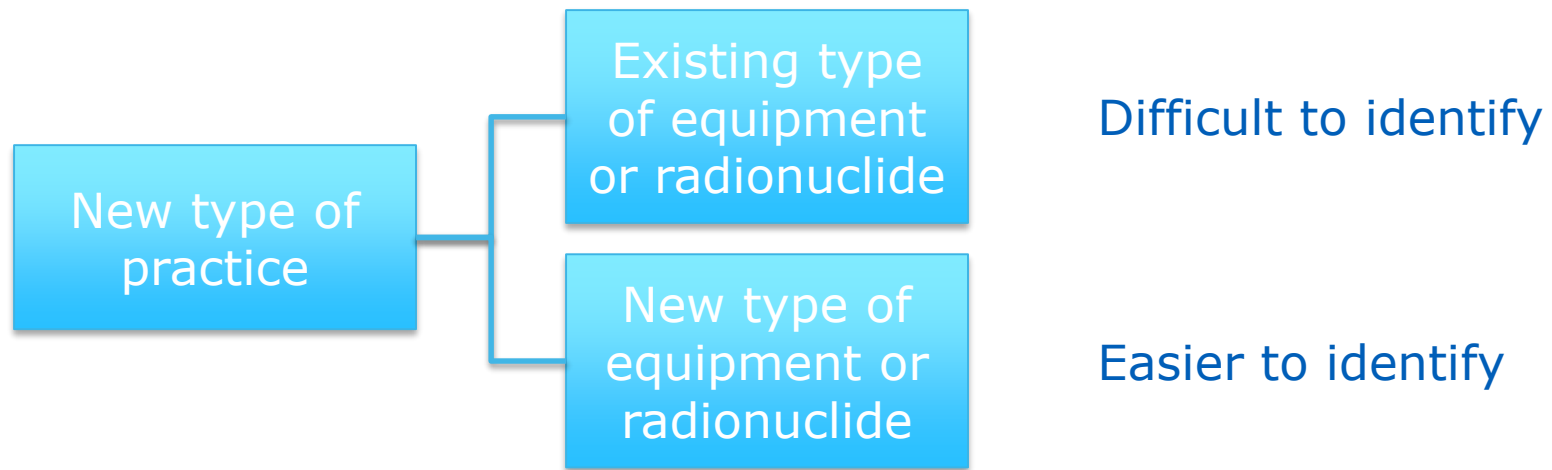


Collaboration between Nordic RP authorities



- More than 40 years
- Nordic group for x-ray diagnostics
- ➔ Nordic group for medical applications
- Similarities in legislation
- But also large differences
 - e.g. inspections practices

Consideration of justification in application process



New types of equipment, new radionuclide etc.:

- Requirements often discussed in the Nordic group

Handheld dental equipment

Issues raised

- Battery powered
 - Some models: Lower tube current requires longer exposure time
 - *Higher risk of motion artefacts*
- Higher staff doses – Proximity of operator to x-ray source
 - Especially hands
- Extreme case: Some models have been shown to expose patient and staff to very high doses



Measurements at STUK



- Shield in front
 - Easy to remove
 - Not comfortable to use with patients
- Dose to hand after removal of shield
 - Increased by a factor of five





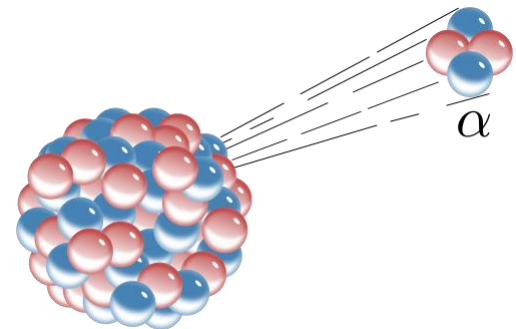
Handheld dental equipment Requirements

- Special license required for use of handheld equipment
 - Although license not generally required for dental use in Nordic countries
- Special needs to justify using handheld instead of mounted equipment
 - Complicated or very stressful for the patient to be moved
 - *Elderly, disabled people*
 - *Psychiatric patients*
- Dose to personnel must be assessed / monitored
- Extra documentation required

Ra-223 treatment for prostate cancer (bone metastases)

Issues

- Ra-223 is an alpha emitter
 - Risk: internal dose
 - *Intake*
 - *Inhalation*
- Dose coefficients depend on several factors
 - Exposure route
 - Kinetic model

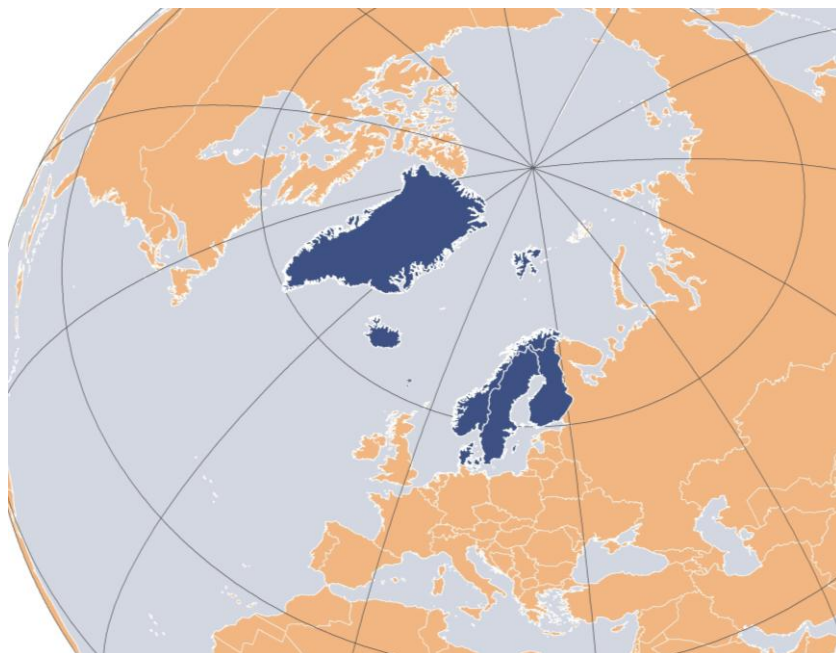




Xofigo (Ra-223) palliation for prostate cancer

Process and Requirements

- The radiopharmaceutical approved for patient treatment/clinical trial
 - as other pharmaceuticals – national Medicines Agencies
- Risk assessment regarding staff exposures part of licencing process
 - Exposure routes
 - Methods and procedures for assessing and measuring staff doses
 - Mitigation in case of incidents



**Thank you
for
your attention**