Medical Device Regulatory Changes in Europe

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Session: Ti in Medical Technology
Overview of Today’s Presentation

- Notified Bodies – Who, What and How?
- The Players
- What is BSI?
- Types of Medical Devices Reviewed by Notified Bodies
- New EU Medical Device Regulation 2017 – MDR
- Changes Compared to Current Medical Device Directive 93/42/EEC
- Potential Impact on Materials Suppliers
Notified Bodies (NB)
- What are they?
- What is their role?
- How are they appointed?
- How are they “controlled”? 
- NB/CA (competent authority) interface?

What are NBs?
- Independent 3rd party certification bodies
- Usually commercial organizations independent of National Authorities
- But some are “public sector” e.g. Spain and France
- Many have backgrounds in “standards” work or provision of testing services

Notified Bodies
- Conduct regulatory conformity assessments
- Confirm compliance to essential requirements
- Must perform to a consistently high standard or - risks public harm
- undermine political/public confidence
- reflects badly on the CA/DA responsible

What Do NBs Do?
- Undertake conformity assessment procedures defined in relevant annexes to the Directive prior to CE-marking
- Essentially pre-market assessment (quasi-regulator)
How do they do it? e.g. AIMD/Class III/List A IVDs

- Normally a QA/GMP inspection at manufacturing plant
- Sample of manufacturing processes reviewed
- Detailed review of each product's technical file e.g. design, clinical data, test results, adherence to harmonized standards etc. [sample across product range for lower class devices]
- Batch verification for each batch of IVD produced.
- If product contains:
  - Medicinal substance – consults with drug CA/EMEA
  - Human blood derivative – consults with EMEA
  - Material from TSE susceptible species – all CA consultation

- Issue Certificate of Conformity
- Ongoing surveillance
- Assess significant changes e.g. to design or manufacturing process

NBs – How are they appointed?

- Designated by Member States (CA/DA)
- Candidates must be legal entity established in MS
- MS’s responsible for ensuring candidates meet the requirements of the particular Directorate (and Annexes) and principles set out in Decision 93/465/EEC
Who are the Players?

- EU Commission
- Member State (Competent Authority)
- Manufacturer
- Notified Body
Notified Bodies

- Situated in any Member State*
- Conduct Conformity Assessment
Manufacturers

- Situated anywhere in the world
- “... has ultimate responsibility for conformity of the product...”
- Signs a Declaration of Conformity when
  - Satisfied that requirements are met
  - Necessary assessments are complete
What is BSI?

- National Standards Body
- Certification
- Standards-related products and services
- Consulting

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BSI is a global company

- 4,000 colleagues & 11,450 experts
- 81,000 clients in 180 countries
- 100,000* product certifications
- 2,200 new standards 39,450 in all
- 205,000 audit days delivered
- 135,000 delegates trained
- 38,600 consulting days delivered
- 5 acquisitions in 2016

BSI clients represent

- 51% of Fortune 500
- 75% of FTSE 100
- 68% of Nikkei Index

* Estimate subject to change
What does BSI offer to customers?

Ensure patient safety while supporting timely access to medical device technology globally. Provide our customers with conformity assessments, evaluations and certifications that are recognized and accepted worldwide.

> CE Marking, ISO 13485, CMDCAS, MDSAP, Training

Provide added value to customers through information, training, knowledge and management systems solutions to anticipate, maintain and exceed compliance with internal and external requirements.
Regulated Products

BSI helps customers bring their medical device products to the market

- Medical Devices are subject to regulation to protect the public. Regulated products are generally those intended to treat human diseases or conditions, to improve or maintain health.
- Regulations have evolved over the years: testing, clinical trials, documentation, manufacturing processes, labeling, advertising, releasing on the market and distribution.

There are 3 pieces of EU legislation which cover medical devices. 
90/385/EEC Active implantable medical devices covers all powered implants.
93/42/EEC Medical devices covers most other medical devices.
98/79/EC In vitro diagnostic medical devices covers any medical device which is intended for in vitro testing.

Medical Device Regulation – 2017 (MDR) will cover both Active Devices and other Medical Devices
In Vitro Diagnostic Medical Device Regulation – 2017 (IVDR)
Types of Medical Devices Reviewed - Defines How BSI is Organized

Orthopaedic & Dental
Joints, implants and cements

Active Implantable Devices
Pacemakers, neurostimulators and radiation therapy devices

IVDs
Pregnancy tests, blood glucose monitors and HIV tests

Vascular
Stents, catheters and guidewires

Active Devices
Medical imaging equipment, patient monitors and incubators

General
Woundcare devices, animal tissue, drug-devices and ophthalmic devices
**What BSI Does – Product Certification**

**CE marking** is the medical device manufacturer’s claim that a product meets the essential requirements of all relevant European Medical Device Directives and is a legal requirement to place a device on the market in Europe.

The **BSI Kitemark™** is most frequently used to identify products where safety is paramount, such as crash helmets and smoke alarms. In recent years the Kitemark™ has also been applied to a range of services, such as electrical installations; car servicing and accident repair; and window installations.
Transition timelines MDR (Article 120)

- **25 May 2017**: Entry into Force
- **26 May 2020**: Date of Application
- **27 May 2024**: MDD/AIMD « grace period » 4 years
- **27 May 2025**: No more « placing on the market » of devices covered by MDD/AIMD certificates

**Transition period 3 years**

- **26 Nov 2017**: NBs can apply for designation
- **27 May 2022**: Annex IV/ 6 certificates void
- **26 May 2020**: MDD/AIMD certificates

**MDR certificates**

NB designation under MDR
2017 EU Regulations – Why?

- Response to ‘scandals’ to restore confidence in system
- Keep pace with scientific and technical developments
- Overcome divergence in interpretation and application
# Regulation EU 2017/745 – Conformity Assessment

<table>
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<th>Class Is, Im, Ir</th>
<th>Quality Management System</th>
<th>Microbiology</th>
<th>Technical Documentation review</th>
<th>Unannounced Audit</th>
<th>Clinical Evaluation Consultation Procedure (CECP) (Article 54)</th>
<th>2001/83/EC EC/726/2004/23/EC EU 722/2012 PSJR (Article 86)</th>
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<td>*conformity with SPRs</td>
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*depends on certification held
*impact sterile barrier, translate, repackege
*conformity with SPRs
Things just got heavier!

- **MDD** booklet: 3.0 mm thick
- **MDR** booklet: 8.75 mm thick

3 times thicker and heavier!
Key Changes

- Classification rules – Annex VIII
- Conformity Assessment – Annex IX to Annex XI
- General Safety and Performance – Annex I
- Technical File Documentation – Annex II
- Risk Management
- Clinical Evidence
Key roles in medical devices supply and distribution chain

- Increased scrutiny of subcontractors and suppliers
- New requirements for manufacturers of devices without a medical purpose
- New contractual requirements, product liability, records and retention, involvement in corrective action and investigations, person responsible for regulatory compliance

New CE requirements for device manufacturers (eg Class III custom devices, Class Ir, etc); person responsible for regulatory compliance

Builds upon requirements from Directives 2001/95/EC (General Product Safety) and 85/374/EEC (liability for defective products); Clarifies when legal manufacturer responsibilities are assumed
Safety & Performance Requirements

1. Safe, Perform as Intended, State of the Art
2. Risk reduction as far as possible
3. Risk Management
4. Risk Control
5. Risk of Use Error
6. Lifetime
7. Packaging, Transport, Storage
8. Undesirable side-effects minimised & Risks<Benefits
9. Annex XVI “no risk at all” or “no more than the maximum acceptable risk”
10. Chemical, Physical & Biological Properties
11. Infection & Microbial Contamination
12. Devices incorporating a medicinal product and devices composed of substances that are absorbed by or locally dispersed in the human body
13. Devices incorporating materials of biological origin
14. Construction and interaction with the environment
15. Devices with a diagnostic or measuring function
16. Protection against radiation
17. Electronic programmable systems
18. Active devices and devices connected to them
19. Requirements for AIMD
20. Protection against mechanical and thermal risks
21. Protection against the risks posed to the patient or user by supplied energy or substances
22. Protection against the risks posed by medical devices intended for use by lay persons
23. Information Supplied
Annex I, Safety and Performance Requirements

Chapter 2: Design and Manufacture (SPRs 10-22)

- Biological tissues expanded to include human tissues (rendered non-viable) (13)
- Also includes catch-all for non-viable biological substances of neither human nor animal origin

New requirement: information for lay users (22)

Much more detail on mechanical and thermal risks (20)

Active and AIMD, many similar or identical, some new:
- Increased emphasis on info security (17, 18)
- More emphasis on ionising radiation (16)

Expanded requirements for interaction with the environment and compatibility with other devices, including ergonomics, calibration, disposal (14)

Much more detail regarding chemical, physical and biological properties, and specific substances of concern. Addresses mechanical as well as toxicological suitability (10)

Greatly expanded scope of requirements with respect to infection and microbial contamination (11)

Medicinal substances scope expanded to include substances that are absorbed by or locally dispersed in the human body (12)
Annex I, Safety and Performance Requirements

- Some clarifications on labelling requirements. Additional requirements for UDI, devices incorporating human or animal tissues, absorbable devices, AIMDs (23.2)
- Specific requirements for labelling for sterile packaging (23.3)

More “general” requirements (e.g., format, readability, availability, eIFU, etc)

Chapter 3: Information Supplied with the Device (SPR 23)

Many more new requirements and cross-referencing to articles, including (inter alia):
- Requirements for special training or facilities (23.4j)
- Identification of consumable components and how to replace (23.4k)
- Many more specific warning requirements (EMC, medicinal substances, human or animal tissues, CMR and endocrine disruptors) (23.4s)
- Absorbable/dispersible materials (23.4t)
- Information on materials for implants (23.4u)
- Information security measures (23.4ab)
Chemical, physical and biological properties (Biological Safety)

- New wording but no major changes to how biological safety reviewed; text in line with EN ISO 10993
- Compatibility between materials and biological tissues, cells, fluids “including absorption, distribution, metabolism, and excretion”
- “the compatibility between the different parts of a device which consists of more than one implantable parts”
- “Impact of processes on material properties” – clarification / more explicit requirement
- Devices administering medicines – clarification that medicine is to be used within its approved indications (excluding “off-label” use) (SPR 10.3)
- New focuses: “Wear debris, degradation products, processing residues” (SPR 10.4.1)
- Risks linked to size and properties of particles (SPR 10.6) – considerations for nanomaterials or wear debris, etc.
C.2: Biological Safety (Chemical, Physical, Biological Properties)

**Reviewer Assessment:**

- Details of the approach to biocompatibility used. May include tests considered / conducted by the manufacturer, plus consideration of toxic thresholds, pyrogenicity / EO residues, etc.
- Is there evidence of re-evaluation of the biological safety data due to changes (manufacture, shelf life, packaging, sterilisation, intended use)?
- Have chemical characterisation tests (in-vivo) been performed prior to in-vivo testing? Does the testing confirm the device meets chemical and/or physical specifications (h)?
- Does the biological evaluation take into account post-market experience? (is it reviewed & updated with consideration for post-market experience)?
- Is the overall conclusion made by an expert assessor with necessary knowledge and experience?

1. **Outline the physical characteristics of the final product, including but not limited to: porosity, particle size, shape and surface morphology – SPR 10.1 & 10.2 & SPR 10.6 – unintended ingress? Have any nanomaterials been appropriately considered with respect to biological safety (SPR 10.6)?**

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Thank You From West Palm Beach!!!!!!!