Planning for implementation of the European Union Medical Devices Regulations – Are you prepared?

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Introduction

The publication of the stable text of the European Union (EU) Medical Devices Regulation[1], and the In Vitro Diagnostic Medical Devices Regulation[2], in June 2016 documents the political agreement between the three EU Institutions – the Commission, the Parliament and the Council – on the contents of the revision of the EU legislation for medical devices. Preparation as regulations means that the legislation will apply directly in Member States, thereby minimizing the potential for differences being introduced during national adoptions. The availability of this text allows affected organizations to start considering the effects on their activities and what they will need to do in order to be compliant with the revised requirements. The text will undergo legal checking prior to formal adoption.

Planning for implementation of these regulations is a classic project management activity to identify what has to be done, in what order, by whom and by when, and how progress will be monitored. The detail of the project plan will vary from organization to organization depending upon their role(s) under the Regulation(s), their size, the way that they are organized and managed, the types of medical devices for which they have regulatory accountability, and their strategic business intentions. Therefore, it is not possible to create a single implementation plan that would be applicable to the wide range of organizations affected by the Medical Devices Regulation.

BSI has published white papers describing the Medical Devices Regulations[3,4] and In Vitro Diagnostic Medical Devices Regulations[5]. This paper focuses on the practical aspects of implementation and highlights some of the major changes. It discusses decisions that need to be made by affected organizations and includes questions to ask about your organization's preparedness in order to comply with the new requirements. This information is intended to assist in developing an implementation plan. While this paper is focused on the Medical Devices Regulation, in many aspects the requirements of the In Vitro Diagnostics Medical Devices Regulation parallel the Medical Devices Regulation and the material presented here is intended to be as generic as possible and apply in large part to both regulations.

This paper addresses considerations for implementation in a number of areas, including:

- scope – addressing the range of activities that are undertaken and requirements for economic operators (manufacturers, authorized representatives, importers and distributors);
- product portfolio – dealing with existing products and their technical documentation, including clinical evidence;
- new product development – considering products in the development pipeline;
- Quality Management System (QMS) – looking at responsibilities of the person responsible for regulatory compliance, ISO 13485:2016 certification and life cycle management;
- technical documentation – understanding the content and maintenance;
- labelling – concerning unique device identification, implant cards and labelling changes;
- Post-market Surveillance (PMS)– looking at PMS plans, periodic safety update reports (PSURs) or post-market surveillance reports, and post-market clinical follow-up (PMCF);
- external issues – considering the implications of the Eudamed database, implementing and delegated acts and Notified Body interactions.

The transition periods seem to give plenty of time to introduce the necessary changes but the extent and implications of the changes are significant. Planning is necessary to complete the activities within the prescribed times, particularly as there are a number of areas where the availability of external resources will be limited. The transition periods are:

- three years for the Medical Devices Regulation, with certificates issued in the transition period remaining valid for up to four years after the end of the transition period; and
- five years for the In Vitro Diagnostic Medical Devices Regulation, with certificates issued in the transition period remaining valid for up to two years after the end of the transition period.

1. Council of the European Union, Interinstitutional File: 2012/0266 (COD) Proposal for a Regulation of the European Parliament and of the Council on medical devices, and amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009, 27 June 2016
2. Council of the European Union, Interinstitutional File: 2012/0267 (COD) Proposal for a Regulation of the European Parliament and of the Council on in vitro diagnostic medical devices, 27 June 2016
3. The proposed EU regulations for medical and in vitro diagnostic devices – An overview of the likely outcomes and the consequences for the market. Updated on 5 October 2015
4. How to prepare for and implement the upcoming MDR – Dos and don'ts
5. How to prepare for and implement the upcoming IVDR – Dos and don'ts

Meeting the new requirements will entail careful planning

Scope

The Regulations extend the scope of the legislation beyond requirements on the manufacturer. The requirement remains for a manufacturer located outside the EU to have an authorized representative within the EU. Additional requirements have been added to cover the supply chain responsibilities of other economic operators, namely the distributor, in all cases, and the importer, where the manufacturer is located outside the EU.

The key points in the definitions of these terms are:

- *manufacturer* – produces or fully refurbishes a device, or has a device designed, manufactured or fully refurbished, and markets that device under their name or trademark;
- *authorized representative* – acts on the manufacturer's behalf in relation to specified elements of the manufacturer's obligations and is established within the EU with a written mandate from a manufacturer located outside the EU;
- *importer* – places a device from outside the EU on the EU market and is established within the EU; and
- *distributor* – makes a device available on the market, up until the point of putting it into service, but is not the manufacturer or the importer.

The Regulation also requires the manufacturer to have sufficient financial coverage for their potential liabilities in the event of claims for compensation for damage caused by their devices.

The first step in planning for implementation is to understand the scope of the activities that concern your organization and the medical devices that are involved.

The following are some key questions to be considered:

- ✓ What role(s) do you undertake within the supply chain? Do you act as manufacturer, authorized representative, importer, distributor or some combination thereof? Do you assemble procedure packs?
- ✓ Are you a manufacturer located outside the EU? If so, does the agreement with your authorized representative need updating to reflect new responsibilities? Who acts as the importer into the EU? What does the agreement with that importer currently cover and what changes will be needed to define the authority and responsibilities in the Regulations?

- ✓ Do you distribute products from other manufacturers? If so, are your agreements with the manufacturer up-to-date and meet all the requirements of the Regulation? Does the manufacturer have a strategy to change the CE-marking from the Directive to the Regulation?
- ✓ Are you a manufacturer that uses distributors in your supply chain? Do the agreements cover the roles and responsibilities foreseen in the Regulations? If not, what is the timing to update and finalize new agreements?
- ✓ Do you have measures in place to provide sufficient financial coverage in respect of any potential liability for damage caused by your devices?

Product portfolio

In order to CE-mark your devices against the Regulation, all the requirements will have to be met. There is no automatic acceptance of existing devices that are CE-marked against the existing Directive. Your portfolio of products needs to be reviewed against the new and revised requirements in order to determine the actions needed to change the CE-marking to the Regulation and the timing of that change. This includes products that are currently CE-marked under the Directives as well as those not currently requiring CE-marking because there are changes to the definition of a medical device that could affect your products. The changes to the definition of a medical device in the Medical Device Regulation mean that some products that were previously regulated under the Directive as accessories are now covered by the definition of a device, with the knock-on effect of products that were previously outside the scope of the Directive becoming accessories to what are now devices under the Regulation. For example, the definition now explicitly includes products specifically intended for cleaning, disinfecting or sterilizing medical devices, whereas these were previously considered accessories. Consequently, sterilization indicators that were previously outside the Directive can now be considered accessories to the sterilizing equipment (now considered a device) and are thus covered by the Regulation. However, the exclusion in the scope of the Regulation for products that contain or consist of living micro-organisms introduces a situation where biological indicators for sterilization could be considered excluded from the Regulation, but chemical indicators for sterilization considered as accessories. In addition, there is clarification that software in its own right, when intended to be used for medical purposes, is an active medical device, but software for general purposes (even when used in a healthcare setting, or software intended for lifestyle and wellbeing applications) are not devices.

Furthermore, certain products for aesthetic purposes are bought under the Medical Devices Regulation. The specific products affected are listed in Annex XV of the Regulation. One of the challenges of addressing aesthetic products that are not considered to have a medical purpose is the characterization of benefit versus risk. The Commission is charged with adopting common specifications that address the application of risk management and clinical evaluation of safety to these products. The Regulation applies to aesthetic products from the date that these common specifications are adopted.

A common specification is a document other than a standard that gives technical or clinical requirements providing a way to comply with the requirements of the Regulation. Common specifications have been introduced into the Medical Devices Regulation but were previously an element of the IVD Directive, where they were called common technical specifications. In general, manufacturers are obliged to comply with common specifications unless they can justify that they have adopted solutions ensuring a level of safety and performance that is at least equivalent, but, for aesthetic products, the applicable common specifications are mandatory. The status of standards that are listed in the Official Journal of the European Union, called harmonized standards, in providing a voluntary means to achieve a presumption of conformity with certain regulatory requirements has not changed in the Regulation from that in the Directives.

There are also changes in the classification rules that could affect your products under both the Medical Device and the In Vitro Diagnostic Medical Device Regulations. For Medical Devices, there are products for which the classification has increased or the oversight by the Notified Body has been heightened without an increase in classification. For example, surgical meshes, devices in contact with the spinal column (with some exceptions) and some substance-based devices are up-classified; additional Notified Body oversight is required for Class IIb implants and Class I reusable surgical instruments. For IVDs, a new classification system based on a set of rules has been introduced that will increase the classification for many products and the extent of Notified Body involvement.

The clinical evidence supporting devices will need to be reviewed

One of the key areas that you will need to review is the clinical evidence that you have to support your device and whether that clinical evidence relies on demonstration of equivalence with a comparator device. You will have to be able to demonstrate that the device is equivalent to its comparator, based on scientific justification, in regard to:

- technical characteristics: device is similar in regards to design, specifications and properties, conditions of use, principles of operation and critical performance requirements;
- biological characteristics: device uses the same materials for a similar contact and with similar release properties; and
- clinical characteristics: device has the same clinical application at the same site in the body, in a similar population, with similar performance and with the same kind of user.

There needs to be no significant difference in the clinical performance and safety of your device and the comparator, and you have to be able to demonstrate that you have access to the data on the comparator device in order to justify that claimed equivalence. This is likely to restrict the use of equivalence to devices from the same manufacturer, unless there is an agreement in place allowing access to the necessary information on the comparator device.

In June 2016, a revision of MedDev 2.7/1 Revision 4[6] on clinical evaluation was issued. Although this is guidance on the Medical Devices Directive, it provides a preview of some of the expectations in the Medical Devices Regulation. However, MedDev 2.7/1 Revision 4 and the Medical Devices Regulation diverge in some areas, so familiarity and knowledge of both, and in particular the differences between them, is important during the transition. Planning for compliance with MedDev 2.7/1 Revision 4 is likely to form a step in a comprehensive plan to come into compliance with the Medical Devices Regulation and drive the timeline for some activities.

The following are some key questions to be included in the review:

- ✓ Are any of your products affected by the changes to the definition of a medical device? Do you have products that were previously outside the Directives but will become devices or accessories within the scope of the Regulation as a result of the changes in the definition of a device?
- ✓ Do you have any aesthetic products without a medical purpose listed in Annex XV of the Medical Devices Regulation? Are they within the scope of your quality management system and design and development procedures? Are you monitoring the development of common specifications that will apply to these products?
- ✓ What classes of devices are you concerned with?

6. MEDDEV 2.7/1 revision 4 – June 2016 – Guidelines on Medical Devices – Clinical Evaluation: A Guide for Manufacturers and Notified Bodies under Directives 93/42/EEC and 90/385/EEC.

- ✓ Are any of your products affected by the changes to classification rules? For instance, if you have products that have been up-classified or are considered as Class IIb implants, do you understand the new requirements that will apply? Do you have Class I reusable surgical instruments in your portfolio, and if so, are you complying with the new requirements and prepared for the additional Notified Body oversight?
- ✓ Do you have the necessary clinical evidence to meet the requirements of the Medical Devices Regulation? Have you implemented the guidance in MedDev 2.7/1 Revision 4 on clinical evaluation or have a plan to do so? Does your clinical evidence rely on equivalence with another device, and, if so, are you able to meet the additional expectations for equivalence as defined in the current guidance and in a much more restrictive manner under the Regulation?
- ✓ Is your device considered a well-established technology under the Regulation? If so, do you have robust post-market data, collected and reviewed systematically under the Directive, to support CE-marking under the Regulation?
- ✓ Do you need to consider additional post-market clinical follow-up in order to gather information to support CE-marking under the Regulation?
- ✓ Do your devices contain substances that are carcinogenic, mutagenic or toxic to reproduction of category 1A or 1B[7], or endocrine disrupting properties for which there is scientific evidence of probable serious effects to human health[8] (hereafter referred to as hazardous substances)? Have you documented a justification for their use?
- ✓ What is the cycle of review for your technical documentation or design dossiers? When do you want to transition CE-marking for existing products to the Regulation? For which products will you renew CE-marking under the Directive during the transition period? What changes will be required to the supporting documentation in order to achieve this?
- ✓ Will your renewal cycle mean that you have some devices CE-marked under the Medical Devices Directives and others under the Medical Devices Regulation during the transition period? How will you manage your activities under the Directive and Regulation simultaneously? What impact will this have on your procedures and capacity?
- ✓ How will you prepare, review, approve and submit the summary of safety and clinical performance as is required for Class III and implantable devices? How will you keep these up-to-date throughout the life cycle of the device(s)?
- ✓ Do you have any products that are own brand labelled? If so, do you have access to all the information to meet the requirements as the virtual manufacturer of such products? Does the original equipment manufacturer have a strategy to support CE-marking to the Regulation? Does your agreement with the original equipment manufacturer need to be updated?
- ✓ Does transitioning your device to be CE-marked under the Regulation have sufficient return on investment to be viable from a business perspective?

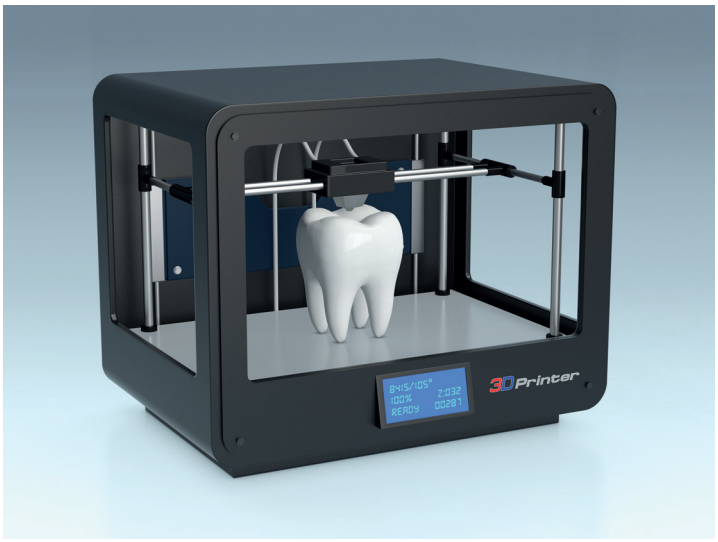
New product development

The requirements of the Regulation will inevitably lead to changes in your procedures for design and development. Design and development plans will need to be adjusted to:

- address the increased requirements for clinical evidence;
- avoid or justify the use of hazardous substances and keep up-to-date information on the substances that are categorized as such;
- generate recommendations on any post-market clinical follow-up that might be needed;
- produce the summary of safety and clinical performance for Class III and implantable devices and make this publicly available;

7. Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
8. Article 59 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) or those criteria that are relevant to human health of the criteria established in the delegated act adopted by the Commission pursuant article 5(3), first paragraph, of Regulation (EU) No 528/2012 of the European Parliament and the Council of 22 May 2012 concerning the making available on the market of and use of biocidal products

The requirements may lead to changes in procedures for design and development



- produce a summary of clinical investigation that is easily understandable by the intended user and make this publicly available; and
- ensure consistency between the risk management plans, determinations of risk and benefit, clinical evaluation reports, post-market surveillance plans and technical documentation.

The product in your research and development pipeline and their development plans need to be reviewed to assess the impact on your ability to launch these products, the effect on the development and launch timelines, and any additional needs for the development plan. The questions above for the current portfolio are also relevant to products in the development pipeline, in addition to the following:

- ✓ What is the launch timeline for products in the pipeline? For products that are scheduled to launch in the transition period for the Regulation, do you intend to launch under the existing provisions and then transition to CE-marking under the Regulation or CE-mark directly under the Regulation?
- ✓ Do you have any novel, Class III implantable devices or Class IIb devices intended to administer a medicinal substance? As these will be subject to the new procedures for clinical evaluation consultation (scrutiny procedures), how will this affect the development plan and timelines for approval?
- ✓ Do you conduct clinical investigations in the EU?
- ✓ Is your sponsor of a clinical investigation established in the EU or is there a legal representative in the EU responsible for ensuring compliance with the sponsor's obligations? Do you have a process to confirm that i) the device conforms to the general safety and performance requirements apart from the aspects covered by the clinical investigation, and ii) every precaution has been taken to protect the health and safety of the patient(s) taking part? Is this confirmation recorded?
- ✓ Does the cost of implementing changes to the design and development plan affect the return on investment and commercial viability of the design and development project?

Quality Management System (QMS)

The Regulation includes requirements for the quality management system (QMS) that presents the QMS as the place where the regulatory requirements come together to be implemented systematically throughout the life cycle of the device. The publication of EN ISO 13485:2016[9], with a transition period until March 2019, overlapping with a large

9. EN ISO 13485:2016, *Medical devices — Quality management systems — Requirements for regulatory purposes*

portion of the transition to the Regulation, will also necessitate changes to the QMS. EN ISO 13485:2016 includes direct reference to incorporating regulatory requirements in the QMS and is compatible with the requirements in the Regulation. It is likely that plans to implement the QMS requirements of the Regulation will also aim to focus on the changes needed to address EN ISO 13485:2016 and that the timing would need to take account of the date of expiration of any EN ISO 13485:2012/ISO 13485:2003 certificates.

Updating the QMS will be on the critical path to being able to CE-mark a device under the Regulation. Furthermore, the QMS will need to drive the changes that are needed in the organization's processes, including ensuring that:

- requirements of the Regulation are considered as an input to management review;
- changes to the QMS are planned to make sure that the integrity of the QMS, and the safety and performance of devices under the control of that QMS, are maintained;
- training on the requirements of the Regulation and new or modified procedures of the QMS are documented, delivered, recorded and shown to be effective; and
- internal audits are conducted to confirm the effective implementation of any new or revised procedures.

The QMS will need to define and document the roles and responsibility of the person responsible for regulatory compliance in the organization of the manufacturer and, where applicable, the authorized representative. The defined responsibilities for this role in the manufacturer's organization are to ensure that:

- conformity of devices is checked in accordance with the QMS under which these devices are manufactured before a product is released;
- technical documentation and the declaration of conformity are drawn up and kept up-to-date;
- post-market surveillance obligations are complied with;
- reporting obligations for vigilance are fulfilled; and,
- investigational devices conform to the general safety and performance requirements, apart from the aspects covered by the clinical investigation, and that every precaution has been taken to protect the health and safety of the patient.

The manufacturer has to have the person responsible for regulatory compliance available within their organization, unless they are recognized as a micro or small enterprise[10]. The Regulation recognizes that, in particular in larger organizations, these responsibilities are likely to be split between different individuals in separate functions. In contrast, the authorized representative, and micro or small enterprises acting as the manufacturer, do not have to have the person in their organization (i.e. the role could be outsourced), but the person does have to be permanently and continuously at their disposal. The definition of these roles in the Regulation is likely to require changes in QMS documentation as well as the job descriptions for certain positions, possibly including the management representative, as well as agreements with external parties if these responsibilities are outsourced.

The plan for implementing the requirements of the Regulation will require documented procedures to be created, approved and implemented for all the new processes needed and procedures for many existing processes to be revised. The plan will also need to include the provision of training on any new or revised procedures.

The following are some key questions to be considered:

- ✓ Is the scope of your organization appropriately documented in your Quality Manual? Does your documentation adequately reflect the authorities and responsibilities as defined in the Regulation?
- ✓ Does the scope of your QMS cover the types of products concerned, taking account of changes in the definition of a device and the inclusion of aesthetic products in the Regulation?
- ✓ Do you have certification to EN ISO 13485? When does your certification to EN ISO 13485:2012 expire? When do you plan to change your certification to EN ISO 13485:2016?

10. Defined in Commission Recommendation 2003/361/EC

- ✓ Have the consequences of the Regulation and the necessary resources been considered in management review? Are the outputs of that discussion recorded?
- ✓ Is your implementation plan documented and available as evidence of quality planning?
- ✓ Have personnel had the necessary training on the Regulation, as appropriate for their responsibilities? Are the personnel that undertake internal audits trained in the new requirements? What records are available of this training?
- ✓ How many new procedures will you need to create and how many existing procedures will you need to revise? What is the timing of the creation or amendment of these procedures?
- ✓ How will your document management system for approval, issue and training on new or revised procedures deal with the number of documents that have to be handled?

Technical documentation

The Regulation defines additional detail for the content of the technical documentation – often referred to as the technical file – for each medical device or family and requires that the information is presented in a clear, organized, readily searchable and unequivocal way. The Regulation also reinforces the emphasis on the requirements driving a life cycle approach to the management of the medical device with the routine updating of the technical documentation including i) in the light of information gathered during post-market surveillance, ii) evolution in the state of the art, and iii) development of changes to standards or common specifications used to support CE-marking. The technical documentation includes the:

- device description and specification, including reference to previous and similar generations of the device;
- information supplied by the manufacturer on labels and accompanying documents, including any symbols used;
- design and manufacturing information;
- demonstration of conformity with general safety and performance requirements;
- risk management information and risk-benefit determination;
- product verification and validation information, including:
  - pre-clinical and clinical data; and
  - additional information in specific cases where a device:
    - incorporates a medicinal product,
    - is manufactured utilizing tissues or cells of human or animal origin, or their derivatives,
    - is composed of substances or a combination of substances that are intended to be introduced into the human body and that are absorbed by or locally dispersed in the human body,
    - contains hazardous substances,
    - is placed on the market in a sterile or defined microbiological condition,
    - is placed on the market with a measuring function, and
    - is to be connected to other device(s) in order to operate as intended;
- technical documentation on PMS, including:
  - post-market surveillance plan; and
  - periodic safety update report for Class II or Class III devices or post-market surveillance report for Class I devices; and
- EU declaration of conformity.

The requirements will drive a life-cycle approach to the management of the device

The technical documentation needs to be controlled as QMS documentation. In large organizations, it is likely that the documentation will be generated by a variety of different functions depending on how the organization is structured – for example quality assurance, manufacturing, supply chain, regulatory affairs, R&D, clinical/medical, safety – and the document management system(s) need to enable the technical documentation to be organized, up-to-date and readily searchable throughout the device life cycle.

The following are some key questions to be considered:

- ✓ Does your document management process enable the technical documentation to be organized and readily searchable, and be kept up-to-date throughout the device life cycle?
- ✓ What new documents do you need to include in your technical documentation?
- ✓ Do you have processes to monitor the adoption of new standards or common specifications, or changes to existing standards or common specifications? How do you assess the effect of such new or revised documents on your technical documentation?

Labelling

There are a lot of implications for the information in labels and instructions for use within the Regulation. Such information might appear on the device itself, on the packaging or in the instructions for use, and in addition if the manufacturer has a website, be made available and kept up-to-date on that website. Every label and instruction for use is likely to need to be changed to comply with the requirements. Implementing label changes can take some time and requires planning; it is likely that all the changes will not be able to be made at the same time but an overall strategy will be needed that includes a solution to have enough space on a label for all the necessary information. The European Commission will be providing further guidance on the labelling requirements in relation to devices containing hazardous substances.

Unique Device Identification (UDI) will have to be implemented. The timing for this implementation is on a longer timescale than the transition for the Regulation and is phased according to the classification of the medical device[11]. While the UDI requirements are similar to those in the USA, there are some differences in the classification of devices between the USA and the EU which might lead to the timescales for implementation diverging.

11. Council of the European Union, Interinstitutional File: 2012/0266 (COD) Proposal for a Regulation of the European Parliament and of the Council on medical devices, and amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009, 27 June 2016, Article 97 paragraph 3 c & ca

Patients will have to be provided with information on certain implants; this will have to be in an appropriate language and written to be readily understandable by a layperson. The information also needs to be kept up-to-date. The patient has to have rapid access to:

- warnings and precautions to be taken by the patient or a healthcare professional;
- information about the expected lifetime of the device and any necessary follow-up; and
- other information to assure a safe use of the device by the patient.

While this information is likely to be made available through a website, the patient also has to be provided with a physical card containing particular information, some of which will be batch specific:

- identification of the device – device name, model, serial number, batch code or lot number and UDI; and
- name, address and the URL of the website of the manufacturer.

The following are some key questions to be considered:

- ✓ Have you completed a gap assessment of the information required on the labels and in the instructions for use?
- ✓ Do you have enough space on your label and in your instructions for use to include the additional required information? If not, how could you accommodate the additional information required?
- ✓ Are there recognized symbols in harmonized standards that you can use for some of the required information or will it need to be presented in multiple languages?
- ✓ Do you supply implants that require provision of an implant card? If so, what is your strategy to provide the implant card in an appropriate language?
- ✓ Are there additional labelling requirements that you need to meet for hazardous substances? Are you monitoring for additional information to be provided by the European Commission on these labelling requirements?
- ✓ When will the requirements for UDI apply to the classes of devices that you are concerned with? Do you have procedures to obtain the necessary UDI for other markets that you can adapt, or do you need to create these procedures?

Post-market Surveillance (PMS)

The Regulation contains significant changes in requirements in the post-market area, including PMS planning and implementation, vigilance reporting and handling field safety corrective actions.

There are enhanced requirements for PMS plans, including conducting active post-market clinical follow-up (PMCF) when necessary, preparing periodic safety update reports (PSUR) for Class II and Class III devices and submitting or having these available for Notified Body Review at defined intervals depending on the device classification, and maintaining post-market surveillance reports (PMSRs) available for Class I devices.

In regards to the requirements for vigilance, information previously contained in guidance has been included in the Regulation itself. The number of exemption rules that obviate the need to report events have been reduced. The timelines for reporting events that are considered serious public health threats or a death or unanticipated serious deterioration in health have remained unchanged at two and ten days respectively, but the timeline for reporting all other events has been decreased from 30 days to 15 days. This reduces the time available to determine whether an event meets the reporting criteria and could lead to submission of more follow-up reports to provide additional information. Taken together, these changes are likely to lead to an increase in the number of reports submitted.

When conducting a Field Safety Corrective Action, the manufacturer has to inform the Competent Authority before implementing the action, unless this would cause a delay with a consequent risk to health.

The regulations include enhanced requirements for PMS planning, including conducting PMCF

The following are some key questions to be considered:

- ✓ What changes need to be made to your current PMS plans to meet the requirements of the Medical Devices Regulation? Will you need to prepare a post-market clinical follow-up (PMCF) plan?
- ✓ How will the changes in timing and exclusion criteria for vigilance reporting affect the number of vigilance reports that you will have to make? Can your current process for investigating complaints reliably submit vigilance reports in a 15-day period? Do you have the resources to handle any foreseen increase in initial and follow-up reports?
- ✓ Do your procedures for implementing Field Safety Corrective Actions include informing the Competent Authority prior to implementation?
- ✓ What changes will you need to make to your procedures in order to prepare PSURs or PMSRs? Do you have the resources to prepare these reports and, when necessary, submit PSURs to your Notified Body for review?

External factors

There are a number of external factors that you will need to take into consideration as you develop your implementation plans.

The Regulation identifies more than 40 areas where additional detail are to be produced by the European Commission in the form of delegated and implementing acts that are yet to be published. In addition, it is likely that a substantial body of guidance will be needed to ensure that the implementation is uniform. In particular, future publications will affect implementation of UDI and the Eudamed database. Eudamed will be the interface for registering economic operators and devices, obtaining a single registration number and communicating between the various parties under the Regulation, including submitting clinical investigation reports, vigilance reports and periodic safety update reports. Certain parts of the information in Eudamed will be publicly accessible. Eudamed will be developed during the transition period and the timing of its rollout will impact on your implementation planning.

In addition, the Regulation will place further responsibilities on your Notified Body, who will also be under heightened scrutiny from Competent Authorities. Notified Bodies will need to be designated under the Regulation and the process of designation will be coordinated at a European level. The designation process will start six months after the adoption of the Regulation and be phased through the transition period. Given the number of Notified Bodies likely to seek designation, and the resources available for the designation process, there will be a lengthy process to designate all the Notified Bodies across the EU.

The following are some key questions to be considered:

- ✓ Does your Notified Body intend to be designated under the applicable Regulation? If so, does the resulting scope of designation of the Notified Body include the class and type of your devices? What is the Notified Body's plan to seek designation and how does this affect your product development plans and product life cycle activities, such as renewal of certificates?
- ✓ Have you discussed your implementation planning with your Notified Body? Do your timelines fit with their expectations and capacity?
- ✓ What is your Notified Body doing to increase its capacity to deal with the additional responsibilities? Are there any limitations on your planning due to their capacity?
- ✓ What is your strategy if your Notified Body is not going to seek designation or is planning to reduce its scope under the Regulation?
- ✓ Do you have a process to monitor the development and adoption of implementing acts and guidance documents issued by the European Commission?
- ✓ Have you defined the roles and responsibilities within your organization to interact with the Eudamed database? Do your systems have the capability to produce an output that will be compatible with the Eudamed database? If not, do you have a plan to develop such an interface? Do you have the resources to input the necessary information into the Eudamed database?

Conclusion

The Medical Device and In Vitro Medical Device Regulations are the result of the planned revision of the EU Medical Devices Directives and represent the most significant change to the European legislation for medical devices for nearly 20 years. Your understanding of the requirements is key to your ability to develop an implementation plan for your specific situation in order to ensure continuing regulatory compliance and your ability to provide the EU market with safe medical devices that perform as intended.

In order to develop your regulatory strategy for the transition from CE mark under the applicable Directive to the Regulation and your detailed project plan, you need input on the role(s) of your organization under the Regulation, its size, the way that you are organized and managed, the types of devices for which you have regulatory accountability, and your strategic business intentions. Developing the sequence of activities and the responsibilities to carry them out will be important and will involve:

- deciding on the date at which new products will start to be CE-marked against the Regulation for launch;
- modifying the procedures that govern design and development, and particularly the generation of clinical evidence, so that new products have the necessary information to demonstrate compliance when they are ready to launch;
- understanding the expiration of existing certificates and declarations of conformity, and when the first of the existing product portfolio needs to transition its CE-mark to the Regulation;
- identifying any additional clinical evidence that is needed to support the existing product portfolio and planning to generate this clinical evidence in time to transition the CE-marking;
- evaluating all changes to the labels and instructions for use, including applicable service manuals, and planning a labelling strategy, recognizing that there can be long lead times for the labelling and printing changes;
- addressing the changes to the QMS so that the changes are planned and implemented systematically, driven by quality planning processes, supported by management review and internal audit;
- updating the life cycle processes to drive any changes needed to support CE-marking of the existing product portfolio under the Regulation;
- revising the procedures for post-market activities to meet the requirements for vigilance reporting and the creation of the needed reports of post-market surveillance, including the timing by which the first such report will need to be submitted to your Notified Body; and

- monitoring the designation of your Notified Body, the development of delegated and implementing acts and the publication of guidance on interpretation by the European Commission.

Given the magnitude of the changes involved, it is prudent to start developing your implementation plans as soon as possible in order to have time to navigate the complexities and accommodate external factors outside your direct control. You need to monitor for the publication of the Regulation(s) in the Official Journal of the European Union because the transition period comes into effect 20 days after publication.

BSI is grateful for the help of the following people in the development of the white paper series.

Authors

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Eamonn Hoxey joined Johnson & Johnson in 2000 and is Vice President of Quality & Compliance Strategic Programs for J&J's Medical Devices companies. Prior to joining J&J, Eamonn spent 16 years with the UK Medical Devices Agency, including six years as Head of Device Technology and Safety. Eamonn is chairman of ISO/TC 198, Sterilization of healthcare products, past Chairman of ISO/TC 210, Quality Management and related general aspects for medical devices, and is an active member of the working group responsible for ISO 13485, the quality management system standard for medical devices. Eamonn is chair-elect of the Board of Directors of the Association for the Advancement of Medical Instrumentation (AAMI).

Expert Reviewers

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Phil took on this role in June 2016. Previous to joining the Trade Association, Phil worked within the industry, with Smith & Nephew, Genzyme, Wright Medical and KCI/Acelity, as well as working as a consultant with Quintiles and owning his own consulting Company. Phil has been involved with medical device regulatory and quality matters for nearly 30 years, covering products ranging from Class I through to human and animal tissue combinations. He is currently a Fellow of The Organisation for Professionals in Regulatory Affairs (TOPRA).

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Maria is a former official of the US FDA Center for Devices and Radiological Health, with over 35 years' regulatory experience. DLC is a full service Clinical Research Organization (CRO) that also helps companies meet US and EU medical device and IVD regulatory and quality system requirements, and provides US Agent and EU Authorized Representative services. Maria holds US degrees in pharmacy and medicine with a clinical and anatomical pathology specialty. She has served as a UK Institute of Quality Assurance registered lead auditor and is a member of ISO/TC 194/WG 4 on medical device clinical investigations.

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Sabina joined Philips Healthcare in 2011 after an extensive career as pharmaceutical and medical device regulator in the Dutch Government, in which she has represented the Netherlands in several EU and international working groups. In her present role, she is also acting as Vice-Chair EU Regulatory Affairs Focus Groups of European trade association for the Radiological, Electromedical and Healthcare IT Industry (COCIR), Chair of Netherlands Chapter of Regulatory Affairs Professional Society (RAPS) and Member of the Content Committee for Europe and Faculty Chair for medical devices of Drug Information Association (DIA).

Advisory Panel

Jane Edwards, Global Product Manager, BSI

Jane holds a BSc in Chemistry and an MBA from Durham University. She has over 10 years' experience in the medical device industry, having previously worked for Coloplast in their ostomy and continence business. Jane's experience includes working within the pharmaceutical, chemical and telecoms industries for Glaxo Wellcome, ICI and Ericsson, allowing her to bring a depth of knowledge from across many industries and technologies. Her current role in BSI allows her to work with technical reviewers across all disciplines ensuring that all BSI communications are accurate and relevant. She is a member of the European Medical Writers Association.

Leo Eisner, Principal consultant of Eisner Safety Consultants

Leo's firm specializes in helping clients through product safety, international regulatory and quality system processes. Leo is a Notified Body Auditor for NEMKO (previously for NSAI & TÜV PS). Leo is the convenor of IEC/SC 62D/JWG 9 (IEC/ISO 80601-2-58) and a committee member of US TAG for TC 62/SC 62A and SC 62D. Leo is a registered professional engineer in safety and has 28 years' experience in product safety. Leo is a member of RAPS, AAMI, ASQ, and IEEE. He is manager of the LinkedIn discussion group IEC 60601 Series, *Medical Electrical Equipment*.

Terry Longman, Standards Consultant

Terry has been employed in the medical equipment industry all his working life. Having qualified as a mechanical engineer he then, over the following 40+ years, experienced both sides of the medical industry, the technical side and the commercial side, with various companies that manufactured everything from capital medical equipment to consumable medical devices. Since 1995 he has been a self-employed consultant specializing in all matters related to standards, including advising companies on compliance with the European Medical Device Directive and US FDA directives. He represents the members of the British Anaesthetic and Respiratory Manufacturers Association (BAREMA) at BSI meetings. BAREMA comprises manufacturers from all parts of the Anaesthetic and Respiratory industry. He also represents several individual companies at ISO and CEN meetings. Terry is on several national, European and international standards committees, the following as Chairman: CEN/TC 215, CH/121, CH/121/1, CH/121/5, CH/121/9 and CH/210/5.

Pete Philips, Director of the Surgical Materials Testing Laboratory (SMTL)

Pete is based in Bridgend in South Wales, where the SMTL is funded by the Welsh Government to test medical devices for the Welsh NHS and to provide technical advice on medical devices. He has worked in the medical devices field for 30+ years, and sits on a number of BSI, CEN and ISO medical device committees and groups. He chairs the Welsh Non-Luer Connectors Reference Group (WNCRG) for the Welsh Government, which is coordinating the implementation of new ISO compliant non-Luer connectors across the Welsh NHS, and represents the Welsh Government on medical devices on various other groups.

Paul Sim, Medical Devices Knowledge Manager, BSI Standards

Paul has worked in the healthcare industry for over 35 years, joining BSI in 2010 to lead the organization in Saudi Arabia where it had been designated as a Conformity Assessment Body. Later, he managed BSI's Unannounced Audits programme. Since October 2015 he has been working with both the Notified Body and Standards organizations looking at how best to use the knowledge, competencies and expertise in both. Previously, he held senior RA/QA leadership positions at Spacelabs Healthcare, Teleflex Medical, Smiths Medical and Ohmeda (formerly BOC Group healthcare business). Paul is a member of the Association of British Healthcare Industries (ABHI) Technical Policy Group and Convenor of the ABHI ISO/TC 210 Mirror Group. He is Convenor of the BSI Committee which monitors all of the work undertaken by ISO/TC 210, and Convenor of the BSI Subcommittee dealing with Quality Systems. As UK Delegation Leader to ISO/TC 210, he is also actively involved in the work of national, European and international standards committees.

Published white papers

How to Prepare for and Implement the Upcoming MDR – Dos and don'ts, Gert Bos and Erik Vollebregt

How to Prepare for and Implement the Upcoming IVDR: Dos and Don'ts, Erik Vollebregt and Gert Bos

The Differences and Similarities between ISO 9001 and ISO 13485, Mark Swanson

ISO 13485: The Proposed Changes and What They Mean for You, Bill Enos and Mark Swanson

The Proposed EU Regulations for Medical and In Vitro Diagnostic Devices: An Overview of the Likely Outcomes and Consequences for the Market, Gert Bos and Erik Vollebregt

Generating Clinical Evaluation Reports – A Guide to Effectively Analysing Medical Device Safety and Performance, Hassan Achakri, Peter Fennema and Itoro Udofia

Effective Post-market Surveillance – Understanding and Conducting Vigilance and Post-market Clinical Follow-up, Ibim Tariah and Rebecca Pine

What You Need to Know About the FDA's UDI System Final Rule, Jay Crowley and Amy Fowler

Engaging Stakeholders in the Home Medical Device Market: Delivering Personalized and Integrated Care, Kristin Bayer, Laura Mitchell, Sharmila Gardner and Rebecca Pine

Negotiating the Innovation and Regulatory Conundrum, Mike Schmidt and Jon Sherman

The Growing Role of Human Factors and Usability Engineering for Medical Devices: What's Required in the New Regulatory Landscape?
Bob North

Forthcoming white papers

Sterilization Practices in Response to Device Innovation (working title)

Clinical Data: Away from Clinical Equivalence (working title)

Cyber Security for Medical Devices (working title)

Global Incident Reporting (working title)

UDI – The Differences between the EU and the FDA (working title)

Pharmaceutical Medical Device Combination Products (working title)

About BSI Group

BSI (British Standards Institution) is the business standards company that equips businesses with the necessary solutions to turn standards of best practice into habits of excellence. Formed in 1901, BSI was the world's first National Standards Body and a founding member of the International Organization for Standardization (ISO). Over a century later it continues to facilitate business improvement across the globe by helping its clients drive performance, manage risk and grow sustainably through the adoption of international management systems standards, many of which BSI originated. Renowned for its marks of excellence including the consumer recognized BSI Kitemark™, BSI's influence spans multiple sectors including aerospace, construction, energy, engineering, finance, healthcare, IT and retail. With over 70,000 clients in 150 countries, BSI is an organization whose standards inspire excellence across the globe.

BSI is keen to hear your views on this paper, or for further information please contact us here:
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