MEDICAL DEVICES: CHANGES TO ISO13485 / MDD AND IVD DIRECTIVES

Introduction

The medical device industry is one of the biggest industries within the healthcare sector, driven by the continual introduction of new technologies. Recent years have witnessed significant growth in innovative and new technologies which have resulted in the development of state-of-the-art medical devices and growth across the sector.

The global medical device market is currently valued at $228 billion, up from $164 billion in 2010 and projected to reach $440 billion by 2018. It is growing at an approximate 4.4 per cent compound annual growth rate, year on year. This growth is expected to outpace the prescription drug market by 2018, which in comparison is growing at a rate of 2.5 per cent.

However, the medical device market is facing a significant regulatory challenge which places more emphasis on quality management systems (QMS) and could prevent device manufacturers and suppliers accessing key EU and US markets if they don't comply.

Changes to ISO13485

The world's most popular standard for medical device quality management has been significantly revised for the first time since 2003 (BSI Group, 2016) and is now known as ISO13485:2016. In most cases, the changes to the standard simply close the gaps between today's quality and regulatory requirements and what was expected 10 years ago.

A significant driver of the revision was the need for a truly global harmonised standard/platform for quality management systems, and emphasising a risk management approach throughout a devices whole life-cycle.

> **According to the International Organisation for Standardisation (ISO), 'this International Standard is intended to facilitate global alignment of appropriate regulatory requirements for quality management systems applicable to organisations involved in one or more stages of the life-cycle of a medical device.'**

In layman's terms, this means that any Medical Device (MD) or In-Vito Diagnostic (IVD) that doesn't comply with the new ISO13485:2016 regulations in a three year time frame will be refused access to key markets including the EU and EEA. This will have huge implications for manufacturers and third party suppliers, which now have less than three years to upgrade their quality management systems (QMS) to ISO13485:2016, to ensure medical device manufacturers/organisations can operate lawfully.

The new revision places a greater emphasis on the QMS throughout the whole supply chain and product life-cycle, as well as more specific device usability and post-market surveillance requirements. Over the next remaining two years, ISO 13485:2003 and ISO 13485:2016 will coexist, allowing device manufacturers, accreditation or certification bodies and regulators time to transition to the new standard (RAPS, 2016).

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However, not all devices will require a complete QMS upgrade to ISO13485:2016. The following sections explain which devices **will** require upgrading to ISO13485:2016.

CE marking

Any MD or IVD that is manufactured or sold on the single market within the EU and European Economic Area (EEA) must have the CE marking, as this shows a product complies with EU health, safety and environmental requirements. In order to achieve CE marking, manufacturers and third party suppliers must upgrade or replace their existing QMS to conform to the new ISO13485:2016 standard, and also the new MDR and IVD Regulations, to cover:

- Incorporation of risk-based approaches to safety and performance of the medical device and in meeting regulatory requirements beyond product realisation
- Increased linkage with regulatory requirements, and in particular regulatory documentation
- Harmonising software validation for applications for QMS, process control, and monitoring and measurement
- Emphasis on infrastructure for orderly handling, production of sterile medical devices and validation of sterile barrier properties
- The obligation to have a person responsible for regulatory compliance (including final release to the market) available within the organisation
- Consideration in design and development of usability, use of standards, verification and validation planning, design transfer and design records
- Emphasis on complaints, reporting to regulatory authorities and consideration of post-market surveillance
- Planning, documenting and implementing corrective action and preventive action without undue delay

IVD Directive (IVDD) vs IVD Regulation (IVDR)

IVDs are medical devices (instruments, reagents and systems) used to determine medical information for the diagnosis of a disease or condition.

The previous IVD 'Directive' (IVDD) 98/79/EC (which became mandatory in December 2003) provided regulatory requirements that facilitated free trade within the EU and EEA. The aim of the Directive was to ensure patient health and safety and to achieve performance levels set out by the manufacturer, who would have then been individually responsible for ensuring their products complied with essential requirements of the Directive before they could affix the CE marking and legally gain access and free movement within the EU and EEA (BSI Group).

However, the Directive was written with very limited scope for manufacturers to fit their devices into one of the four specific categories set out by the Directive; these are:

- Self-declare
- Self-test
- List A
- List B

This meant many manufacturers and third party suppliers would 'self-declare' that their IVD devices met the requirements of the IVDD by simply carrying out a conformity assessment – without oversight from a Notified Body (NB) - which could pave the way for safety issues.

What's changed?

The new IVD 'Regulation' (IVDR) has been proposed for a number of reasons, including the need to bring legislation in line with the pace of technological and scientific progress over the last 20 years. The Regulation requires that 80 per cent of products that previously didn't require intervention from Notified Bodies (i.e. self-declared devices) will now need reviewing, in what has been coined a 'paradigm shift' (MDTI).

Under the new IVD regulation, IVDs will be classified according to the risk they pose both to individuals, users and public health:

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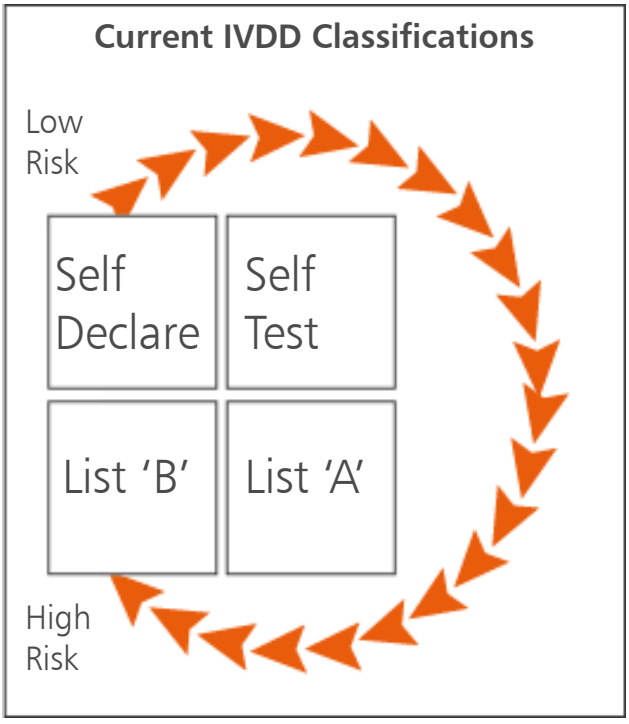
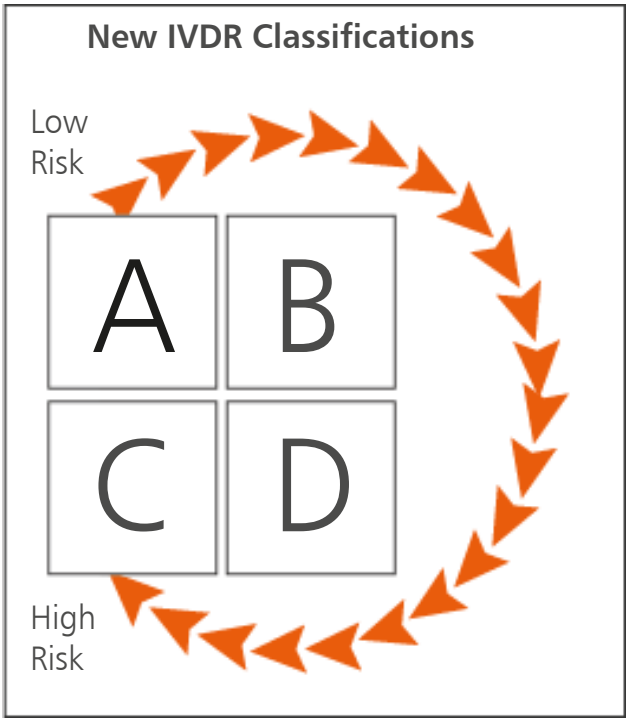
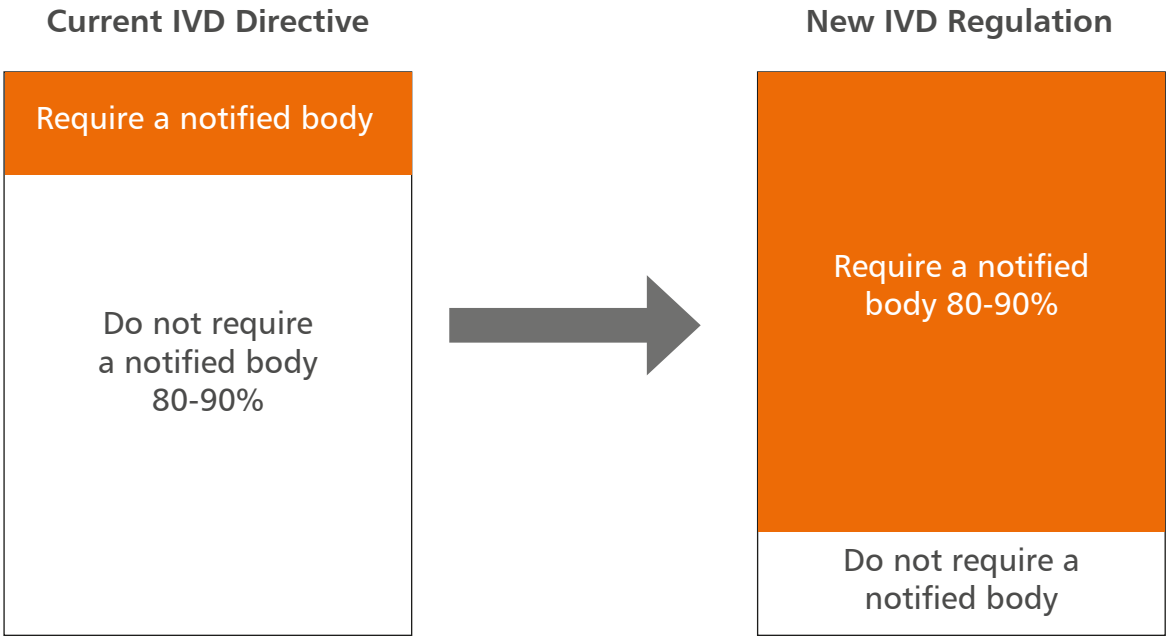
Current (IVDD)	New (IVDR)	Explanation	Examples*
Self-declare	Class A	Low risk products (may not require pre-market submission of technical info)	Clinical Chemistry Analyser, prepared selective culture media
Self-test	Class B	Slightly higher risk (will need approved QA system based on ISO13485 but may still not require pre-market submission of technical info)	Vitamin B12, Pregnancy self testing, Anti-Nuclear Antibody, Urine test strips
List A	Class C	Slightly higher risk again (as above, with addition of pre-market submission of technical info to notified bodies)	Blood glucose self-testing, HLA typing, PSA screening, Rubella
List B	Class D	Higher risk products (as above with more data expected)	HIV Blood donor screening, HIV Blood diagnostic

*The examples provided are for illustration only







Source: BSI Group

MD Directive (MDD) vs MD Regulation (MDR)

Medical Devices (MD) are any instrument, apparatus, appliance, material or other article, whether used alone or in combination on human beings for the purpose of:

- Diagnosis, prevention, monitoring, treatment or alleviation of disease
- Diagnosis, monitoring, treatment, alleviation of or compensation for an injury or handicap
- Investigation, replacement or modification of the anatomy or of a physiological process
- Control of conception

Before the new MDR regulation came into force, the MD 'Directive' (MDD) meant that medical device manufacturers could come up with their own internal methods of compliance if they followed any of the MEDDEVs and/or EN ISO Norms, which caused inconsistencies and safety issues amongst manufacturers. The Directive also allowed manufacturers to pay to be audited by a notified body, which the US medical devices industry regulator, the Food & Drugs Administration (FDA), thought was too 'cosy a relationship'.

What's changed?

The Poly Implant Prothèse (PIP) breast implant scandal in 2010 highlighted the consequences of extreme non-compliance, resulting in the need for stricter scrutiny of a device manufacturer's compliance to a Regulation, rather than a Directive. Thus the MD 'Regulation' (MDR) has been introduced, **mandating** all EU Member States (and EEA members) to transpose the wording **exactly** from the Regulation into their local language and laws.

This has now changed how a notified body is expected to audit a device manufacturer:

- ISO 13485:2016 has now been released, with significantly stronger emphasis on a risk-based approach throughout all facets of the whole product lifecycle
- Unannounced site audits are now mandatory, and align closer with the FDA methodology

With ISO13485:2016 now in effect, Notified Body supervision will change considerably by their respective Competent Authorities (CA), and all Notified Bodies will need to apply for a new designation during the transitional period. It is currently expected that as a result, a significant number of Notified Bodies (estimated at 50 per cent) may not be re-notified at all or may not be notified for the same scope under the new Regulation.

Consequently, manufacturers must be aware that they may need to change Notified Body and act accordingly if their current Notified Body is not able to support the manufacturer anymore (BSI Group).

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Impact of new regulations

Generally speaking, the new regulations won't cause any major threats to the medical device industry as their sole purpose is to ensure safety and consistency throughout the medical profession.

However, the regulations are likely to increase the administrative burden on organisations as a result of added registration requirements, plus manufacturers will need to revisit all technical files and their quality management system for all their devices currently on the market. Additional clinical evidence for these devices may also need generating in order to be able to transition to the new regulations (BSI Group).

To mitigate the risk of not meeting the regulation deadlines, manufacturers are urged to move quickly and plan for the transition in a timely and detailed way.

How can manufacturers and third party suppliers prepare?

Any organisation that manufactures or supplies medical devices only has three years to upgrade its medical devices (MDs) and ISO13485:2016 compliance, and five years for IVDR compliance. While the transition periods seem to give plenty of time to introduce the necessary changes, the extent and implications of the changes are significant, and it is expected to take between six and eighteen months to fully upgrade the QMS and Technical Construction Files. Organisations are now being mandated to plan this transition period by their Notified Bodies immediately.

Opportunities

These huge quality and regulatory changes mean that the industry is facing an international shortage of medical device consultants, both in quality assurance (QA) and regulatory affairs (RA) that are qualified to support the sheer volume of organisations needing to upgrade or replace their QMS/Technical Documentation ahead of the fast-approaching deadlines. It is estimated that around 300,000 QA consultants alone will be required, though currently only about 36,000 have the relevant expertise.

There is also a considerable disparity between the number of organisations in each sector, which means that as well as a general shortage, there are far fewer IVD qualified consultants than there are MD consultants. Procorre is addressing this disparity by offering training to its own consultants.

We have established an excellent working relationship with the Notified Bodies in Europe since 1996, and are recognised world leaders in our field of expertise. Procorre working in partnership with European Device Solutions Ltd represent your business and products throughout the whole CE marking process including complaint handling, and dealing with any adverse incident reports which may arise in the future.

More information

For more information, please visit http://www.procorre.com/sectors/medical-devices-sector-overview