The „Periodic Safety Update Report (PSUR)“ – A new player on the pitch

Safety of medical products as basis of the MDR

A main goal of the reorganization of access requirements for medical products in the European Economic Area by the EU regulation 2017/745/EU (MDR) is the guarantee of product safety for the whole product lifecycle.

As early as in the considerations for the MDR, the European Parliament and the Council of the European Union presented that manufacturers are obligated to establish a quality management system (QMS) which provides the possibility to keep the performance within the regular usage under surveillance. That system for post-market surveillance (PMS) has the aim to decide about necessary measures to ensure the safety of patient and user. With systematic and active collection of application experiences from various sources, the data basis to that will be created.

Basics of a useful PMS strategy

An important part of post-market surveillance is the collection and evaluation of information and complaints from customers/users, feedback from the sales department (e.g. medical products consultant) or the maintenance service as well as internal audit results. Besides the surveillance of the own product, observation of comparator products is part of the PMS strategy. That applies in particular for clinical evaluation reports on the so called literature route based on equivalency. A systematic PMS procedure still includes the analysis of official notifications (BfArM (Federal Institute for Drugs and Medical Devices), MAUDE-database) as well as the evaluation of scientific literature about the own and comparator products.

The Medical Devices Directive 93/42/EEC obligated manufacturers to implement monitoring schemes within their QMS to routinely check the clinical efficacy and safety on the market and in application, regarding the product in question. But there were no specified guidelines for the exact implementation of such a PMS process. It was and still is the responsibility of the manufacturer to develop a PMS concept for the specific product.

Now, these guidelines are substantiated and significantly increased in their importance by the MDR in a separate chapter VII and annex III.

Article 83 demands a PMS system as part of the QMS that collects and assesses data about quality, performance and safety of the product in an

- active
- systematic
- continuous manner

Manufacturers with an appropriate QMS have nothing to fear under the new general conditions. But, additional requirements of article 83 for such a PMS system demand for an adjustment. This should be possible to implement into a good QMS. As mentioned before, manufacturers who consistently meet existing obligations of 93/42/EEC for PMS will be able to arrange with the new regulations.

The MDR requires the establishment of new instruments which have to fit and differentiate to the relation between PMS and PMCF (Post-Market Clinical Follow-up), clinical evaluation and risk management. Key elements consist, in addition to the establishment of a PMS system, of extended documentation and reporting duties, as in the PMCF plan and PMCF report according to article 61 as well as the PMS plan (article 84; plan for surveillance after placing on the market) with the PMS report (report about surveillance after placing on the market; article 85 for class I products), PSUR (constantly updated report on safety; article 86 for class IIa and above) and finally with the SSCP (short report about safety and clinical performance; article 32 for class III products/implants). As a whole, these processes/reports provide the database to secure safety and performance of medical products, introduced to the market.

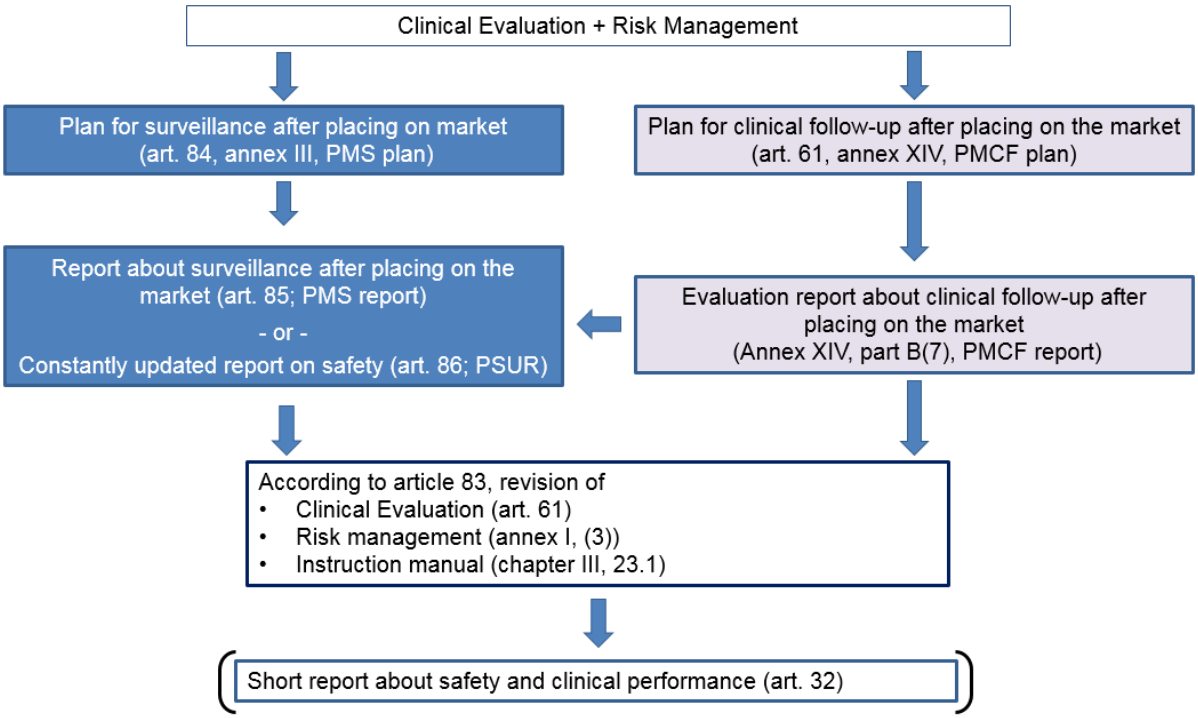

Figure 1: Flow chart of the entire PMS process, derived from the demands of the MDR

Initially and ideally accompanying the development process and compulsory within the conformity assessment procedure the risk-benefit ratio of a medical product is assessed by a risk analysis and a clinical evaluation. These processes record the given level of findings and the prospectively developed assumptions about application risks in the context of the intended use of the product.

However, every conformity assessment procedure is more or less based on a snapshot at the point in time of its creation. Despite the best deduction of general and specific knowledge about the product, the product class and the medical application environment a medical product has to proof itself “in reality”. The residual risks, detected within the course of clinical evaluation and clinical trial, as well as the risk-benefit ratio has to be constantly revaluated with insights of application.

The development of the necessary data basis is, beside the following specification of actions for the safety guarantee, the task of the entire PMS process.

The PSUR as central element of PMS

To create an efficient process, tasks of its single elements have to be clearly defined. Moreover, channels of information have to be built to focus gathered knowledge and process it at the right place.

For this, PSUR is in a central position. Central and recent PMS findings of a period under review (class IIa: at least every 2 years; class IIb/implants or higher: once a year) are collected and analyzed in it.

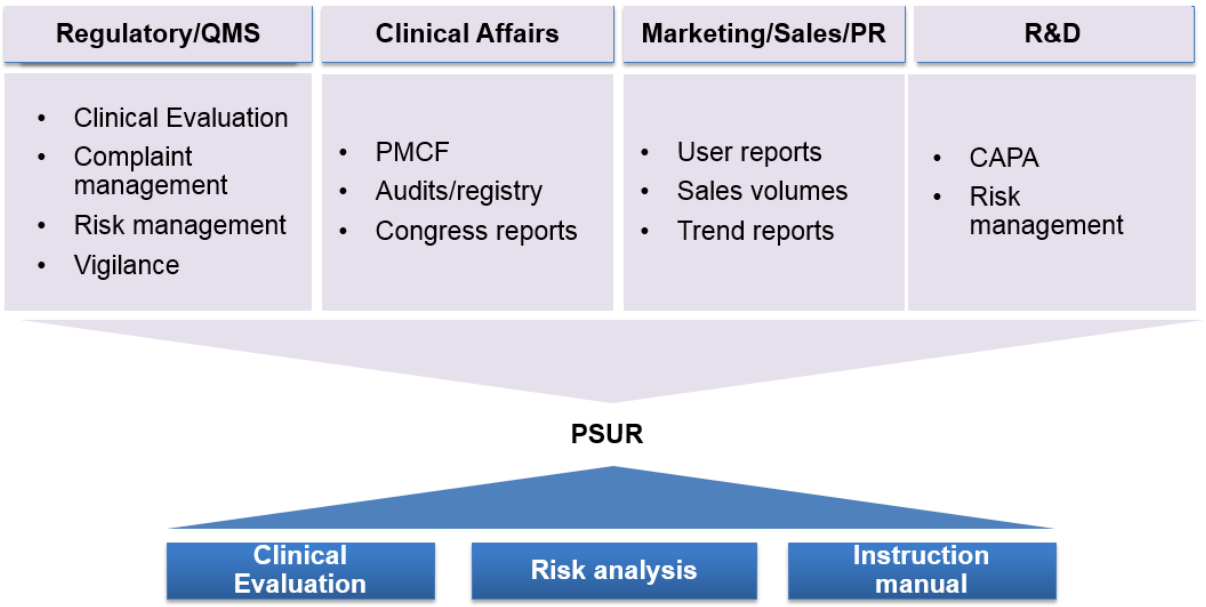

Figure 2: The establishment of a PSUR demands the integration of different information lines, therefore the development of a “knowledge management”.

The PSUR has to be clearly structured to enable a comparison of findings with the existing knowledge base (presented in the risk analysis and the clinical evaluation). Therefore, the PSUR is supposed to clearly distinguished from these documents. The clinical evaluation/risk analysis provides the cumulative level of knowledge of preceded periods under review. The PSUR (fed with recent PMS/PMCF experiences) serves the periodic comparison of passed on safety insights as well as introduced measures (if existing).

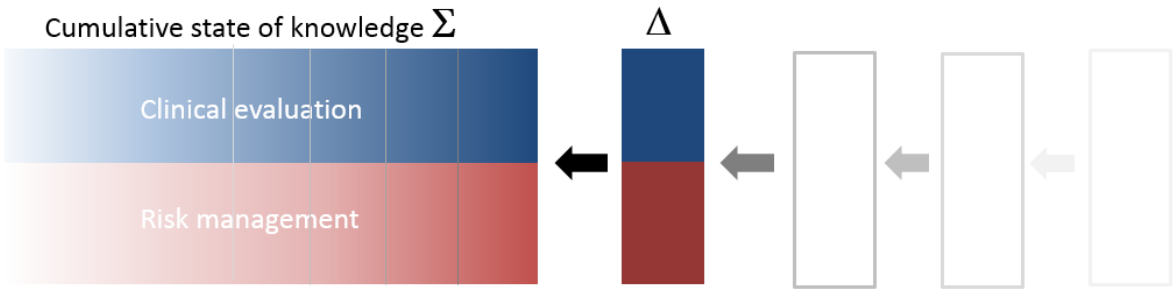

Figure 3: Starting with this model, PSUR focuses on the recent period under review and can be, depending on new state of knowledge, kept slim.

Recipient of the PSUR are at different stages of the reporting duty, the Notified Body and the responsible authority. To reach consistent evaluation and clarity, standardized report templates and policies are supposed to be created by the legislator.

The effort for manufacturers is not located in the actual creation of the PSUR which, despite its new character in the MDR, does not require new contents. The conclusion of the risk assessment of benefits, the insights of PMCF and quantitative data regarding sales volumes and application quantities must be available by mechanisms required under the Directive 93/42/EWG.

Nevertheless, manufacturers have to establish processes and data flows to meet the substantiated PMS requirements and to reach valid conclusions. A thoughtfully designed and consistently implemented PMS plan verifies the safety and performance of medical products or identifies possible safety issues early and defines suitable actions.