NATIONWIDE MEDICAL DEVICE INVENTORY. WHAT TO FOCUS ON

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During 2016, the Biomedical Technology Unit of the University of Patras established a Nationwide Medical Device inventory, within the framework of a national project. This inventory project lasted 5 months, covered 5 out of the 7 national healthcare regions (54 hospitals and 107 health centers) and resulted to an inventory electronic database of 34.000 devices. This paper presents the actions taken, the obstacles that have been overpassed and the lessons learned.

Medical Device (MD) inventory at a Regional or National level consists the basis where all the MD related decisions and policy designs should rely on. Inventory data is a significant tool for any plan or decision relevant to MD management, renewal, reallocation, etc. as well as for the design and planning of healthcare policies [1], [2]. In order for a large scale inventory project to be successful, it should be designed and planned in the most detailed way. It is essential that parameters such as resources, inventory protocol, codification and uniformity of the data along with software tools to be examined extensively.

The validity of the final project's results mostly depends on data integrity and uniformity. In this direction, two obstacles had to be overcome: the use of codifications and a methodology that had to be commonly followed by the staff. Since the Unique Device Identification (UDI) has not yet been fully implemented, codification for manufactures and models does not exist. In addition, the classification of a device into the correct MD group is not a straight forward process and therefore requires special training. Besides that, the approaches on which devices and what data should be registered, as well as on how to collect and register the information should be predefined and all staff members trained accordingly. For these reasons, an inventory team of a dozen biomedical engineers was formed and a specific and clear inventory protocol was developed on which the team was then trained.

Figure 1 Screenshot from the MD management system used for the project.

Due to the labyrinthine structure of healthcare facilities and given that a MD can be found anywhere (storage areas, cupboards, etc.), the cooperation of the hospitals' staff is more than crucial. For these reasons, the goals and the benefits of the project were explained to both the hospital administration and the personnel. Finally, since an inventory is only a "picture" of the current situation, the establishment of update procedures (who, how, what, when, where) have been designed and prepared before the end of the inventory.
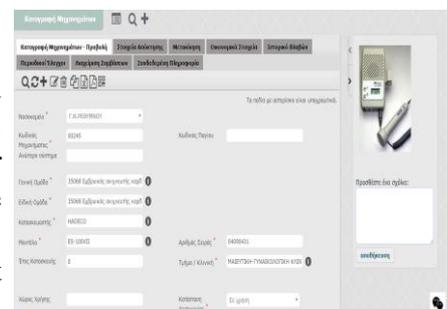
The project has been successfully implemented and in most cases the collaboration with the local staff was very good. The inventory was corrected and unified by a small team of experts at the end of the project and was delivered to the health units and the regional health authorities in an electronic form ready to be used by a medical equipment management system [3].

[1] Bronzino, Joseph D. Biomedical engineering handbook. Vol. 2. CRC press, 1999.
[2] Bliznakov, Z.; Malataras, P.; Pallikarakis, N.(2007) "Medical Equipment Inventorying and Installation of a Web-based Management System – Pilot Application in the Periphery of Crete, Greece" 11th Mediterranean Conference on Medical and Biomedical Engineering and Computing 2007- MEDICON 2007, 26 - 30 June 2007, Ljubljana, Slovenia.
[3] P.G. Malataras, Z.B. Bliznakov, N.E. Pallikarakis (2014) Re-Engineering a Medical Devices Management Software System: The Web Approach, International Journal of Reliable and Quality E-Healthcare 3(1):9-18