Workflow in the Operating Room: 
Review of Arrowhead 2004 Seminar on Imaging and Informatics

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Abstract

This review paper is based on the 2004 UCLA Seminar on Imaging and Informatics (http://www.radnet.ucla.edu/Arrowhead2004/) which is a joint endeavour between the UCLA and the CARS organization, focussing on workflow analysis tools and the digital operating room. Eleven specific presentations of the Arrowhead Seminar have been summarized in this review referring to redesigning perioperative care for a high velocity OR, intraoperative ultrasound process and model, surgical workflow and surgical PACS, an integrated view, interactions in the surgical OR, workflow automation strategies and target applications, visualisation solutions for the operating room, navigating the fifth dimension, and design of digital operating rooms and interventional suites.

Key words: Surgical workflow (S-WF), Surgical PACS (S-PACS), Digital Operating Room (DOR).

1. Introduction

A recent report predicted an increase in demand for surgical services to be as high as 14 to 47% in the workload of all surgical fields by 2020 [1]. Difficulties which are already now apparent in the OR will be amplified in the near future and it is therefore necessary to address this situation and to develop strategies to handle the workload. Appropriate use of information and communication systems and mechatronic systems as part of a re-engineered workflow is considered by many experts a significant contribution to solve the problem. A number of special workshops and seminars which have addressed this and related problems have taken place in recent years in Europe and in the USA. The most notable recent meetings in the USA with a focus on surgical workflow issues were:

1. UCLA Seminars on Imaging and Informatics, September 22-25, 2003, Lake Arrowhead, CA, USA
3. CARS/SPIE “Joint meeting on Surgical Workflow, PACS and the OR of the Future”, June 26, 2004, Chicago, IL, USA [8].
4. UCLA Seminars on Imaging and Informatics, October 4-6, 2004, Lake Arrowhead, CA, USA

Of particular significance is the Lake Arrowhead 2004 UCLA Seminar on Imaging and Informatics, in which many examples of clinical workflows were presented and discussed as regards their impact.