

I.12.2. Medicine Based Engineering and Informatics to Foster Patient Physician Relationship**Franco Simini**

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E-mail: simini@fing.edu.uy**ABSTRACT**

Biomedical Engineering and Medical Informatics can indirectly better patient physician relationship by new instruments and software applications designed by interdisciplinary teams. The necessity of pregnancy, labor and new born data to lower maternal and neonatal mortality in the 1980s gave rise to the Perinatal Information System, SIP, and Personalized Perinatal System, SEPEPE, in the 2020's. A similar personalized follow up cardiac failure system, SIMIC, confirms the innovative concept of Prescription App. The need to avoid lower limb lesions during rehabilitation prompted DINABANG as a force and velocity portable instrument to be used in the sports field. Naive translation of information systems rationale to clinical use as Electronic Clinical Records still finds resistance to adoption, due to lack of interdisciplinary design. A disruptive innovation is needed to help physicians to take notes with no templates but rather automatic reminders of similar cases, reducing time-to-diagnostic and minimizing errors/oversights. Examples of technology developed from clinical perspective are ABDOPRE, an automatic control vacuum bell over the abdomen to treat intraabdominal hypertension with vesical catheter as control variable, PRAXIS to capture the single physician's case mix to easily solve future patients with the help of reasoning sequences and NEFROVOL as a non invasive measure of polycystic kidney volume. Technology transfer is the epilogue of research, described with the examples of pulmonary mechanics measurement instrument MECVENT, hyperbilirrubinaemia reduction lamp BiliLED and portable lower limb kinetics meter DINABANG. The lessons learned for a successful commercialization are (i) patent owners should work full time, (ii) incubation and support is secured and (iii) specification/development of software or device are done by an interdisciplinary team. Biomedical Engineering and Medical Informatics converge on a broad interdisciplinary area that could be identified as Medical Engineering.

Key Words: Biomedical Engineering, Medical Informatics, Biomedical devices, Software enhancements of Medicine