ProCure

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ProCure Medical (PCM) is a company based in the Enterprise and Research Incubation Centre (ERIC) at IT Carlow. Established in 2012, this innovative and research focused company identifies therapeutic areas of unmet medical need, and creates solutions with commercial potential to satisfy these. Their two pronged approach is to develop and acquire high value pharmaceuticals and diagnostics that help improve hospital patient management and strategies for infections caused by bacteria and fungi.

Rapid identification of microorganisms in clinical samples enables expedient change from broad-spectrum agents to targeted antimicrobial therapy. This switch minimizes risks of antibiotics, namely, disruption of normal flora, toxic side effects and selective pressure or resistance. There is a critical need for new technologies in hospital clinical microbiology, particularly for bloodstream infections (BSI's). BSI's associated condition known as sepsis syndromes is of particular importance because of the morbidity and mortality which is among the highest of all infections.

The incidence of BSI's is expected to increase in the coming years, adding an enormous social and economic burden to healthcare. According to the literature, the risk of death from septic shock increases by over 7% with every hour that passes from the onset of shock until the start of targeted therapy.

Despite a published depth of evidence showing how the timely administration of an effective antibiotic saves lives and lowers overall hospital and antibiotic costs, the tools in hospital laboratories are primarily based on techniques that evolved 30 to 40 years ago. PCM is harnessing the latest Fluorescent In-Situ Hybridisation (FISH) technology to circumvent this issue of lab time for reports from positive blood cultures to the administration of the correct antibiotic and/or anti-fungal. This approach uses fluorescent labelled probes to target bacterial DNA that allows bacterial detection and identification within 20 minutes. It is hoped to replace current agar systems that depend on colony growth which can take up to several days. As part of an overall decision support system, this will enable hospital based clinicians maximize the potential of their anti-infective management programs, with the benefit of improving patient outcomes, while increasing survival rates and lowering length of patient stay which will ultimately lead to reduced overall hospital costs.

One of the most significant challenges for newly developed hospital microbiological technologies is their incorporation into laboratories. At this point, newer technologies are only affordable or implementable by large or university-based hospitals or diagnostic laboratories, and yet only minimally adopted there. PCM, in collaboration with IT Carlow and microbiologists in Irish hospitals, are developing this platform to allow hospitals, regardless of their size, to incorporate these latest cutting edge technologies.

Also focused on acquiring and improving existing antibiotic and antifungal products, PCM's work with microbiologists is complementary to both efforts and each present a high area of unmet medical need for the management of hospital infectious diseases.

PCM was nurtured from a basic concept or idea through the Enterprise Platform Program (EPP), the precursor to the New Frontiers Programme. It is a professional training and

enterprise support program aimed at entrepreneurs who have a well thought out innovative business idea or technology that has the potential to be transformed into a High Potential Start Up (HPSU) company.

As part of the enterprise support service provided by IT Carlow, Procure was given access to a range of state of the art microbiology expertise, research staff, information technology and specialised resources, equipment and networks. This allowed the company to quickly move to the next level in collaboration with clinical microbiologists, pharmacists and companies to translate the technology for widespread clinical adoption.