TITLE: PERSONAL HEMODIALYSIS MONITOR (PHDM)

INVESTMENT SUMMARY

Background	The pHDm device is dedicated to monitoring of hemodialysis and peritoneal dialysis efficiency in patients with kidney dysfunction. The pHDm is a complete system compatible with any dialyzer available on the market and provides real-time, online information about the amount of toxins removed from patient's blood (e.g. urea, creatinine, phosphate). The device is connected to a server which collects and analyses the data during the dialysis and based on the results is estimated the optimal time of the process. The data can be accessed on mobile phones (information about the single procedure - for the patient and medical personnel), personal computers or tablets (to monitor and control the process of dialysis of many patients at the same time by medical personnel and physicians).
The Opportunity	Medical interpretation of obtained data by our device can improve quality of dialyzed patients life as well as reduce time and cost of renal replacement therapy. Hemodialysis dose could be precisely calculated and controlled using pHDm device and service. Our aim is to develop a complete solution for public and private dialysis stations and for home use. The system would consist of devices that measure the level of chosen toxins in postdialysis fluid, centralized database and repository of firmware for devices and websites or another interface for data presentation. The part of the business would be the service and helpdesk for pHDm users. Data collected by the devices in large scale can be used for big data analysis which can impact on the development of new dialysis methods or standards.
Team	▪ Łukasz Tymecki PhD, (Univ. of Warsaw, Faculty of Chemistry) – team leader, chemist, constructor ▪ Michał Michalec MSc, (Univ. of Warsaw, Faculty of Chemistry) – team member, chemist, main constructor, hardware specialist, hardware programmer, software specialist ▪ Robert Koncki prof. (University of Warsaw) – chemist, scientific consultant ▪ Joanna Matuszkiewicz-Rowińska M.D. prof. (Warsaw Medical University) – scientific consultant

The Global Market	▪ More than 1 400 000 patients dialyzed all over the world each year. ▪ Couple competitive solutions for hemodialysis efficiency monitoring (e.g. Adimea /Braun, OCM /Fresenius, Diascan /Baxter) but neither offer quantitative result. Results are approximated and cannot be used instead of conventional blood analysis. ▪ No existing peritoneal dialysis quality controller. ▪ Public dialysis centers (c.a. 120 in Poland, approx. 16 000 dialysis/year/station). ▪ Private dialysis centers (c.a. 130 in Poland). ▪ Home dialysis - about 2% of dialyzed patients in the world. ▪ Three international manufacturers of artificial kidneys.	
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