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## Off-Label Transport Activities: A Transport-Based Telemedicine ROP Screening In Premature Infants In the Central Region of Hungary

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Otis (Westin Waterfront)*

**Regina Szucs, MD<sup>1</sup>, Erika Maka, MD<sup>2</sup>, Laszlo Imre, MD<sup>2</sup>, Janos Nemeth, MD., PhD., DSc.<sup>2</sup>, Ildiko Jakob<sup>1</sup>, Teodora Toldi<sup>1</sup>, Agnes Nagy, MD<sup>1</sup> and Zsolt Somogyvari, MD., PhD., MSc.<sup>1</sup>, (1)Peter Cerny Foundation for Curing Sick Babies, Budapest, Hungary, (2)Dept. of Ophthalmology, Semmelweis University, Faculty of Medicine, Budapest, Hungary**

**Background;** Our Foundation is a non-governmental, non-for profit organisation that has been transporting around 3,000 sick neonates per year in the Central Region of Hungary with a population of 4 million for 22 years. There are 11 Level-III and Level-II NICUs and one cardiac ICU in the area covered by our Neonatal Emergency and Transport Service (NETS). Our NETS uses ambulances equipped to function as „mobile Neonatal Intensiv Care Units” (mNICUs).

**Purpose:** To solve the problem that annually around 150-200 premature infants with retinopathy of prematurity (ROP) had been transported to referral centers for ophthalmology examination and laser treatment due to the lack of availability of specialized ophthalmology services in most referring NICUs. This practice places infants at unnecessary risks and is time consuming and costly.

**Methods:** We developed a system, where the ophthalmologist performing the examinations and laser treatment is transported to the referring NICUs. In addition, screening examinations are being performed using the RetCam (Shuttle/Clarity Co./USA) system and analyzed by an ophthalmologist via a telemedicine link. The screening examinations are performed by a specially trained transport nurse, the images are forwarded via the internet, and downloaded and evaluated on-line by an ophthalmologist. Decision whether intervention, transport or no intervention is needed is done at the time of the completion of the exam.

**Results:** By using the retino-telemetry system, a total of 987 screening examinations and 114 on-site laser treatments and post-intervention follow-up examinations were performed between 30 November 2009 and 30 March 2011. Specially trained transport nurses have been able to screen on site since obtaining their licence dedicated for retino-telemetry. They have examined alone 46 premature infants between 13 September 2010 and 31 March 2011. Analysis of this data revealed that the use of this system resulted in savings of 6,040 running kms, 85 transport hours and 37,870 USD for the NETS during a 6-month periode. Logistic system of the neonatal emergency and transport service can effectively provide the continuous availability of the telemedicinal ROP screening system, while liberating capacity for true emergency care at the same time.

**Conclusion:** In addition to avoiding unreasonable transport of premature babies, significant savings and improved documentation were achieved by the use of this innovative transport system.

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