Letter of intent

File number 175.2021.033
Grant 2021/2022
Applicant
Title Dutch Pediatric Data Research Platform
Abstract
Domain Netherlands Organisation for Health Research and Development (ZonMw);
Research fields
21.70.00 Physiology, 23.30.00 Medical specialisms, 23.40.00 Health sciences, Epidemiology, 37.10.00 Software for humanities, 37.40.00 Databases for humanities, 16.20.00 Software, algorithms, control systems, 16.60.00 Artificial intelligence, expert systems
Requested investment

Intensive care for neonatal and pediatric patients in the Netherlands is centralized in 9 neonatal (NICU) and 7 pediatric intensive care units (PICU). These units are responsible for the care of all children in need of intensive care from birth to the age of 18 years. Many of these children have severe (co)morbidities related to critical illness with lifelong consequences. Unfortunately, it is not possible to adequately predict the adverse outcomes for these children or perform benchmark studies in the Netherlands to date. A national pediatric digital data research platform is therefore warranted. We request an investment of €3.000.000 for establishing this nationwide digital platform. With this investment, we want to improve healthcare quality, affordability, and accessibility for all critically ill infants and children.

Explanation of the requested investment

The national research and outcome database will collect extracted data from electronic patient records (EPD), including continuous high-resolution monitor vital parameters from all admitted patients. Combining these high-resolution with clinical data from all Dutch centers will enable us to build large cohorts of children with relatively rare diseases. We will use this platform, with machine learning, to develop and validate prediction models for clinical outcomes, innovative early warning systems, investigate inter-center differences, and identify potential research ideas for novel and existing treatment options. The deliverables of this research platform will improve individualized care by prescribing proper treatment faster with more precision. In addition, it will reduce mortality and morbidity in this vulnerable population and help clinicians more accurately inform parents about their child's prognosis.

Indication of the group of researchers

All 9 NICUs and 7 PICUs in the Netherlands are represented in this research group. The group is supported by all the division heads of the PICUs and NICUs and the national research networks. In addition, the group has extensive experience and expertise in data science, machine learning, legal, and ethics.

LSRI alignment

The LSRI aims to cluster research facilities, which is precisely the intention of our Research Network/Platform. We will collaborate with other experts outside our departments in this field, such as Health-RI, to determine the optimal infrastructure for our platform. Our database will set the standard for medical research in children in the Netherlands and abroad. We will collaborate with European and other international pediatric data platforms, respecting individual privacy with this database. With the intended infrastructure of EPD data extraction with high-resolution monitor data, we will be leading in the pediatric intensive care world.

Organisation responsible for the application

Confirm letter of intent
With submitting this form via ISAAC I declare to have filled in this form completely and truthfully.
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