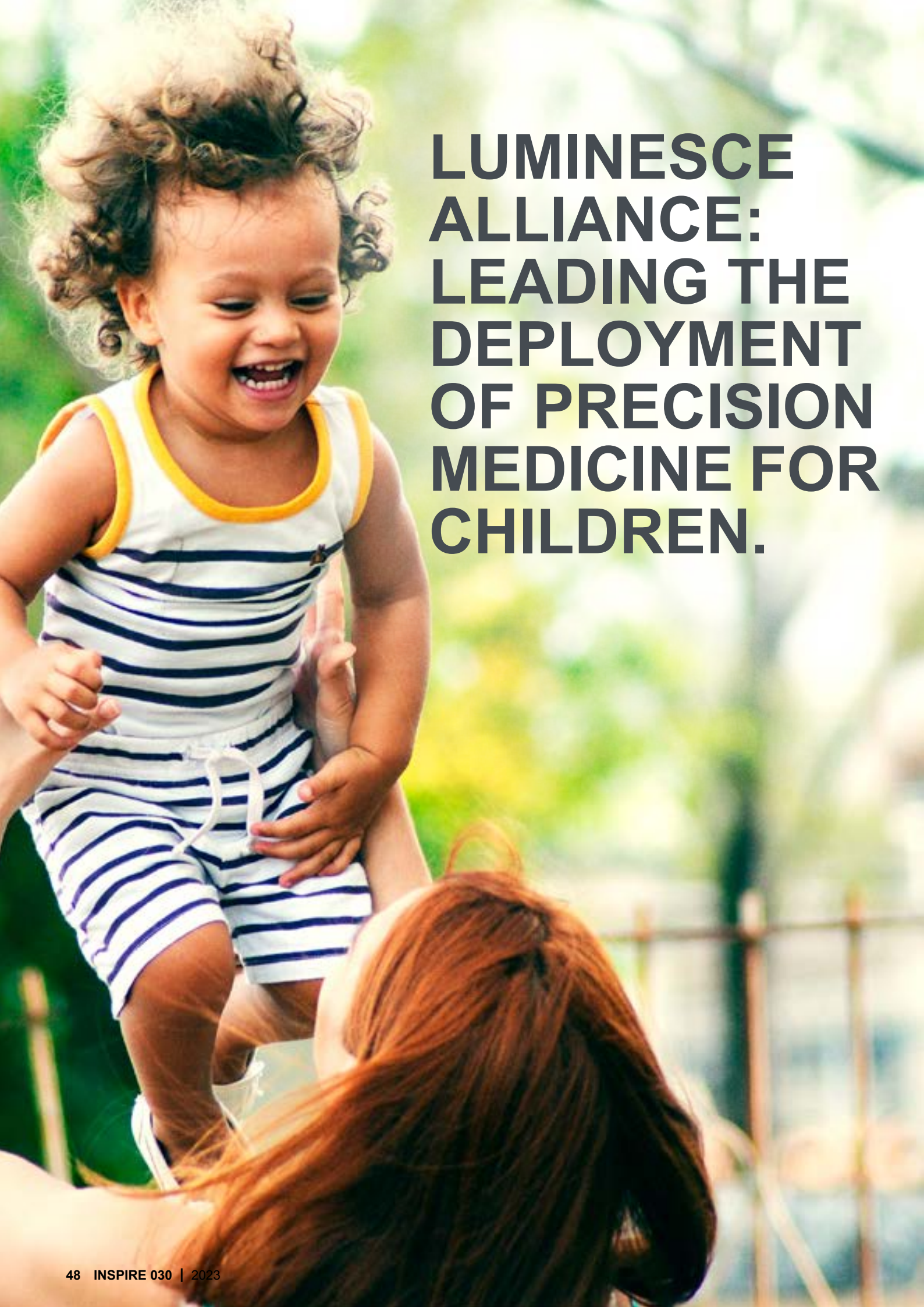

LUMINESCE ALLIANCE: LEADING THE DEPLOYMENT OF PRECISION MEDICINE FOR CHILDREN.

Precision medicine delivers personalised, targeted medical care to patients by studying a child's individual genes, behaviours, and environment to understand what is causing their disease, and how to treat it.

Children benefit significantly from precision medicine, with genetic conditions contributing substantially to admissions in New South Wales (NSW) paediatric hospitals (40-50%), and approximately 15-20% of childhood cancers appearing genetically predisposed.

In just four years, a quiet achiever called Luminesce Alliance has driven world-leading research into paediatric precision medicine, turning a $24m investment into leveraging an additional $294m in funding. Luminesce Alliance has secured an additional $20 million in funding for the next four years (2023-2027).

Luminesce Alliance is a not-for-profit cooperative joint venture between the Sydney Children's Hospitals Network, the Children's Medical Research Institute, the Children's Cancer Institute, the University of Sydney, and the University of New South Wales Sydney. It has been established with the support of the NSW Government to coordinate and integrate paediatric research.

By bringing together specialists across many fields and with different sets of skills, Luminesce Alliance is contributing to the discovery and development of medical and technological innovations that deliver tangible outcomes to sick children.

Many diseases of adulthood start in childhood, so advances in detection and treatment benefit the whole community.

Luminesce Alliance launched the Paediatric Precision Medicine Program in 2019. The program enhanced NSW's capacity and integrated cutting-edge technologies into personalised clinical care, exclusively focussing on early diagnosis and treatment for children, limiting long-term effects and reducing the burden on the healthcare system.

To date, Luminesce Alliance has established over 140 new STEM jobs, facilitated over 20 pharma and investigator-led clinical trials, collaborated with over 450 national and international organisations, shared paediatric precision medicine findings with more than 150 peer reviewed publications, and given over 190 presentations across Australia and internationally. Insert image at the end of this article if possible.

Luminesce Alliance Chair, Kathryn Greiner AO, says that "ensuring the wellbeing of the future generations is one of the most important challenges for us all. Finding ways to bring our leading researchers, practitioners, and children and families together to tackle problems is at the core of translational research. We are seeing new discoveries in practice sooner, so all our children can live healthy and productive lives."

Luminesce Alliance Executive Director, Anastasia Ioannou, is passionate about the importance of collaboration to the success of the Alliance.

"Our aim is to support the collaboration needed to deliver better health outcomes for children, particularly those impacted by cancer, rare genetic diseases, and neurodevelopmental disorders."

"Despite medical advances, cancer, and rare genetic diseases are the leading causes of death in children worldwide. At least one in 20 babies is born with a rare genetic disease or neurodevelopmental disorder and around 1,000 children and young people are diagnosed with cancer annually in Australia."

The current four-year funding commitment allows Luminesce Alliance and leading researchers from the partner organisations to build on their success with the development of five Enabling Platforms:

1. **Functional Genomics:** identifying and understanding disease-causing genes and new treatments
2. **Data:** translating rich and complex data into new treatments, new prevention strategies and clinical impact
3. **Precision Therapy:** delivering new drugs and novel medical technologies that will support early-phase clinical trials
4. **Psychosocial:** developing world-leading best practices for psychological, emotional, social, and educational support of patients and their caregivers
5. **Health Systems Implementation and Economic Research:** translating research discoveries into new models of care.

"Enabling platforms add significant value" says Anastasia Ioannou.

"They galvanise and intensify collaboration; encourage multi-disciplinary thinking and fresh perspectives; join research translation capabilities into an end-to-end commercialisation pathway; complement geographical precinct strategies by supporting linkages within and across precincts; fill gaps, accelerate translation and create efficiencies; and reinforce competitive advantages.

"The Enabling Platforms take collaboration to the next level, to make a difference to children, while fostering long-term health and economic benefits to the community."

Author: This article was provided by Luminesce Alliance.