From little things, big things grow – the development of an infant feeding system.

Kay Gibbons[1], Bernadette O'Connor[2], Michele Meehan[3]

1 Murdoch Childrens Research Institute, Flemington Road, Parkville, Victoria 3052. kay.gibbons@mcri.edu.au
2 The Royal Children's Hospital Melbourne, 50 Flemington Road, Parkville, Victoria 3052. bernadette.oconnor@rch.org.au
3 The Royal Children's Hospital Melbourne, 50 Flemington Road Parkville, Victoria 3052. michele.meehan@rch.org.au

The Royal Children's Hospital (RCH) uses bottles and teats for infants requiring expressed breast milk and infant formula. Problems with available commercial teats have been recurrent, including inconsistent flow rates and unsuitable teat sizes to suit the varied population of small or sick infants who often present with feeding difficulties. Discharge, or the next stage of medical care, often relies on the establishment of feeding or weight gain, so problems with feeding impact on parents, nursing staff, speech pathologists and dietitians.

The Victorian Government funds research and development projects for government-funded agencies, through supporting small businesses to design innovative solutions with marketable potential. The funding process starts with submission of a technical brief outlining the issue. In 2012, the RCH Department of Nutrition & Food Services submitted a brief for development of a new infant feeding teat. After a successful feasibility process the project partners, product development specialists, received $1.5 million to progress the project to 'proof of concept' stage. A technical expert group comprising a dietitian, speech pathologist and a nurse infant feeding specialist provided content expertise throughout.

A market scan and literature review indicated a paucity of evidence on the development or evaluation of existing infant feeding teats. Laboratory analysis, simulation of the feeding process, input from a consultant radiologist with CT scans, and from the expert group led to the development of a new feeding 'system' comprising a number of unique design features including variants of teat size and flow rate, to suit the population. Pilot trials in 2013 established the acceptability of the design by well babies and supported the planned physiological parameters, compared to breast-feeding. The focus of this paper will be upon the collaborative process of developing a 'big idea' from conception through to implementation, the opportunities and the implications for allied health.