RES-ON Research Funding Program

➢ **Application Form** **Closing Date: 3 November 2023**

➢ **Recipients announced: 15 December 2023**

TERMS AND CONDITIONS OF PROGRAM

The RES-ON research funding program provides small or seed funding to recognise and progress early stage ideas with **translation potential to improve health services delivery** in South Eastern Sydney Local Health District (SESLHD). The goal of the RES-ON research funding program is to support researchers in launching or progressing ideas that create better value in health services in SESLHD. The program also provides the opportunity for researchers to gain exposure, support and mentoring from SESLHD and its research and academic partners.

Projects must have a demonstrated potential for delivering value in healthcare. This includes the pilot and development of methods, treatments, policies, devices, technology and systems to optimise the design, conduct and outcomes of healthcare and health and medical research. Applicants must submit a complete application form, including Head of Department endorsement, for review by a panel from the SESLHD Collaborative Research Committee. The recipients(s) of the RES-ON research funding program will be awarded up to $10,000 from the SESLHD Collaborative Research Committee to enable progression of the research.

ELIGIBILITY

Candidates must have:

- The ability to demonstrate employment at SESLHD, or that employment is partnered in SESLHD.
- The research project team can consist of up to 5 members, with 80% representation from SESLHD, including the project lead.
- Head of Department endorsement of the application form. This confirms that resources are available to support the project through ethics and governance review and approval, backfill and/or dedicated time to support project delivery, project mentoring and support for implementation and translation.
- Agreed to these terms and conditions and forwarded the completed, signed application to Rina.Ward@health.nsw.gov.au by 5pm, Friday 3 November 2023.

GENERAL INFORMATION

- This grant will be distributed to the applicant's department cost centre.
- Previous recipients and projects funded by the RES-ON research funding program are eligible to apply in all funding rounds.
- The applicant must be able to demonstrate employment at SESLHD.
- Coaching and support will be provided as required from the recipient's department, as per the endorsement of the application. Additional support may be offered to applicants by the SESLHD Collaborative Research Committee.
- Funding is provided to progress development of the research towards research translation as described in the application. Projects may continue beyond the timeline described in the application.
- The assessment of applications and decisions of SESLHD in awarding funds in the RES-ON research funding program will be final and no correspondence will be entered into.
- Applicants disclose any information at their own risk; there is no intellectual property protection application for projects.
- SESLHD reserves its rights with respect to ownership of intellectual property resulting from commercialisation or other uses of the project in proportion to its direct and indirect contributions, in line with the *NSW Health Intellectual Property Policy PD2005_370* or equivalent policy document.

TENURE

- The RES-ON research funding shall be tenable for 12 months from the commencement date of the research project.
- The applicant must have commenced or will commence their research by 15 January 2023.
- A request to defer payment of the award will only be considered subject to approval from the Chair, SESLHD Collaborative Research Committee.

FUNDING

- The RES-ON research funding program provides up to $10,000 in funding to be utilised in the development of research that is considered to have value in translation into better value healthcare.
- Funds will not be provided directly to the applicant but will be allocated to an appropriate departmental SESLHD cost centre.
- Recipients will receive 50% of the awarded amount within 30 days of grant announcement, allocated to their department's cost centre. The remaining 50% will be paid upon submission of the final report, or as per agreed milestones and deliverables as stated in the Letter of Award.
- Unused funds will be returned to the SESLHD Collaborative Research Committee.
- If the project requires funding greater than the awarded amount, it is the responsibility of the applicant to secure any required ongoing funding.
- SESLHD retains the right within its absolute discretion to terminate all or part funding and/or approval of any supported projects at any time.
- Inability to deliver on project reports may result in funds being withheld.
- The applicant must seek and provide evidence of authorisation from the relevant facility manager to ensure the purchase, hire or lease of any equipment can be accommodated and meets local Work Health and Safety requirements.

DELIVERABLES AND REPORTING REQUIREMENTS

The recipient(s) of the RES-ON research funding will:

- Deliver the research activities described in their application within the specified timeframe.
- Provide a final report to the SESLHD Collaborative Research Committee, reporting on the progress, milestones, finances, publications, barriers and outcomes of their project. This includes providing details of expenditure of funds provided.
- Participate in the development of media releases and reports in collaboration with SESLHD.
- Present on their developments at a SESLHD Collaborative Research Committee meeting within 12 months of receiving the award.
- Present on their developments at the subsequent St George and Sutherland Hospitals Annual Medical Research Symposium or other events, at the invitation of the SESLHD Collaborative Research Committee.

TERMINATION

The recipient(s) of the award will be terminated:

- On resignation or withdrawal of their application. This includes cessation or transfer of employment outside of SESLHD.
- On completion of the project or 18 months from project commencement, whichever is earlier.
- Before this time if, after due enquiry, the Chair, SESLHD Collaborative Research Committee concludes that the applicant has not carried out the development of their research with competence and diligence or in accordance with Federal and NSW Health Policy or fails to maintain satisfactory progress, or has committed serious misconduct.

APPLICATION FORM

Please complete this application form for the RES-ON research funding program. A panel will review this application, preferring clear and concise details. Applications must comply with specified word limits and forwarded to Rina.Ward@health.nsw.gov.au by 5pm, Friday 3 November 2023. If you have any questions or require further information, please contact Ms Rina Ward on 0439 479 393 or Rina.Ward@health.nsw.gov.au.

Section 1: RES-ON Project Description

1. RES-ON Project Short Title (max 60 characters):

Y-site compatibility with lipid formulation in NICU

2. RES-ON Project Title:

Y-site compatibility of Intravenous lipid emulsion (IVLE) and intravenous (IV) medications used in NICU setting

Former RES-ON application? No:

3. Area of Research or Academic Discipline:

Infant health

4. List 4 keywords:

lipid, compatibility, medications, NICU

5. Intended commencement date:

12/11/2023

6. Brief lay description of your RES-ON research project (100-300 words):

Describe the aim of the research, the need or case for change, how it is original, how it will change things. Provide overall background and context of your research and define the specific hypothesis to be tested. Briefly outline the methods that will be used.

Background

Parenteral nutrition (PN) is a standard treatment for neonates in NICU. In NSW, PN is administered as two independent components: (i) amino acid/dextrose/electrolyte '2-in-1' solution and (ii) the intravenous lipid emulsion (IVLE). All NSW NICUs use the same consensus PN and the IV medications developed by the Australasian Neonatal parenteral nutrition group (ANPN) and the Australasian Neonatal Medicines Formulary (ANMF), both chaired by the RHW NICU. These are implemented by eHealth NSW in eRIC.

IV medications and PN solutions are co-administered via Y-site, through a single lumen cannula in neonates. There are concerns of physical incompatibility with simultaneous multiple preparations leading to the formation of particles. A recent study from a NICU demonstrated that infants may receive up to 85,000 subvisible particles from IV medications per day and are implicated in microcirculatory impairment and complications including pulmonary dysfunction, cardiovascular arrest and multiorgan failure. Medication physical compatibility can vary based on the concentration of the drugs, as well as the duration of the infusion. There is some published information on compatibility of PN formulations with IV drugs, but much of that information may not ab applicable to the NSW consensus formulations and drug concentrations. Recently Curtin University in Perth validated and established the testing method for

neonatal settings, but drug strengths and lipid emulsions in their study vary from the NSW consensus PN and drug formularies.

Aim and methods

The aim of this project is to test Y-ste compatibility of the NSW consensus IV lipid emulsions and commonly used ANMF drugs in the NICU. These include dobutamine, dopamine, adrenaline, noradrenaline, morphine, fentanyl, rocuronium, vancomycin and piperacillin-tazobactam. The lab testing will be performed at Curtin University Pharmacy school under the supervision of Prof Kevin Batty. The methodology, quality assurance and data capture/analysis have been published by this group previously.

7. Desired outcomes and impact (max 150 words):

*What will be developed in **this** component of the project? What is the current evidence in the area and how does the project build on it? What will be the potential final outcomes of your idea and how will this improve patient outcomes or positively impact the health system?*

In this component of the project, we will establish the physical compatibility of the commonly used ANMF drugs with Intravenous lipid emulsions at the Y site. While there is emerging data from Perth on physical compatibility of IV drugs and IV lipid emulsions, concentrations and strengths used in the study vary from NSW consensus ANMF and ANP drugs and PN solutions. The outcomes of our proposed project on drug:Iv lipid compatibility will be generalisable to all NSW NICUs because of the standardisation of practice in NSW NICUs that was achieved through ANMF and ANPN consensus. Knowledge gained from this study will reduce the risk of subvisible particle formation from co-administration of drugs and lipid emulsion through Y-site. Avoidance of this risk will improve the health outcomes of seriously ill neonates in NSW by reducing complications including pulmonary dysfunction, cardiovascular arrest and multiorgan failure.

8. ~~S~~cale and translation (max 150 words):

Translational research takes findings from research studies and seeks to translate them to real-world community or health settings. Describe how your project will be translated into service provision and benefits for SESLHD patients and staff, as well as alignment with SESLHD priorities. How many people will this benefit in SESLHD, NSW and Australia? If your project is successful, what is necessary for the findings and outcomes to be fully translated and scaled into practice or commercialised? Demonstrate this is possible.

This project will establish whether ANMF approved drug concentrations used to run drug infusions are compatible with the NSW consensus SMOFlipid and amino-acid PN formulations via Y-site in neonates.

All NSW NICUs use ANMF and NSW drug formularies and parenteral nutrition formulations as their standard of practice through eRIC. The neonates requiring parenteral nutrition are routinely on other drugs including inotropes (dobutamine, dopamine, adrenaline, noradrenaline), opiate analgesics (morphine, fentanyl). The outcomes of this study are generalisable to all the NICUs in NSW because of the same clinical practice in terms of drug and PN prescription and practice. ANMF group meets every week. Once the results of this study become available, our lipid formulation, drug formularies and PN formulations will be updated and disseminated to the NICUs through our ANMF email distribution list. Also, changes will be incorporated into eRIC as part of standard clinical use.

9. Partners and stakeholders (max 150 words):

Who are your key partners and stakeholders? Applications demonstrating inter-disciplinary and inter-departmental collaboration will be highly regarded. Please list who you will work with during the development phase as well as those you will consult with once the project is complete. Please note who you have already communicated with. How will partners support the project? What cash or in-kind support will be provided?

ANMF steering group comprising neonatologists, pharmacists and Rn representatives of all NSW NICUs Pharmacy department, CURTIN UNIVERSITY, Perth will perform the benchtop testing for drug compatibilities. Fiona Stanley Hospital NICU – They use the same NSW PN formulations and ANMF formulations. They agreed to provide the in-kind contribution of SMOFlipid, aminoacid-dextrose bags, drugs being tested for compatibility.

10. Feasibility, Implementation and Sustainability: timeframe and budget (max 100 words):

*How long will it take to develop **this** component of your project? Please outline a simple timeline for the project, identifying the key milestones. What is the total amount of funds requested for this component of your idea and how will this be spent? Successful applicants will need to provide a completed budget.*

The pharmacy department at Curtin University have recently run similar compatibility testing and published their results. The system to run this component of the project is already established and no extra time is required. Drug concentrations, lipid emulsions and amino-acid formulations will be supplied by Fiona Stanley hospital locally and no need to transport them from NSW. Testing itself is expected to take 4-6 weeks. Results will be ready by February 2024. If we are able to obtain $10K, we would aim to use around $9K for a research associate and cover lab consumables with $1K. This is predicated on being able to obtain the necessary drugs, IV fluids and lipid emulsion mixtures from Fiona Stanley Hospital, Perth as an in-kind contribution. No shipping is required to transport the study drugs and PN formulations from NSW.

11. Sponsorship (max 100 words):

Has funding previously been obtained for this project? Do you currently have sponsorship for your research? Who are the target sponsors who would potentially be interested this research and its translation?

We do not have any sponsors for this component of the project.

Section 2: RES-ON Project Contact Details

1. Coordinating applicant details

Full name	Dr Trisha Parmar
Position	NICU Fellow
Department or Service	Newborn Services
Academic Discipline	Newborn services
Head of Department	Dr Srinivas Bolisetty
Phone	0293826190
Email	Srinivas.bolisetty@health.nsw.gov.au
Other organisation or affiliations	

2. RES-ON research funding project team details:

Please list the co-investigators or other key people involved in your RES-ON research project (name, title, and organisation).

Dr Srinivas Bolisetty

Prof Kevin Batty, Pharmacy department, Curtin University, Perth

Dr Shailender Mehta, Head of Neonatology, Fiona Stanley Hospital, Perth.

ACKNOWLEDGEMENT AND ACCEPTANCE

☑ The applicant hereby agrees to abide by the Terms and Conditions of the RES-ON research funding program.

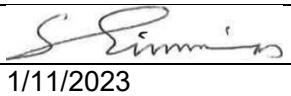
☑ The SESLHD Head of Department accepts responsibility, and confirms resources are available to:

1. Progress ethics and governance review to completion
2. Provide backfill and/or dedicated time to support project delivery
3. Provide project mentoring to ensure effective project progress
4. Provide financial and non-financial resources required for implementation and translation

Applicant:

Full Name	Dr Trisha Parmar
Position	NICU Fellow
Department or Service	Newborn Services
Signature	
Date	1/11/2023

Head of Department:

Full Name	Dr Sriniavs Bolisetty
Position	Medical Co-Director
Department or Service	Newborn Services
Signature	
Date	1/11/2023