

**Conceptualisation and Development of the RIPE-N model  
(Reflective Interprofessional Education-Network model) to  
enhance interprofessional collaboration across multiple  
health professions**

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3 **Conceptualisation and Development of the RIPE-N model (Reflective Interprofessional Education-**  
4 **Network model) to enhance interprofessional collaboration across multiple health professions**  
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7  
8 This paper describes a novel model of learning, designed to enhance interprofessional education  
9 (IPE) and interprofessional collaboration (IPC). Lessons learned, plans for sustainability and future  
10 directions for policy, practice, implementation and curriculum training are also discussed. The RIPE-N  
11 model (Reflective Interprofessional Education – Network model) was developed for an  
12 interprofessional simulation environment involving five health professions - pharmacy, nursing,  
13 orthoptics, physiotherapy, and speech pathology with the potential to increase the number of health  
14 professions involved. The RIPE-N model was adapted from the original RIPE Model (Reflective  
15 Interprofessional Education Model), utilising unfolding multidisciplinary case from admission  
16 through to discharge. Key adaptations of RIPE to include greater focus on professional practice and  
17 the opportunity for collaboration by all disciplines. Reflection is critical to the RIPE-N model to  
18 develop the *reflective practitioner*, hence the inclusion of collaborative reflective ('pause and  
19 reflect') stations aimed at improving collaborative clinical decision-making skills among diverse  
20 healthcare professionals.  
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41 Keywords:

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44 Interdisciplinary communication; pharmacy; nursing; physiotherapy; orthoptics; speech pathology  
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## 1. Introduction

Interprofessional education (IPE) and interprofessional collaboration (IPC) are critical to deliver safe and high quality healthcare. Both IPE and IPC enhance relationships between health professionals, enabling them to build rapport, knowledge, and respect for healthcare professionals' expertise and skills across disciplines, and understanding how health professionals function effectively in a team for improved patient health outcomes [REDACTED]

[REDACTED]; Zwarenstein, Goldman & Reeves, 2009).

IPE occurs when two or more healthcare professionals or students learn about, from and with each other. (World health Organisation, 2010) IPC is a process whereby professionals or students from different professions collaborate to share their ideas and perspectives with each other; enabling better informed clinical judgments to enhance patient outcomes [REDACTED]

[REDACTED] Becoming a 'reflective practitioner' (Schon, 1995) can encourages deeper learning (Tsingos, Bosnic-Anticevich & Smith, 2015), enhances both IPE, and IPC, in clinical practice. Despite the well-documented importance of IPE (El-Awaisi, Joseph, El Hajj & Diack, 2017; Wilbur & Kelly, 2015), IPC (World Health Organisation, 2010; Zwarenstein, Goldman & Reeves, 2009), and reflection (Gibson, Aitken, Sandor, Buckingham Shum, Tsingos-Lucas et al., 2017; Mantzourani, Desselle, Le, Lonie & Lucas, 2019; Tsingos, Bosnic-Anticevich & Smith, 2014) evidence suggest these attributes require increased attention (El-Awaisi, Joseph, El Hajj & Diack, 2017; Lucas, Power, Hayes & Ferguson, 2019; Stull & Blue, 2016). Developing these skills in the higher education setting has the potential to equip future healthcare professionals to effectively collaborate with other professionals; and to reflect on their skills, training, expertise and shortcomings (Tsingos, Bosnic-Anticevich & Smith, 2014). This can be **achieved by deliberately** exposing students or trainees to collaborative models of learning [REDACTED]

[REDACTED] with other trainee healthcare professionals to enhance their exposure to diverse healthcare professional roles, responsibilities,

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2  
3 and expertise (Hardisty, Scott, Chandler, Pearson & Powell, 2014; Thurston, Chesson, Harris & Ryan,  
4  
5 2017). Providing students with prompts and guided simulation experiences involving reflective  
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7 activities may facilitate opportunities for students to reflect on their practice in a 'safe' simulated  
8  
9 learning environment (Baile & Blatner, 2014; Gaba, 2004; Rudolph, Raemer & Simon, 2014).

10  
11  
12 The RIPE-N model (Reflective Interprofessional Education- Network) model of teaching and learning  
13  
14 was developed to enhance IPC among healthcare professional students from different healthcare  
15  
16 disciplines. This model presented in this paper was adapted from the RIPE (Reflective  
17  
18 Interprofessional Education) Model, which involved two health disciplines (pharmacy and nursing) to  
19  
20 include a broader network of healthcare professionals working collaboratively while progressing  
21  
22 through an unfolding multidisciplinary case ( [REDACTED]  
23  
24 [REDACTED]  
25  
26 [REDACTED]  
27  
28 [REDACTED]). The original model RIPE, has been successfully integrated into the

29  
30 pharmacy curriculum since 2017, however the focus was solely on pharmacy professional practice.

31  
32 The RIPE-N network of consisted of pharmacy, nursing, orthoptics, physiotherapy, and speech  
33  
34 pathology students. The number and type of health professions included reflected one possible  
35  
36 configuration of the diverse collaborative teams that might be engaged in stroke rehabilitation.  
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39  
40 There are distinct differences between the RIPE and RIPE-N models. The primary difference is that  
41  
42 the RIPE model only included the pharmacy student perspective and the role of the pharmacist in  
43  
44 relation to the case and in relation to engaging with nurses in professional practice. Although nursing  
45  
46 students were involved, they were essentially facilitating the experience for pharmacy students. The  
47  
48 RIPE-N model reflects an authentic interdisciplinary engagement by enabling an equal focus on all  
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50 health professionals' perspectives and their expertise in engaging with each other, collaborating and  
51  
52 making informed decisions based on how effective that collaboration is.  
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56 Data derived from the pilot study will not be discussed in this paper, as a future paper will outline  
57  
58 the analysis from several multidisciplinary focus group sessions. This paper describes the  
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3 conceptualisation and development of the RIPE-N model to assist other educators in making  
4 considered, nuanced and effective IPE and IPC design choices for curriculum. Lessons learned for  
5 future directions for policy, practice, implementation, curriculum training and the sustainability of  
6 this model are also considered.  
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## 11 12 13 **2. Context**

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15 The RIPE-N model was implemented with the ethical approval of the [REDACTED], and  
16 involved academic representatives from five health disciplines at an [REDACTED]  
17 university (pharmacy, nursing, orthoptics, physiotherapy, and speech pathology). To test the RIPE-N  
18 model's face validity as a novel teaching and learning initiative, the academics involved in the project  
19 disseminated an expression of interest (EOI) for students enrolled in programs designed for health  
20 professional education, to participate voluntarily in a simulation pilot. Students were informed that  
21 their role in the simulation could be participating as a healthcare professional, as a standardised  
22 patient, or the standardised patient's partner. As the simulation was intended to be as close to  
23 authentic IPC in a hospital environment as possible, students representing their profession were  
24 informed that they would be working with other members of the healthcare team making  
25 collaborative decisions related to an unfolding patient case scenario involving a young woman  
26 admitted following an acute stroke. In groups of five, comprising one student from each discipline,  
27 students progressed through the RIPE-N model simulation.  
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45 The simulation laboratory used replicates of an authentic hospital environment. Phases of the  
46 patient journey (Figure 1) and stations (bedside station, research station or reflective 'pause and  
47 reflect' collaborative stations) were incorporated in the development of the simulation experience  
48 (Figure 1).  
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54 [Insert Figure 1 here]

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56  
57 The simulation ran three times with different students in each group. Reflection is integral to the  
58 RIPE-N model. The purpose of utilising Schon's reflective model (Schon,1995) to 'reflect-in-action' at  
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2  
3 the pause and reflect stations during the simulation and again to reflect-on-action following  
4 completion of the simulation was to develop the 'reflective practitioner' to critically evaluate the  
5 impact of their collaborative decisions on the patient's health and health outcomes and how  
6 effective their collaboration was in making these decisions. Peer reflection (reflecting on their peers'  
7 actions) is a powerful tool for learning and as such, health professional students not directly involved  
8 in the simulation were also included as observers of the interactions writing notes during the phases  
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21 Their observations were discussed during the 'pause and reflect' stations with the  
22 other members of the healthcare team.  
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## 26 2.1. The processes prior to development of the RIPE-N Phases and Stations

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29 As IPC was the primary focus for the development of the RIPE-N model, this process commenced  
30 with the Faculty/ academic "champions" modelling collaborative practices throughout the  
31 development of the unfolding simulation scenario. Prior to a foundation case being developed and  
32 written, learning objectives were created and then streamlined following discussion before team  
33 consensus was gained. Given the time constraints on academic workload and the involvement of  
34 many disciplines in this project, monthly one-hour meetings were scheduled for the  
35 Faculty/academic champions involved in the project to facilitate collaborative writing and  
36 development of the scenario. This process commenced 12 months prior to the pilot. Equity of  
37 experience for all of the students involved was considered to be essential throughout all phases and  
38 stations of the model; therefore, the case details were carefully balanced (Figure 2).  
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51 [Insert Figure 2 here]

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55 The unfolding case study introduced students to a fictional patient, Justine, a 27-year-old woman  
56 who has had a stroke (see Appendix 1 for case details). Using a younger person's story was intended  
57 to dispel any prior assumptions students had that stroke only affects older people. Using a case  
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3 involving stroke was also useful as it enabled significant input from all of the involved professions to  
4 ensure interprofessional and collaborative care (Porth, 2010).  
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7  
8 Once consensus was gained about the case details, collaborative decisions predicted to be generated  
9 by the scenario were discussed by the academics involved. The design of the simulation modality for  
10 each phase or station involved consideration of: (i) whether specific patient physiological data was  
11 required to match the scenario; (ii) the level of patient interaction required to prompt bedside  
12 discussions and collaborative decision making; and (iii) which patient care interventions would be  
13 required for the patient. For example, at one station, it was suggested the patient might need a  
14 nasogastric tube (NGT).  
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24 The project team were in agreement, that rather than using human patient simulators (i.e.,  
25 mannequins), standardised patients (i.e., a person who portrays a patient to ensure delivery of a  
26 consistent performance throughout a case) would better suit the objectives of the simulation.  
27 Standardised patients require coaching to ensure accurate reflection of the patient's signs and  
28 symptoms (Decker, Sportsman, Puetz & Billings, 2008; Okuda, Bryson, DeMaria, Jacobson, Quinones  
29 et al., 2009; Smithson, Bellinghan, Glass & Mills, 2015). Therefore, training for the students  
30 participating as standardised patients and fiancés were provided prior to the simulation pilot (Figure  
31 3).  
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43 [Insert Figure 3 here]  
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## 46 2.2 Student Pre-reading work guides prior to the RIPE-N Simulation Laboratory 47

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49 Preparing students for any simulation experience requires consideration of pre-existing knowledge  
50 and skills expected for their stage of their studies. Hence, EOI were restricted to students at a similar  
51 education and experience level for the relevant health degree.  
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56 While there were some common objectives, each health profession had additional and unique  
57 objectives regarding their discipline. Therefore, pre-reading work supplied prior to attending the  
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3 simulation included links relevant to both individual health professions as well as to general reading  
4 material and resources related to National Standards and guidelines for example, links to the  
5  
6 National Stroke Guidelines were provided prior to the simulation laboratory. Students were also  
7  
8 provided with an overview of the scenario and its' significance as a health care issue for their  
9  
10 profession (Figure 2).  
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15 Students were informed that they would be allocated to an interdisciplinary group and would be  
16  
17 representing their profession through an unfolding simulation scenario and gathering information at  
18  
19 various phases and stations of the simulation. They were informed that as a representative of their  
20  
21 profession, they were to collaborate with their health professional peers, the patient and patient's  
22  
23 family member when discussing any clinical decisions.  
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26  
27 A student manual was provided on the day with prompts for each phase of the simulation for  
28  
29 students to write notes in preparation for discussion at the 'pause and reflect' stations provided.  
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### 32 2.3 Confederate nurse in the simulation 33 34

35 As IPC was the primary focus of the RIPE-N model, to make this experience more authentic, a  
36  
37 confederate nurse was used. A confederate nurse is an individual who is trained or scripted to play a  
38  
39 role in a simulation encounter in order to guide the students through the scenario (Meakim, Boese,  
40  
41 Decker, Franklin, Gloe et al., 2013). In this case an academic and registered nurse played the role of  
42  
43 the registered nurse team leader (using an ear-piece was present in the simulation environment to  
44  
45 facilitate the flow of the scenario and to provide additional prompts for the student teams). The  
46  
47 earpiece was connected to academics involved in the pilot who observed and listened to the student  
48  
49 discussions and collaborative processes from behind a one-way mirror in the simulation laboratory  
50  
51 control room. Academics provided information to the confederate nurse who then passed on  
52  
53 discipline specific information to students or intervened in the simulation to redirect students  
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55 without interrupting their immersion in the simulation. For example, if the students missed a cue  
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57 and did not identify that the patient had a previous allergy to penicillin, the confederate nurse  
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3 indicated to the student team that new antibiotics had been prescribed prompting the students to  
4  
5 consider these new medications in light of previous indicated allergies.  
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#### 8 2.4 Standardised patients and standardised family member (fiancé) 9

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11 To enhance the authenticity of the simulation experience, as well as the consistent training for the  
12  
13 standardised patients and their **family member**, it was decided that through the unfolding case that  
14  
15 the standardised patient and family member, who was a fiancé in this scenario, would move through  
16  
17 the stations, staying with the same group of students throughout the simulation. This served two  
18  
19 purposes: (i) to maintain consistency with the conversations developed from the previous phases  
20  
21 and stations of the simulation; and, (ii) a greater rapport between the patient, fiancé and healthcare  
22  
23 team was likely to develop.  
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#### 26 2.5 Phases and Stations of the RIPE-N model 27 28

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30 Three phases of the patient journey were included in the RIPE-N model: (i) Phase 1: Admission via  
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32 the emergency department to the High Dependency Unit; (ii) Phase 2: Day 4 of the patient's journey,  
33  
34 on the Ward; and (iii) Phase 3: Day 8 of the patient's journey, discharge planning and processes for  
35  
36 transition to home. In each of these phases there were a number of stations for the students to  
37  
38 progress through while unpacking the unfolding case. Phase 1 stations included: (i) Assembly station  
39  
40 involving the introduction to the multidisciplinary team members, simulation, and scenario briefing;  
41  
42 (ii) Handover to the Nursing Unit Manager (NUM) for the High Dependency Unit including hand  
43  
44 hygiene and infection control protocols; (iii) Research and resources station: for students to review  
45  
46 the medical and patient progress notes, scans, relevant recent pathology and screening tests and a  
47  
48 video of an interview with a young woman discussing her experience of having a stroke and the care  
49  
50 she received; (iv) Healthcare professionals' (HCPs) patient assessment(s) at the bedside; and a  
51  
52 number of (v) Pause and reflect stations prompted by guides (Table 1).  
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58 [Inset Table 1 here]  
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3 Phase 2 continued the patient's journey through to the general stroke ward and stations included: (i)  
4  
5 Bedside stations with updates from the confederate nursing team leader regarding the patient's  
6  
7 condition and (ii) Pause and reflect station. Phase 3 involved the last stage of the patient's journey at  
8  
9 hospital and stations included: (i) Discharge planning station with prompts (Table 2);

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12  
13 [Insert Table 2 here]

14  
15 (ii) Collaborative case meeting (patient conference) with HCPs and the patient and fiancé; (iii) Video  
16  
17 of an interview (Table 3) with a young woman who had experienced a stroke 1-year post discharge;

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21 [Insert Table 3 here]

22  
23 and (iv) Final pause and reflect station (Table 4).

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27 [Insert Table 4 here]

## 28 29 2.6 Limitations, Lessons Learned, Sustainability and Future Directions

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32 In terms of limitations, the pilot was a voluntary exercise for the participants in this simulation and  
33  
34 student performance was not assessed. Nonetheless, the student reflections in this pilot suggested  
35  
36 that their skills in this domain did develop as a result of their efforts. The evaluation of students'  
37  
38 perspectives about the case and model were analysed via several focus group sessions. As this paper  
39  
40 focuses on the conceptualisation and development of the RIPE-N model, the extensive focus group  
41  
42 data will be reported in a separate paper.  
43  
44

45  
46 As assessment drives student learning (Biggs & Tang, 2011) and as the RIPE-N model of teaching and  
47  
48 learning becomes embedded in curriculum, considerations for formative or summative assessment  
49  
50 will be required. Potential future summative assessment strategies may include assessment of  
51  
52 competency standards (by their own Faculty members) and assessment of interprofessional  
53  
54 communication skills (by Faculty members from other disciplines). Student observers may also peer  
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56 assess during the simulation for formative assessment, while the confederate nurse (role played by a  
57  
58 Faculty member) and control room Faculty members are placed well for observational formative or  
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3 summative assessment. As reflection (for example, critically reflecting on their own collaborative  
4 skills, expertise, and negotiation skills) plays a significant role in several aspects of the RIPE-N model,  
5 it is important that Faculty staff involved in the facilitation model this behaviour. Furthermore,  
6 assessing student post written reflections may be another helpful strategy to evaluate student  
7 learning.  
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15 Recruitment of former students to participate as volunteer mentors for current students are one  
16 potential solution to assisting sustainability of the model, as well as providing former students with  
17 opportunities to develop their mentoring capabilities. These student mentors could potentially  
18 participate as observers and provide valuable feedback to current students.  
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24 Undertaking this pilot simulation generated new knowledge in both the academics involved and in  
25 the student participants. While the importance of timetabling the simulation was noted in its  
26 planning and preparation, the experience of doing so illustrated the problematic notion of co-  
27 ordinating five different student programs for availability of both students and academics on the  
28 same day. Expediting this project, academics from each health discipline identified when both  
29 academics and students were likely to be available as a first objective in ensuring its success. Given  
30 the number of people involved in an IPC project, negotiation regarding the scheduling, logistics and  
31 succession planning is essential as the first step towards success. To enable this, the pilot was  
32 undertaken during December 2019 when the students had completed their yearly studies and the  
33 simulation laboratories were available. However, logistically to embed the RIPE-N model into  
34 curriculum, timetabling this within the curriculum timetable to work across all disciplines is critical.  
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49 The timing for one student to work through the entire simulation phases accounts for approximately  
50 three hours. Depending on the number of students in a cohort, three hours per student attending  
51 and participating in the simulation experience needs to be a further consideration. Also, given that  
52 there may not be equal numbers of students across different disciplines that are able to participate  
53 at any one time, flexibility of the professions and student numbers is required. Furthermore, having  
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3 additional nursing students involved compared to the other health professional students may  
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5 actually reflect the norm for a hospital practice environment.  
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8 While the pilot did not address the way in which it could be embedded into the curricula, previous  
9  
10 research indicates the importance of seeking ways to expedite this so that all students might benefit  
11  
12 from the opportunity to engage in IPC and IPE for future cohorts. Future considerations and the  
13  
14 ongoing implementation and sustainability of the simulation involving multiple disciplines would  
15  
16 require the simulation to become part of the curriculum across all disciplines involved. The finding  
17  
18 that the only time available for all participants in this study was outside of the scheduled classes at  
19  
20 the end of the academic year indicates that scheduling might form a limitation to its wider  
21  
22 implementation for a larger number of students. Thus, difficulties in implementation into curriculum  
23  
24 related to scheduling or timetabling of student availability may pose a potential limitation for  
25  
26 successful implementation.  
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30  
31 There is no doubt that the co-ordination of timetables and delivering of IPE and IPC across disciplines  
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33 will require a concerted institutional effort supporting implementation across multiple parties, and  
34  
35 including several considerations impacting more widely on the availability of academics, scheduling  
36  
37 and availability of rooms, and financial support for simulated patients and confederate nurses. In  
38  
39 future, Faculty/academic staff could be involved by participating as a simulated patient or  
40  
41 confederate nurse, which will reduce costs and enhance scale-up and sustainability. However,  
42  
43 Institutional support would be essential for successful implementation on a broader scale, and can  
44  
45 include a number of elements, including funding and time to primarily support academic staff,  
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47 patient or client based developed resources to stimulate reflection and actors for the logistics  
48  
49 around the simulation processes used within the model.  
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54 In addition, the development and writing of authentic cases collaboratively across disciplines would  
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56 require access to relevant individuals with expertise in diverse areas of health. Training of staff to  
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58 deliver the required outcomes for the IPC experience, and to then train future academic staff to  
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3 ensure continuation for the direction and delivery of effective IPE and IPC models of teaching and  
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5 learning for future cohorts. Evaluation research to identify potential means of sustainability; and  
6  
7 ways to identify outcomes for students in relation to IPE and IPC and to identify priorities for the  
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9 expansion of interprofessional simulation (e.g., patient groups, health conditions, environmental  
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11 hazards or disasters).  
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### 14 15 **3. Conclusion**

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18 Interprofessional education and collaborative reflective practice plays an important role in  
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20 healthcare. Given the importance of these areas in practice with the potential to affect future  
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22 decision-making and patient health outcomes, it is essential to develop these skills within the higher  
23  
24 education context and develop the capacity to share those learnings with peers in and across health  
25  
26 disciplines. Building on the original RIPE (Reflective Interprofessional Education) model [REDACTED]  
27  
28 [REDACTED]), this adapted version, RIPE-N (Reflective Interprofessional  
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30 Education-Network) model for IPE and IPC teaching and learning with an extended network of  
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32 healthcare professionals has the potential to enhance effective communication and collaboration  
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34 with other healthcare professional students, develop rapport and respect for other responsibilities  
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36 and expertise and prepare students for future roles working effectively within a multidisciplinary  
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38 healthcare team.  
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[REDACTED]  
[REDACTED]  
[REDACTED] stroke and donated her time and consented to be interviewed on camera to enhance the authenticity of the patient case. In addition, the authors would like to acknowledge the media team at [REDACTED] who provided a video for use [REDACTED] journey throughout her hospital stay. The authors would also like to acknowledge the [REDACTED] for a small grant providing gift vouchers to student volunteer

## Disclosure Statement

No potential conflict of interest was reported by the authors.

**Appendix 1.** Patient Case Details on Admission

<p><b>Family Name: Harper</b>  <b>Given Name: Justine</b>  <b>MRN:</b> 601-671-99  <b>DOB:</b> 01/July/1992  <b>Age:</b> 27</p>	<b>MO:</b> Dr. Varmin
<p><b>Weight:</b> 67kg  <b>Height:</b> 175cm</p>	
<p><b>Allergies: ?</b></p>	
<p><b>NOK:</b> Mrs Rose Harper (Mother)</p>	
<p><b>06:30</b>  <b>Presentation:</b>  27 year old female presented to ER at 0615 with slurred speech, (R) facial droop, Right Sided weakness of R UL + LL. Awoke this morning at 0530 with HA, speech and comprehension difficulties, fiancé present</p> <p><b>PMHx:</b>  Nil significant, Family Hx: mother- Hx of breast cancer and Type 2 diabetes, obese, father: HTN</p> <p><b>Medication:</b>      Rizatriptan wafers 10mg tds prn for migraine                                   Ibuprofen 200mg-400mg tds prn for migraine (onset since menstruation age 13.5 yr) Metoclopramide 10mg daily for nausea                                   OCP: Yasmin once daily (changed from Triphasil 10 years ago)                                   St John's Wart 1 daily prn when feeling anxious                                   Melatonin daily 1-2 hours prior to bed (when travelling)</p> <p><b>PE:</b>  Vital signs: T: 38.4, HR: 112, BP 148/98, RR: 22, SpO2 97% RA.</p> <p><b>General:</b>  alert + oriented person/place/time GCS :15</p> <p><b>HEENT:</b>  NCAT, EOMi, PEARL</p> <p><b>NECK:</b>  thyroid not palpable, no LAD, carotid pulse 2+B, no bruits, no JVD</p> <p><b>RESP:</b>  Reduced BS bilateral bases. No crackles, wheezes, or rubs CXR: NAD  Cardiac: No heaves or thrills. ECG: Regular rhythm with occasional extra beat. Normal S1, S2</p> <p><b>ABD:</b>  +BS, distended, nontender, no hepatosplenomegaly, liver percussed to 9cm at MCL</p> <p><b>PULSES:</b>  2+femoral B, 1+ PT/DP (posterior tibial/dorsal pedis) B (bilateral)</p>	

**EXT:**

warm, non-tender; no clubbing, no cyanosis.

**NEURO:**

**MENTAL STATUS:** A&Ox3 (or alert and orientated to time/person/place) **LANGUAGE/SPEECH:** Fluent verbal output, intact naming, repetition & comprehension at conversational level. Decreased speech intelligibility - some dysarthria evident.

**CRANIAL NERVES:**

II: Pupils equal and reactive (PEARL), no RAPD

III, IV, VI: EOM intact, no gaze preference or deviation V: intact

VII: R sided facial asymmetry VIII:  
normal hearing to speech

IX/X: decreased palatal elevation on R XI:  
intact

XII: R sided weakness, decreased lingual ROM on R

**MOTOR:** 5/5 in both upper and lower extremities

**REFLEXES:** ++ throughout, symmetrical, bilateral flexor planters

**SENSORY:** Normal to touch, temperature & pin prick in all extremities

**COORD:** Normal finger to nose and heel to shin, no tremor, no dysmetria, normal gait

**PLAN:**

1. Admit under Dr. C. Varmin
2. CTB

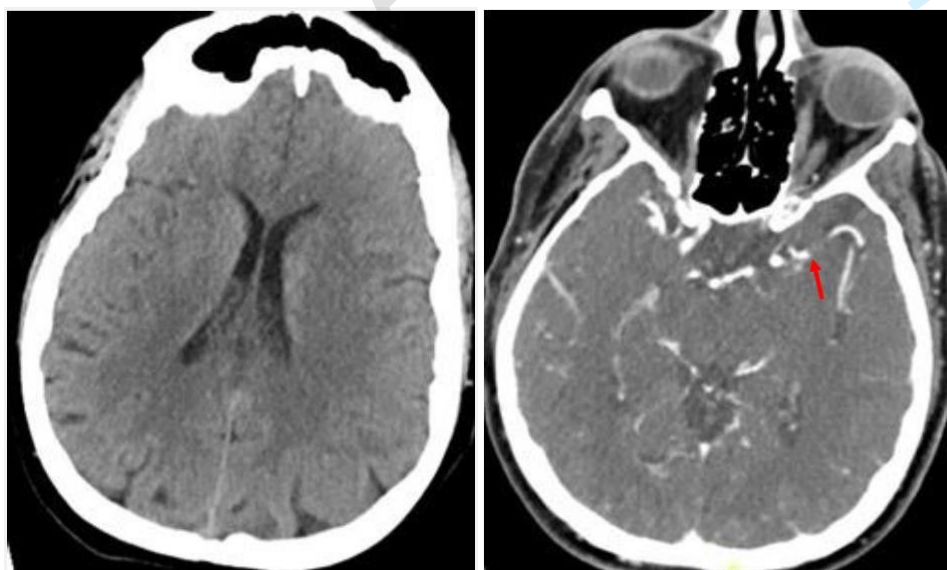
**FINDINGS:**

Non-contrast CT:

No intracranial haemorrhage; equivocal hypodensity in the left middle cerebral artery territory (1). CT angiography showed a left middle cerebral artery occlusion (2).

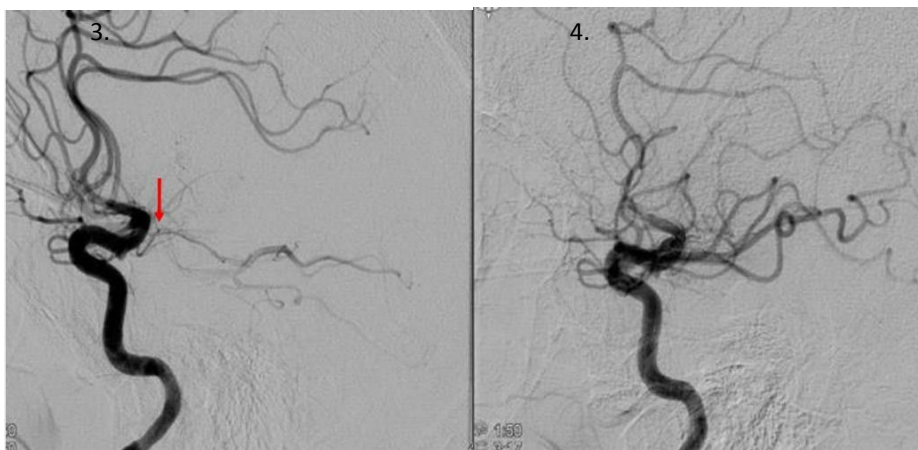
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She was given Alteplase intravenous tPA at 2 hours from symptom onset and transferred to the comprehensive stroke centre, where digital subtraction angiography confirmed left middle cerebral artery occlusion (3). She underwent mechanical thrombectomy with recanalization of the MCA (4). Transferred to Acute Neuro Ward.



LABS		
Biochemistry:		Ranges
Sodium	140	134 – 146 mMol/l
Potassium	4.0	3.4 – 5.0 mMol/l
Calcium	2.3	2.25 – 2.65 mMol/l
Magnesium	0.8	0.7 – 1.1 mMol/l
Bicarbonate	24	22 – 26 mMol/l
Creatinine	115	50 – 120 mMol/l
Urea	7.0	3.0 – 8.0 mMol/l
Glucose	5.0	3.9 – 6.2 mMol/l (fasting)
<b>Haematology:</b>		
Haemoglobin	125	♂ 130 – 180 g/l ♀ 120 – 160 g/l
Haematocrit	47.6	♂ 42 – 52% ♀ 37 – 48%
Red cell count	4.3	4.2 – 5.8 million
White cell count	11.4	4.3 – 10.8 thousand
Platelet count	300	150 – 350 thousand

## References

Baile, W.F. & Blatner, A. (2014). 'Teaching communication skills: using action methods to enhance role-play in problem-based learning', *Simul Healthc*, vol. 9, no. 4, pp. 220-7.

Biggs J, Tang C. (2011). *Teaching for quality learning at university*. 4th Edition ed. Berkshire, England: Open University Press.

Decker S, Sportsman S, Puetz L, Billings L. (2008) The evolution of simulation and its contribution to competency. *J Contin Educ Nurs*. 39(2):72-80.

El-Awaisi A, Joseph S, El Hajj MS, Diack L. (2017). A comprehensive systematic review of pharmacy perspectives on interprofessional education and collaborative practice. *Research in Social and Administrative Pharmacy*

Gaba, D. (2004). 'The future vision of simulation in healthcare', *Quality and Safety in Health Care*, vol. 13, pp. 1:2-10.

Gibson A, Aitken A, Sandor A, Buckingham Shum S, Tsingos-Lucas C, Knight S (2017). Reflective writing analytics for actionable feedback. Paper presented at: Proceedings of LAK17: 7th International Conference on Learning Analytics and Knowledge, March 13-17, 2017, Vancouver, Canada.

Hardisty J, Scott L, Chandler S, Pearson P, Powell S. (2014). Interprofessional learning for medication safety. *Clinical Teacher* ;11 (4):290-296.

Kauhanen ML, Korpelainen JT, Hiltunen P, et al. (2000). Aphasia, depression, and non-verbal cognitive impairment in ischaemic stroke. *Cerebrovascular diseases*;(6):455-461.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Mantzourani E, Desselle S, Le J, Lonie JM, Lucas C. (2019). The role of reflective practice in healthcare professions: Next steps for pharmacy education and practice. *Research in Social and Administrative Pharmacy*; 15(12): 1476-1479

Meakim C, Boese T, Decker S, Franklin AE, Gloe D, Lioce L, Sando CR, Borum JC. (2013) *Clin Sim Nurs*; 9(6): S3-S11

1  
2  
3 Okuda Y, Bryson EO, DeMaria S Jr, Jacobson L, Quinones J, Shen B, Levie AI. (2009). The utility  
4 of simulation in medical education: what is the evidence? *Mt Sinai J Med*; 76(4): 330-343.

6  
7 Porth CM. (2010). *Essentials of Pathophysiology: Concepts of Altered Health States*. 3rd ed.  
8 Sydney: Lippincotte Williams & Wilkins.

10  
11 Rudolph, J.W., Raemer, D.B., & Simon, R. (2014) 'Establishing a safe container for learning in  
12 simulation: the role of the presimulation briefing', *Simul Healthc*, vol. 9 no. 6, pp. 339-349.

14  
15 Schon D. (1995) *The Reflective Practitioner: How Professionals Think In Action*. Gower House,  
16 England: Ashgate Publishing Ltd.

18  
19 Smithson J, Bellinghan M, Glass B, Mills J. (2015). Standardized patients in pharmacy  
20 education: An integrative literature review. *Currents in Pharmacy Teaching and Learning*; 7:  
21 851-863.

23  
24 Stull CL, Blue CM. (2016). Examining the influence of professional identity formation on the  
25 attitudes of students towards interprofessional collaboration. *Journal of Interprofessional*  
26 *Care*; 30(1):90-96.

28  
29 Thurston MM, Chesson MM, Harris EC, Ryan GJ. (2017). Professional Stereotypes of  
30 Interprofessional Education Naive Pharmacy and Nursing Students. *American Journal of*  
31 *Pharmaceutical Education*; 81 (5) Article 84.

32  
33 Tsingos C, Bosnic-Anticevich S, Smith L.(2014) Reflective Practice and Its Implications for  
34 Pharmacy Education. *American Journal of Pharmaceutical Education*;78(1), Article 18.

36  
37 Tsingos C, Bosnic-Anticevich S, Smith L. (2015) Learning styles and approaches: Can reflective  
38 strategies encourage deep learning? *Currents in Pharmacy Teaching and Learning*; 7(4):492-  
39 504.

41  
42 Tsingos-Lucas C, Bosnic-Anticevich S, Schneider C, Smith L. (2016a) The effect of reflective  
43 activities on reflective thinking ability in an undergraduate pharmacy curriculum. *American*  
44 *Journal of Pharmaceutical Education*; 80 (4), Article 65

46  
47 Tsingos-Lucas C, Bosnic-Anticevich S, Smith L. (2016b) A Retrospective Study on Students' and  
48 Teachers' Perceptions of the Reflective Ability Clinical Assessment. *American Journal of*  
49 *Pharmaceutical Education*;80(6), Article 101.

51  
52 Tsingos-Lucas C, Bosnic-Anticevich S, Schneider CR, Smith L. (2017a) Using Reflective Writing  
53 as a Predictor of Academic Success in Different Assessment Formats. *American Journal of*  
54 *Pharmaceutical Education*; 81(1):Article 8.

55  
56 Tsingos-Lucas C, Bosnic-Anticevich S, Smith L.(2017b) Students' and pharmacy educators'  
57 perceptions of integrating the Reflective Ability Clinical Assessment (RACA) into an  
58 undergraduate curriculum. *Research in Social and Administrative Pharmacy*; 13(4):e28.

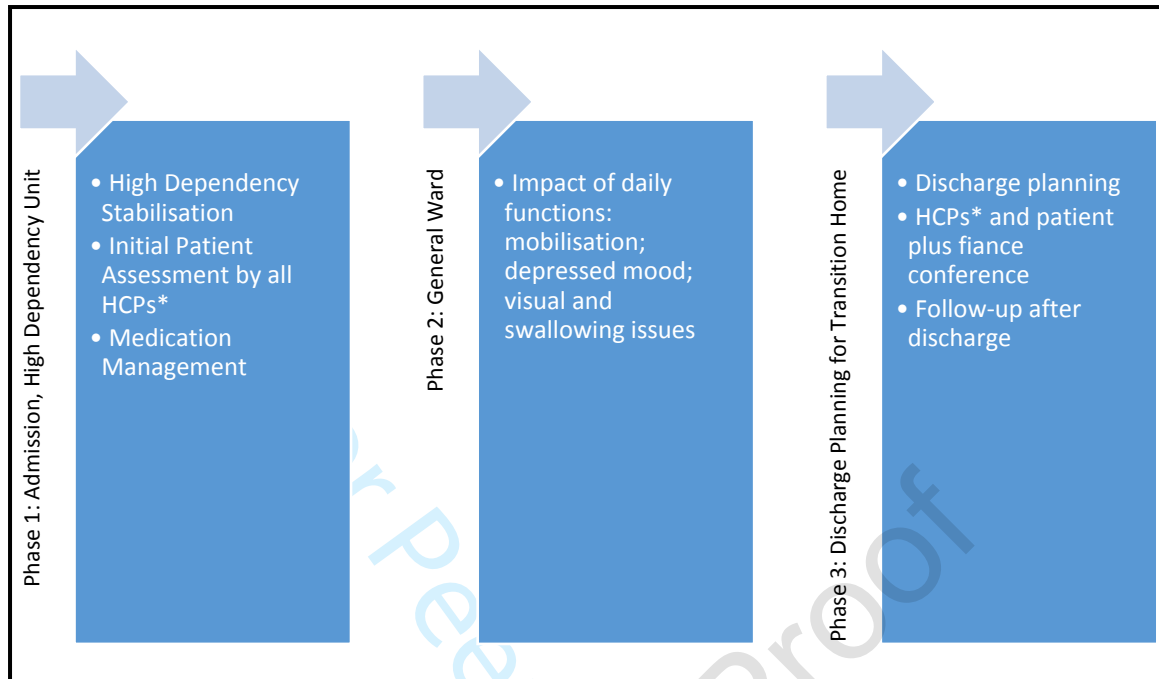
1  
2  
3 Wilbur K, Kelly I. (2015). Interprofessional impressions among nursing and pharmacy  
4 students: a qualitative study to inform interprofessional education initiatives. BMC Medical  
5 Education;15:53.  
6  
7

8 World Health Organization (2010). Framework for action on interprofessional education and  
9 collaborative practice. In. Geneva: WHO.  
10

11 Worrall L.(2014) Stroke and aphasia. Australian Aphasia Rehabilitation Pathway;  
12 <http://www.aphasiapathway.com.au/?name=About-aphasia>. Accessed 23 July, 2018.  
13  
14

15 Zwarenstein M, Goldman J, Reeves S. (2009) Interprofessional collaboration: effects of  
16 practice-based interventions on professional practice and healthcare outcomes. The  
17 Cochrane database of systematic reviews; (3):Cd000072.  
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Key: HCPs: Healthcare Professionals

**Figure 1.** Description of the RIPE-N Model Phases adapted from the RIPE Model [REDACTED]

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## Student Simulation Guide RIPE-N Pilot

<b>Course/Subject</b>	RIPE-N pilot
<b>Simulation Title:</b>	RIPE-N: Reflective Interprofessional Education Network Model - a pilot study across the 5 disciplines of nursing, orthoptics, pharmacy, physiotherapy, and speech pathology.
<b>Week/Date:</b>	18.12.2019
<b>Sim Scenario</b>	This case study involves a 27-year-old woman who awoke this morning with headache, visual disturbance, and speech and comprehension difficulties. She presented to ER at 0615 with slurred speech, (R) facial droop, right sided (upper and lower limb) weakness. This simulation will lead you through the patient journey from High Dependency Unit to through to discharge, working in an interprofessional team to derive to clinical decisions for the patient.
<b>Significance:</b>	<p>There are approximately 15 million strokes occurring worldwide annually (Worrall, 2014), and (b) an estimated one third of all individuals who experience a stroke, present with aphasia (Kauhanen, Korpelainen, Hiltunen, et al., 2000).</p> <p>“Stroke is a leading cause of serious, long-term disability, the effects of which may be prolonged with physical, emotional, social, and financial consequences not only for those affected but also for their family and friends ... and remains a complex clinical condition that requires health professionals to work together to bring to bear their collective knowledge and specialist skills for the benefit of stroke survivors. Multidisciplinary team working is regarded as fundamental to delivering effective care across the stroke pathway” (Clarke and Foster 2015, p.1).</p>
<b>Learning Objectives:</b>	<ol style="list-style-type: none"> <li>1. Uses clinical judgement to provide safe, evidence-based, technically proficient care within their scope of practice.             <ol style="list-style-type: none"> <li>a. Integrate appropriate supplementary medical and social information in the diagnosis and treatment of a patient’s condition</li> <li>b. Develop understanding of risks, benefits, and complications of NG tube care associated with your discipline and generally.</li> <li>c. Plan an intervention in collaboration with the patient, family, and other members of the interprofessional healthcare team (nursing, orthoptics, pharmacy, physiotherapy, and speech pathology)</li> </ol> </li> <li>2. Collaborates and communicates to foster relationships, role clarity, and shared understandings within the interprofessional team.             <ol style="list-style-type: none"> <li>a. Demonstrate an understanding of the importance of documentation</li> <li>b. Represent your discipline during an interprofessional team meeting</li> <li>c. Demonstrate effective communication skills with the interprofessional team in the design and delivery of clinical services</li> <li>d. Develop an awareness of the role of other disciplines in interprofessional healthcare team and how each contributes to the effective management of patients with neurological conditions</li> </ol> </li> <li>3. Positions the patient at the centre of the interprofessional healthcare team in recognition of the patient as an expert             <ol style="list-style-type: none"> <li>a. Identify the patient’s goals and expectations</li> <li>b. Communicate effectively with the patient and family using a patient-centred approach</li> <li>c. Demonstrate a professional, ethical, person centred, and inclusive approach</li> </ol> </li> </ol>
<b>Associated Pre-Work:</b>	Students are required to read their discipline specific pre-readings. Provided. You will also benefit from reviewing the information provided for the other health disciplines so as to develop your knowledge of their roles and approach to the patient.

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3 **Figure 2.** Student Brief prior to attending the Simulation Laboratory  
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<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50</p> <p><b>Phase 1: Day 2 High Dependency Unit</b></p> <p>Standardised Patient Prompts</p>	<p>Name: Justine Harper</p> <p>Details:</p> <p>Age 27 yo female BMI 23 Fit Ht 175cm Wt 67kg</p> <ul style="list-style-type: none"> <li>➤ Occupation: Full time professional- works in Sales and Marketing role for an International company; travels monthly to Asia Pacific Region for work and travels twice a year to UK to visit brother; Stressful job, long hours, deadlines</li> <li>➤ Business Degree at University</li> <li>➤ Lifestyle: smoker, one pack per day since 18 years of age</li> <li>➤ Other medical: Migraines since onset of menstruation from age 12.5 y (photosensitive, nausea when pre-menstrual)</li> <li>➤ Refractive error - moderate myopia, Contact lens wearer since age 18 but glasses since age 13-14 ish. Wears monthly extended wear Contact Lenses, due for new pair which is why removed last night, does get red and irritable eyes by the end of the month due to Contact lenses in air condition environments. Should be using lubricants eye drops but often forgets to use them.</li> <li>➤ Family: Fiancé of almost 2 years</li> </ul> <p>Medications and non-prescription medication prior to admission:</p> <p>Oral contraceptive pill (Yasmin) daily (Commenced OCP since age 15 and started with Triphasil but felt nauseous so changed 10 years ago to Yasmin)</p> <p>Ibuprofen 200mg-400mg tds prn for migraine</p> <p>Ketoprofen eye drops</p> <p>Blackmores St John's Wart 1 tds prn (for mild anxiety, helps calm her when work "gets too much" )</p> <p>Metoclopramide 10mg 1 tds prn (for nausea when having migraines)</p> <p>Melatonin before bedtime (especially when travelling- helps sleep)</p> <p>Rizatriptan 10 mg wafer tds prn (For migraines, helps with her nausea too)</p> <p>Family Hx: mother Hx of breast cancer, Type 2 diabetes, obese Father: Hypertension</p>
<p>51 52 53 54 55 56 57 58 59 60</p> <p>Standardised Fiancé prompts</p>	<p>Name: Michael Hailer</p> <ul style="list-style-type: none"> <li>➤ Shows concern for his partner and her condition</li> <li>➤ Holds up a cosmetic bag with meds which he collected to take to hospital.</li> <li>➤ Asks about these and whether she needs them because it seems that she has not been taking these since she arrived in hospital</li> <li>➤ Could ask, "should I bring in her old glasses"</li> </ul>



<p><b>Phase 2: Day 4 Ward</b></p> <p>Standardised Patient Prompts</p>	<ul style="list-style-type: none"> <li>➤ Fever (Confederate nurse just took temp), feels hot and a little nauseous</li> <li>➤ Anxious about the new diagnosis of a “complicated UTI” (Confederate nurse mentions this to patient that she will be starting a new medication for the UTI)</li> <li>➤ Feeling “down” and a little teary and venerable requests St John’s Wart (which worked well in the past)</li> <li>➤ Communication still a little vague (forgetting some words still)</li> <li>➤ Still hungry (coughs immediately when drinking water)</li> <li>➤ Physio wants to get patient up and walking (but still feels a little weak)</li> <li>➤ Neglect has mostly resolved except for navigation/collisions (mild) and gaze (mild)</li> </ul>
<p>Standardised Fiancé prompts</p>	<ul style="list-style-type: none"> <li>➤ Confederate Nurse mentions additional diagnosis of UTI and starting new IV meds (Gentamicin)</li> <li>➤ Fiancé asks what this is and does it have any side effects</li> <li>➤ Also asks if that is ok as she has been allergic to antibiotics in the past</li> <li>➤ Concerned for her “depressed mood” and asks if she can have some of the St John’s Wart that he brought in with him</li> </ul>
<p><b>Phase 3: Transition to Discharge: Collaborative with patient and fiancé</b></p> <p>Standardised Patient Prompts</p>	<ul style="list-style-type: none"> <li>➤ Patient asks about meds on discharge</li> <li>➤ Why taking a cholesterol lowering agent when told that cholesterol is in a good range. Is that normal?</li> <li>➤ Realise smoking cessation should be done but tried in the past without success. Really only in the contemplation stage. No clear strategies or intention (planning).</li> <li>➤ What medications should I be taking now? Why?</li> <li>➤ When can I drive?</li> <li>➤ When can work?</li> <li>➤ Can I do my old role at work?</li> <li>➤ What about travel, flying, etc?</li> <li>➤ Why did this happen and will it happen again?</li> </ul>
<p>Standardised Fiancé prompts</p>	<ul style="list-style-type: none"> <li>➤ Fiancé asks length of time for recovery</li> <li>➤ Fiancé asks re: Meds on discharge</li> <li>➤ Fiancé asks Any risk factors to watch out for? Will it affect intimacy?</li> <li>➤ Fiancé concerned re: Any follow up required?</li> </ul>

**Figure 3.** Standardised Patient and Standardised Fiancé prompts for each Phase of the RIPE-N model

**Table 1**

Reflective prompts utilised for the interprofessional reflective collaborative stations: 'Pause and Reflect' Station \*

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1. Please discuss among your group of health professionals the main issues and concerns of this case. Were there any particular challenges and/or barriers you had regarding the unfolding case or other aspects of the simulation laboratory?
  2. Consider which health professional(s) you will need to discuss your issues or concerns with
  3. Consider what did you perceive as barriers or enablers to effective communication and collaboration and what did you do to overcome any perceived barriers?
  4. Consider your own health profession, eg: your professional role and how you fit within the multidisciplinary team.
- 

\*Reflective prompt questions adapted from [REDACTED]

**Table 2.****Discharge planning prompts for Phase 3 of RIPE-N**

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1. What will you be discussing with your patient and fiancé?
  2. What medications will be required on discharge and why; who will you be discussing this with?
  3. What advice/counselling will you be addressing and who will you be discussing this with?
    - Smoking cessation
    - Follow-up treatment/clinics/pathology
    - Stroke Risk Factors
  4. Who will you be collaborating with prior to discussing discharge issues?
  5. Are there visual or safety issues regarding mobility?
  6. Need for continued rehabilitation?
  7. Need for equipment/modifications for home (safety concerns)?
- 

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**Table 3.**

Reflective prompts utilised for interview with Stroke survivor patient \*

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1. How has Stroke affected your day-to-day life?
  2. What did you find helpful on your journey to recovery?
  3. You would have seen diverse health professionals through your hospital journey. Can you discuss how they worked together to help you recover?
  4. What are the next steps for you towards full recovery?
- 

\*Video of interview of Stroke survivor, utilised in Phase 3 of RIPE-N model

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**Table 4.**

Guided Reflective prompts utilised for final 'Pause and Reflect' station

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1. What did you perceive as barriers or enablers to effective interdisciplinary communication and collaboration during the simulation?
  2. What did you do to overcome any perceived barriers?
  3. Did your rapport with your teammates change throughout the simulation (please discuss)?
  4. Can you describe how you think this experience might be similar or different to when you are on clinical placement?
  5. What is your understanding of the role of the other disciplines and how did this change over the day?
  6. Can you comment on any stereotypes you might have had about the other professions? Were these stereotypes proved or disproved?
  6. What new insights do you have about the other professions (Pharmacy, Nursing, Orthoptics, Speech Pathology)?
  7. How do you see your own profession fitting into the multi-disciplinary team?
  8. What other lessons have you learnt as a result of participating in today's simulation?
  9. What are your thoughts regarding this multidisciplinary teaching and learning activity (RIPE-N)
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