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A Match Made in Heaven: Exploring Views of Medicine Students, Pharmacy Interns and Facilitators in an Interprofessional Medicines Pilot Study

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Abstract

Purpose: To date, few interprofessional education initiatives have included just medicine and pharmacy learners. This research sought to explore learners' and facilitators' views of an interprofessional education medicines pilot study involving medical students and pharmacy interns. **Methods:** Qualitative feedback was gathered from the participating learners and a facilitator focus group was undertaken. **Results:** Medical student and pharmacy intern learners reported enjoying taking part and found the simulation and overall initiative to be authentic. They described learning most about each other's roles and responsibilities and about teamwork, collaborative management, and collaboration. Some logistical improvements were suggested. The facilitators judged that the topic of medicines, with medical and pharmacy learners taking part, to be a match made in heaven. **Conclusions:** Medical student and pharmacy intern learners found the medicines topic and discipline grouping facilitated their learning. Some topics and groups of disciplines are ideally matched for IPE and such a nexus should be capitalised upon.

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A Match Made in Heaven: Exploring Views of Medicine Students, Pharmacy Interns and Facilitators in an Interprofessional Medicines Pilot Study

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ABSTRACT

Purpose: To date, few interprofessional education initiatives have included just medicine and pharmacy learners. This research sought to explore learners' and facilitators' views of an interprofessional education medicines pilot study involving medical students and pharmacy interns. **Methods:** Qualitative feedback was gathered from the participating learners and a facilitator focus group was undertaken. **Results:** Medical student and pharmacy intern learners reported enjoying taking part and found the simulation and overall initiative to be authentic. They described learning most about each other's roles and responsibilities and about teamwork, collaborative management, and collaboration. Some logistical improvements were suggested. The facilitators judged that the topic of medicines, with medical and pharmacy learners taking part, to be a match made in heaven. **Conclusions:** Medical student and pharmacy intern learners found the medicines topic and discipline grouping facilitated their learning. Some topics and groups of disciplines are ideally matched for IPE and such a nexus should be capitalised upon.

Keywords: interprofessional education, learners, pharmacy, medicine, facilitators, simulation, authentic

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INTRODUCTION

Interprofessional education (IPE) supports the development of interprofessional competencies, so new graduates will be team-work ready for clinical practice.¹⁻⁴ Some clinical activities are particularly dependent on several disciplines working well together, with the prescribing, dispensing, administration, patient-education, and monitoring of medicines being such examples.⁵

In New Zealand (NZ), interprofessional teamwork is recognised by the Ministry of Health as necessary for safe, patient-focused, evidence based medicines delivery, reconciliation, and education.⁶ In primary health care settings, general practitioners (GPs) and community pharmacists, although not commonly co-located in the same building, share the same goal of improving patient outcomes through the use of medicines.⁷ In general, both GPs and pharmacists provide education to patients about diseases and medicines options as well as offering general support.⁸ However there are limited opportunities for students to see interprofessional teamwork regarding these activities in clinical practice and students and new graduates report feeling unprepared for differentiating between different disciplinary roles and methods to ensure effective communication and collaboration.^{9,10} This reported gap makes the topic of medicines very suitable for IPE.¹¹ However despite its apparent suitability, few international IPE initiatives have concentrated on these aspects, and those that do, have focused almost solely on medicines safety.^{9,12,13}

NZ IPE initiatives, like other countries, usually involve several disciplines including pharmacy students, albeit the latter often with limited numbers.¹⁴⁻²⁰ IPE medicines initiatives sometimes only include pharmacy and medical students as arguably the topic of medicines is of greater relevance to medical and pharmacy learners.²¹⁻²⁴ This research sought to explore 1) learners' and facilitators' views of an IPE Medicines Pilot involving medical students and pharmacy interns and 2) learners' views of the outcomes.

Overview of the Development of the IPE Medicines Pilot

Four facilitators, part of a collective of educators from different institutions who regularly deliver IPE as a partnership, began the IPE Medicines Pilot (the IPE Pilot) initiative.²⁵ Those involved were employed by the Pharmaceutical Society of New Zealand (DW- a pharmacist) and University of Otago Wellington (BG- a general practitioner, CM- a pharmacist and EM- a nurse). The facilitators were experienced in delivering IPE, having first come together three years previously to facilitate a regularly offered IPE initiative including students from multiple disciplines and focused on long-term conditions care.

The IPE Pilot, a two-hour workshop, took five months to develop. Initially, only three members were involved (DW, BG and EM) and at the start of the 5th month a further member (CM) joined. Over the time period, meetings and emails included discussions about the learning outcomes, lesson plan, case vignettes, simulated patients [actors] to play the cases, and the methodology for the research evaluation. Consultation was also undertaken with a clinical pharmacist in general practice and an education researcher experienced in IPE evaluation design.

The IPE Pilot class included 16 medical students in the 5th of a 6 year degree and 9 pharmacy interns, half way through their 1 year post-graduate internship, following completion of a 4 year pharmacy degree.²⁶ Although graduates, pharmacy interns were asked to take part in the IPE initiative as there were no pharmacy students available to join locally. The pharmacy interns who volunteered to join agreed to travel ahead of a scheduled pharmacy residential programme to take part in the Pilot. Fifth year medical students who had not been included in other university IPE initiatives were selected to take part in the IPE Pilot.

The facilitator team established learning outcomes for the Pilot informed by the Canadian IPE competency framework²⁷ (see Table 1), and then developed a workshop lesson plan to meet the outcomes (summarised in Figure 1).

Table 1. The learning outcomes

IPE Competencies	Learning outcomes
1. Communication:	Identify enablers to communication between pharmacists and doctors
2. Patient centred approach	Show case each profession's skill sets and consider how each can contribute to person centred care
3. Achieving Collaborative Management	Take part in developing a collaborative management approach based on the person's priorities
4. Roles and responsibilities, Team functioning	Identify how each discipline works with people; identify what skills are held in common and which are different; identify when and how each profession could build on each other's skill sets
5. Collaboration	Participate in and demonstrate interpersonal and Interprofessional skills that are both effective and appropriate.

1. Medical students and pharmacy interns signed-in to the class, collected name badges, gave consent to be filmed and were each given a small bingo-type square with a different number and colour-coded black or red according to discipline.
2. Either five or six medical students and three pharmacy interns were allocated to sit at each of three tables. They shared morning tea and introductions were undertaken
3. The facilitators outlined the learning outcomes and the activities to achieve these. They explained the case developed for the IPE pilot was a patient with gout cared for in the community. Each of the three table groups would be allocated to a different classroom with an adjoining videography-enabled consultation room. In each classroom the patient with gout would be role-played by a simulated patient (a trained actor) and in each classroom the two clinical roles (one being a pharmacist and the other a general practitioner (GP)) would be played by students or interns. The GP would be played by two medical students and the pharmacist would be played by two pharmacy interns; each pair would work together to play the role of one clinician. The following written instruction was given: *“You will be working as a pair so you can ask each other for ideas but only one of you is to interact with the patient at a time”*.
4. To select the 2 medical students and 2 pharmacy interns to play the clinician roles two red and two black numbers were drawn per table from the colour coded numbers in a hat.
5. Each of the three table groups then moved to three different classrooms, each group accompanied by one facilitator (DW, BG or CM). The following activities were undertaken in each classroom simultaneously (with EM coordinating and troubleshooting).
 - The two pharmacy interns drawn to jointly play the case were given the case resources and allowed 10 mins to prepare for the 15-minute filmed consultation with a simulated patient (played by one of two males and one female; one simulated patient per classroom). The simulated patient and students and interns were filmed undertaking the consultation in private simulated consultation rooms, separate to the adjoining classrooms. While they did this, the remaining five/six medical students and one pharmacy intern brainstormed the response to a question about the roles and responsibilities of community pharmacists and GPs.
 - Then in the same way, the two medical students drawn to play the case were given the resources to prepare and were then filmed role-playing the case with the simulated patient. In contrast to the first role-play, this film was live streamed to the rest of the small group (three/four medical students and three pharmacy interns). Following this live-streaming, the film-recording of the pharmacy interns and the simulated patient was played to the group. In this way neither discipline was advantaged by seeing in advance how the other undertook the consultation and any differences in consultation style and language used were clearly apparent.
 - Finally, each group was facilitated to discuss how the two disciplines undertook the case consultation and how each discipline explained to the simulated patient the medical condition of gout and the need to take regular medicine to prevent gout. The facilitator prompted discussion to explore the differences and similarities in approach by each discipline, if and how this changed the content of the discussion with the patient and finally queried the possibilities to work collaboratively between disciplines.

Figure 1. The IPE Pilot workshop: an overview

METHODS

The University of Otago ethics committee approved a qualitative study (D18/167) to evaluate the pilot, in particular, to explore learners' and facilitators' views of the IPE Medicines Pilot and gauge how the learners viewed their outcomes. Interpretive Description (ID) methodology was adopted as it is useful for informing clinical understanding in areas such as health education, clinical practice, service delivery or policy by identifying themes and patterns within participant perspectives.^{28 29,30} It offers insight when there is limited information about a topic area, or when the information comes from another context or country³¹ and allows qualitative methods to be tailored to suit the time the participants have available,³² with different qualitative methods used in the same study.³³

Two methods were included:

1. **Learner Feedback:** At the end of the class, students and interns were asked to give written feedback to four questions (see Figure 2) on Post-it sticker notes (one question per Post-it). Post-it notes were colour coded according to discipline; medicine students were given blue Post-it notes and pharmacy interns were given green Post-it notes. Post-it notes were attached to four large sheets as students/interns exited the door with 24 out of 25 students or interns completing the Post-it notes. The data was entered into NVivo 11 (QSR International Pty Ltd) and the four questions used as Node categories to collate medicine and pharmacy learner responses. The first three questions were then further coded according to the Learning Outcomes looking at the number of variety of responses in each Learning Outcome and whether there were differences between disciplines. The fourth question was collated separately as it described learners' views about possible improvements to the initiative.
2. **Facilitator Focus Group Feedback:** Following completion of the IPE Pilot, the four facilitators and the IPE administrator were invited to attend a focus group undertaken by an external moderator. The semi-structured schedule included questions on: the process for developing the Pilot curriculum; overall value of the IPE experience; structure, logistics and delivery; suitability of topic, and the potential for students and interns to learn *with, from and about* each other (see Figure 3). The focus group was audio-recorded, transcribed and analysed using Interpretive Description.²⁸ Interpretive Description uses an inductive thematic approach allowing meaning to emerge from the data. NVivo 11 (QSR International Pty Ltd) was used to manage the qualitative data with open coding used to categorise data. This meant several codes could be applied to pieces of text to ensure alternative understandings were included.

What is one thing you learned about the other profession?

What is one thing you learned about the other discipline's skill set?

What did you learn about teamwork and collaborative practice?

How could the session be improved?

Figure 2. Feedback questions for medical students and pharmacy interns

1. Tell me about the planning for the prescribing pilot IPE?
 2. How did each shape the planning, pre-delivery?
 3. Tell me about the delivery of the prescribing pilot IPE?
 4. What did each of you contribute?
 5. What do you think others contributed that you couldn't?
 6. What did you get out of it?
 7. What was it like working in the teaching team?
 8. What would improve the pilot?
 9. Should we deliver it again?

Figure 3. Focus group interview questions

RESULTS

Learner Feedback

Students and interns were asked to write feedback on Post-it notes about four aspects; three relating to what they learned about the other discipline, their skills sets and interprofessional collaboration, and the fourth about possible improvements to the IPE Pilot. The Post-it note responses were collated according to the Learning Outcomes (Table 2, Appendix A). Some responses referred to more than one Learning Outcome and responses attributed to *Teamwork, Collaborative Management and Collaboration* were grouped together as they were often combined in the individual comments.

The majority of the responses were about *Roles and Responsibilities* (n=45) and the narrative included insightful comments that could be applied to clinical practice. Fewer (n=17) but still with detailed responses were made in relation to *Teamwork, Collaborative Management and Collaboration (grouped)*, and the least comments were about *Communication* and a *Patient Centred Approach*. There were also a range of constructive suggestions for improvements to the IPE initiative.

Facilitator Focus Group Feedback

Three main themes were identified from analysis of the facilitator focus group data: Theme 1) *Match Made in Heaven (but initial hard grunt)*, relating to the new initiative and the facilitator team; Theme 2) *Authenticity (make or break)*, relating to credibility of the teaching scenario and also the facilitator team; and Theme 3) *Looking Ahead (trade-offs)*.

Theme 1: Match Made in Heaven (but initial hard grunt)

This theme related to the IPE facilitators perceiving the topic of delivering medicines to a patient with gout in the community being an ideal IPE topic match for medical students and pharmacy interns. But, despite it being a *match made in heaven*, the facilitator team found unexpected difficulty in developing the IPE Pilot. Creating the Pilot de novo was described as hard work in two ways. Firstly, in developing the course structure and content and, secondly, in forming new working relationships, even though the facilitator team already knew each other.

I think pharmacy [and] medicine is the one [key area where people could work better together], because we're not ever co-located except very, very, very, very rarely. And we share patients a lot... (IPE facilitator 1) Yes, it's like it's a match made in heaven. (IPE facilitator 2)

[But] It was quite hard work... it took some grunt to do it... trying to meld approaches. (IPE facilitator 1)

Developing the curriculum through back-and-forth brainstorming brought each collectively closer together as team.

[we] had to sort of develop a rapport and work out where each other was coming from...there was a lot of brainstorming and counter brainstorming and then coming up with ideas and then recognise that probably that's not going to work and backtracking a bit and starting again. (IPE facilitator 3)

... you were really brave and you said things like: "no, this is not going to work" [for pharmacy]... We really had to sit up straight and think "why is [the facilitator] saying that, why is this not going to work"? And then- you were right, everything you said was right. (IPE facilitator 4)

Theme 2: Authenticity (make or break)

This theme related to the process and length of time the IPE facilitators undertook to create realistic content for the IPE Pilot. Participants discussed issues related to two key areas: authenticity of the scenario and authenticity of the facilitator team.

i. Scenario: Previous IPE experience meant early on in the planning process, the facilitator team recognised the importance of having a credible simulated scenario, in order to help students and interns to experience the scenario as real-life, rather than treat it as a 'case'.

We identified quite early on that we wanted [to include] a simulated patient so making sure it was, was authentic... how is it going to be tackled from the pharmacist's point of view and tackled from a GP's point of view... we spent a lot of time [on] what are we wanting to achieve. (IPE facilitator 3)

Because they knew the importance of having a believable scenario, the planning process involved creating a realistic storyline from the perspective of both disciplines. Developing exactly the right scenario across the two disciplines was a challenge that the facilitator team worked hard to address. Having IPE facilitators who were also clinicians enhanced the clinician-reality-check.

Having done a number of sort of IP initiatives, this is the one which you know I'd slot into the curriculum tomorrow without any apologies to anyone... it's really hard to set up useful IPE scenarios and settings, and this one you know was streets ahead of all of the others that we've done in my view in terms of unequivocal validity for both students, both groups of students equally. (IPE facilitator 1)

ii. Facilitator team: In addition to creating a believable patient scenario, the IPE facilitators knew from previous experience the importance of having a credible facilitator team. This believability related to perceptions of the students and interns, for example having face validity and walking the IPE talk.

In terms of the face validity of the session; you need a pharmacist, you need a doctor to be involved in doing the teaching if we're talking about interprofessional practice between pharmacists and doctors, for face validity. (IPE facilitator 1)

Credibility also meant having a relevant clinician to facilitate each of the three small groups, rather than a facilitator of another discipline in order to contribute topic specific information.

I was so relieved when [the late-arrival facilitator] agreed to [join] because I was going to have to pretend to be something in-between a pharmacist and a GP. That was going to be quite challenging because I'm sure that group would not have got as good a deal as they did with having a real pharmacist in the room. (IPE facilitator 4)

Theme 3: Looking Ahead (trade-offs)

This theme relates to trade-offs in assuring a sustainable IPE initiative and improvements to the IPE Pilot. Despite the barriers, the facilitator team voiced their desire to translate the successful Pilot with some improvements into routine teaching and upscale to include large numbers and thus widen the IPE learning opportunity.

i. Barriers to sustainability: There were logistical issues and challenges to upscaling the Pilot in the longer-term. The logistics of running the initiative were significant, from organisational tasks on the day ("We had somebody [a simulated patient] turn up at too early, didn't we?" (IPE administrator)), through to learning a new way of delivering the initiative and broader issues such as scheduling, recruitment and workload.

The video film involved a [simulated] patient. So it was a step up for us and using simulated patients and also using the Beeline recording [video-recording software]. So we had a few things that we had to get our head around which we haven't had to in class so I think that was good learning. (IPE facilitator 4)

The reality of fitting in the IPE Pilot initiative into students' and interns' busy curricula was seen as a key barrier, and also the challenges of recruitment. It was felt that voluntary recruitment would not have worked for medical students and the pharmacy interns having to come to the university from other parts of NZ ahead of their residential workshop was an inconvenience. This meant scaling-up was seen to be difficult and resource intense.

My sense of the fifth years [medical students] is that they are overburdened and worried about their exam at the end of the year and volunteering for anything they don't have to do I think is extraordinarily unlikely. (IPE facilitator 1)

It was on the last day of the module. Yes before they had a test at the end. Everything was stacked against it. (IPE facilitator 4)

Despite the trade-offs, attempting to scale-up and offer the workshop again and to greater numbers was also seen as a no-brainer given the success of the Pilot.

The trade-offs we made, worked well enough ...But I mean the thing I'm most conscious off is that we're not doing it for all students [and interns]. You know that's the whole frustration all of this work is that it's not that useful ... [if] it's not part of the training of [all] the student[s and interns]. We'd be crazy not to [deliver the initiative again], having put them in, hey you've got the investment you've put in so far and given that it worked... (IPE facilitator 1)

ii. Improvements: Having experience in delivering other IPE initiatives meant the facilitators were not just satisfied that the learners enjoyed the initiative, they also weighed up other considerations including barriers to greater learning. One barrier related to creating an even safer interprofessional learning environment and another to enabling increased time for the IPE activity.

a. Safe Learning Environment: There was a perceived need to temper the credibility of the scenario with the reality of providing students and interns with a safe interprofessional learning environment. This included weighing up the value of having students or interns pair-up to undertake the scenario, in order to take pressure off individual students or interns.

I would definitely retain the two students [or interns] in the room because I think it takes [off] the pressure. I think you know I think you're right one student in a consultation is the norm but you know I just think it would just feel grossly unfair on the student [or intern] to do that ... (IPE facilitator 2)

b. Allowing more time for the IPE activity: Facilitators considered the value of extending the timeframe for the IPE initiative such as having more time for the scenario, or providing a second scenario. This would allow students and interns a better opportunity to learn and to participate, including more being video-recorded.

I think we probably could get more learning out of it if we actually had two scenarios... if we then did it again with a patient with a different set of issues because [the] learning outcomes were how each discipline works with people. So seeing more examples might have drawn that out more. And then you would have been able to compare and contrast with a different [patient] presentation.... (IPE facilitator 3)

I think the students [or interns] felt a little bit short changed because [in our group we did not finish] we were rolling back to the big group when we actually really hadn't discussed all that we could have done or probably even. (IPE facilitator 2)

DISCUSSION

This study explored the perspectives of medicine and pharmacy learners and facilitators about an IPE Pilot and gauged the learner's views of their outcomes. IPE initiatives often involve more than two disciplinary groups, recommended to be four³⁴, as including diversity exposes learners to a wider number of disciplines.³⁵ However some IPE initiatives include just two disciplines with medicine and nursing given as an example of those sharing their studies.³⁵ Studies of IPE involving medicine and pharmacy learners have shown mixed results. In some, the learners did not benefit, or did not equally benefit, or the IPE unintentionally reinforced stereotyped views of the two disciplines.³⁶⁻³⁸ However, other initiatives were felt to be successful and this was credited to the IPE topic choice, having champions from both disciplines and that medicine and pharmacy are considered complementary disciplines.^{21,22,39} This study adds to the studies of successful medicine and pharmacy IPE. Learners recorded appreciative and non-judgemental views of each other's skills. The collated Post-it note responses showed students, met the specific learning outcomes regarding *Roles and Responsibilities, and Teamwork, Collaborative Management and Collaboration*. Facilitators felt having medicine and pharmacy learners together was a *match made in heaven*; they credited the success of the IPE to the initiative's authenticity but noted a number of trade-offs would be necessary to ensure the initiative was sustainable.

The success of this initiative appears to result from the following three factors, however it is unclear if all three factors are essential for successful medicine and pharmacy IPE and if so, to what degree; this needs further exploration.

Facilitators

The facilitators were experienced in IPE delivery as well as being clinically current and considerable time was put into ensuring the initiative was authentic; this is known to be central to successful IPE.^{19,40-43} However authenticity is arguably harder to achieve when using simulation, and the case and simulated patients must be believable.^{44,45} This study showed two levels of authenticity were needed: a). authenticity in relation to day-to-day clinical practice and b). authenticity to medical students and pharmacy interns when participating in a simulated consultation. Both levels are likely necessary in successful IPE initiatives, however this needs further investigation.

Patient Education

The topic of patient education (counselling) about gout management was one in which both disciplines have a role and interest but use different approaches when interacting with patients, with the latter creating a natural curiosity on both sides. This natural curiosity about the approaches, explanations and language used resulted in the learners reporting more than twice as many comments about better understanding each other's roles and responsible (who they are and what they do) than any of the other learning outcomes. This endorses the need to carefully pick the topic of learning for an interprofessional initiative;³⁴ one which is going to clearly display common values but different approaches and skills.

Video Recording

The process of video-recording the interaction with the simulated patient while not novel, engaged learners to a high level, while the other elements undertaken when students waited to take part, were interactive.^{46,47} Creating safe learning environments is a challenge when devising an IPE initiative⁴⁸ and learners in this Pilot reporting they appreciated having activities to naturally interact but also the opportunity to display their particular discipline skill set. It seems wise to include both aspects in IPE.

Having experienced IPE facilitators work together to form new curricula intuitively sounds a good idea. However, similar to the work on large-scale IPE foundational initiatives by Shrader et al, this study showed that it is not enough for experienced IPE facilitators to simply know and have previously worked with each other.⁴⁹ They had to actively work on the new curriculum development task together, undertaking the 'hard grunt'. The spin-off and length of time taken was the building of a deeper trust, which meant each facilitator was freely able to *speak-up* at various points in the development process when they believed the initiative was not likely to work for their respective discipline. This deep trust resulted in the team firmly committing to collaboratively shaping and reshaping the initiative and finally recognising the breakthrough moment when the IPE Pilot worked equally well for both medical students and pharmacy interns. However, despite their experience in IPE, this group of IPE facilitators fell into the trap of trying to achieve too much within a limited length of time. They devised five learning outcomes and aimed to develop a lesson plan to deliver these. Yet the students and interns provided feedback that they learned the most about *Roles and Responsibilities*, to a much lesser extent about *Teamwork, Collaborative Management & Collaboration* and minimally about *Communication* and a *Patient centred approach*. However, effective learning about roles and responsibilities is a positive outcome for this discipline grouping and another study on pharmacy and medical disciplines has noted this competency is harder for them to attain.⁵⁰ O'Leary et al report the importance of being realistic regarding how many learning outcomes can be achieved within a specified timeframe, with a small set of learning outcomes being more attainable.⁵¹

Some topics and discipline groupings are naturally a *match made in heaven* for IPE, (even though it may include just two disciplines), and when developing new initiatives, it seems wise to capitalise on this. The topic of medicines along with the grouping of pharmacy and medicine is one such match. The nexus between medicine and pharmacy created rich opportunities for skilled facilitators to design an IPE Pilot where interprofessional competencies could be successfully explored.

Limitations

The IPE Pilot included medical students who were mandated to take part plus pharmacy interns who were volunteers. Despite the Post-it note survey not showing any differences in the type of responses, this may have resulted in selection bias with the pharmacy interns who volunteered being more favourably disposed to IPE.⁵² The learning level of 5th year medical students and pharmacy interns was not equivalent as the interns were first-year graduates and already working with patients in clinical practice. Although there was no feedback by learners regarding a mismatch of learning levels, in future IPE, it would be optimal to include those at equivalent pre-registration learning levels.

The IPE facilitator group had already worked together for three years. It is possible their existing relationships enhanced the development and delivery of the Pilot which in turn influenced the participants' positive reaction.

CONCLUSION

Some disciplines and educational topics are a match made in heaven and IPE and such matches are likely to be successful for learners and facilitators. An IPE Medicines Pilot worked equally well for medical students and pharmacy interns particularly because of an authentic case and simulation process as well as an experienced IPE facilitator team being involved.

References

1. Institute of Medicine. *Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes*. Washington: The National Academies Press;2015.
2. Cox M, Cuff P, Brandt B, Reeves S, Zierler B. Measuring the impact of interprofessional education on collaborative practice and patient outcomes. *J Interprof Care*. 2016;30(1):1-3.[PMID 26833103]
3. Brewer M, Flavell H. Facilitating Collaborative Capabilities for Future Work: What Can Be Learnt from Interprofessional Fieldwork in Health. *Int J WI Learn*. 2018;IJWIL19(2):169-180
4. Dolan Watkins K. Faculty development to support interprofessional education in healthcare professions: A realist synthesis. *J Interprof Care*. 2016;30(6):695-701.[PMID 27459591]
5. Health Quality and Safety Commission New Zealand. Haumaru rongoā Medication Safety <https://www.hqsc.govt.nz/our-programmes/medication-safety/>. Published 2019. Accessed 10/8/19, 2019.
6. Ministry of Health. *Pharmacy Action Plan: 2016 to 2020*. Wellington: Ministry of Health;2016.
7. Gallagher RM, Gallagher HC. Improving the working relationship between doctors and pharmacists: is inter-professional education the answer? *Adv Health Sci Educ*. 2012;17(2):247-257.[PMID 21088991]
8. Bradley F, Elvey R, Ashcroft DM, et al. The challenge of integrating community pharmacists into the primary health care team: A case study of local pharmaceutical services (LPS) pilots and interprofessional collaboration. *J Interprof Care*. 2008;22(4):387-398.[PMID 18800280]

9. Wilson AJ, Palmer L, Levett-Jones T, Gilligan C, Outram S. Interprofessional collaborative practice for medication safety: Nursing, pharmacy, and medical graduates' experiences and perspectives. *J Interprof Care*. 2016;30(5):649-654.[PMID 27351385]
10. Cutler S, Morecroft C, Carey P, Kennedy T. Are pharmacy students adequately prepared to work in healthcare teams? *Pharm Educ*. 2020;20(1):43-51
11. Langlois S. Mapping current health professional curricula: Identifying common topics for an integrated interprofessional education curriculum. *J Interprof Educ Pract*. 2016;5:7-9
12. Patel N, Begum S, Kayyali R. Interprofessional Education (IPE) and Pharmacy in the UK. A study on IPE Activities across Different Schools of Pharmacy. *Pharmacy*. 2016;4(4):28.[PMID 28970401]
13. Kent F, Hayes J, Glass S, Rees CE. Pre-registration interprofessional clinical education in the workplace: a realist review. *Med Educ*. 2017;51(9):903-917.[PMID 28612407]
14. Horsburgh M, Lamdin R, Williamson E. Multiprofessional learning: the attitudes of medical, nursing and pharmacy students to shared learning. *Med Educ*. 2001;35(9):876-883.[PMID 11555226]
15. Lapkin S, Levett-Jones T, Gilligan C. A cross-sectional survey examining the extent to which interprofessional education is used to teach nursing, pharmacy and medical students in Australian and New Zealand universities. *J Interprof Care*. 2012;26(5):390-396.[PMID 22734941]
16. McKimm J, Sheehan D, Poole P, et al. Interprofessional learning for medical education in New Zealand. *N Z Med J* 2010;123(1320).[PMID 20720611]
17. Fouche C, Kenealy T, Mace J, Shaw J. Practitioner perspectives from seven health professional groups on core competencies in the context of chronic care. *J Interprof Care*. 2014(0):1-7.[PMID 24828623]
18. Pullon S, McKinlay E, Gallagher P, Gray L, Skinner M, McHugh P. Interprofessional education in a rural clinical setting: a quick-start innovation for final-year health professional students In: Abdulrahman K, Mennin S, Harden R, Kennedy C, eds. *Routledge International Handbook of Medical Education*. New York: Routledge; 2015.
19. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME Guide no. 9. *Med Teach*. 2007;29(8):735-751 [PMID 18236271]
20. El-Awaisi A, Joseph S, El Hajj MS, Diack L. A comprehensive systematic review of pharmacy perspectives on interprofessional education and collaborative practice. *Res Social Adm Pharm*. 2018;14(10):863-882.[PMID 29132909]
21. Vogler C, Arnoldi J, Moose H, Hingle ST. Interprofessional education involving medical and pharmacy students during transitions of care. *J Interprof Care*. 2017;31(3):404-406.[PMID 28140684]
22. Nagge JJ, Lee-Poy MF, Richard CL. Evaluation of a unique interprofessional education program involving medical and pharmacy students. *Am J Pharm Educ*. 2017;81(10):6140.[PMID 29367776]
23. Rotz ME, Dueñas GG, Zanoni A, Grover AB. Designing and evaluating an interprofessional experiential course series involving medical and pharmacy students. *Am J Pharm Educ*. 2016;80(5):85.[PMID 27402988]
24. Green J, Ross J, Braund R, Williamson M, Egan T. The Journey of a Prescription: Authentic Interprofessional Education Simulation of the Patient and Prescription Flow through Prescriber and Dispenser. *OSF Preprints*. 2019;15 May 2019
25. McKinlay E, Brown M, Beckingsale L, et al. Forming inter-institutional partnerships to offer pre-registration IPE: a focus group study. *J Interprof Care*. 2019.[PMID 31750747]
26. Pharmaceutical Society of New Zealand. Evolve Intern Programme. Pharmaceutical Society. https://www.psnz.org.nz/Category?Action=View&Category_id=91. Published 2019. Accessed 9/8/19, 2019.
27. Canadian Interprofessional Health Collaborative. *National Interprofessional Competency Framework*. University of British Columbia: Interprofessional Health Collaborative;2010.
28. Thorne S. *Interpretive Description: Qualitative Research for Applied Practice*. New York: Routledge; 2016.
29. Lattuca LR, Domagal-Goldman JM. Using Qualitative Methods to Assess Teaching Effectiveness. *New Direct Instit Res*. 2007;136:81-93
30. Olsen NR, Bradley P, Lomborg K, Nortvedt MW. Evidence based practice in clinical physiotherapy education: a qualitative interpretive description. *BMC Med Educ*. 2013;13(1):1-14.3648409
31. Anderson C. Presenting and evaluating qualitative research. *Am J Pharm Educ* 2010;74(8).21179252
32. Tavakol M, Sandars J. Quantitative and qualitative methods in medical education research: AMEE Guide No 90: Part I. *Med Teach*. 2014;36(9):746-756.24846122
33. Morse JM. Mixing qualitative methods. *Qual Heal Res*. 2009;19(1523-1524)
34. Hill ES, Morehead EK, Gurbutt D, Keeling J, Gordon M. 12 tips for delivering inter-professional education (IPE) in healthcare. *MedEdPublish*. 2019
35. Reeves S, Fletcher S, Barr H, et al. A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. *Med Teach*. 2016;38(7):656-668. 27146438

36. Conroy C. Stereotyping as a Major Barrier to Achievement of Interprofessional Education Competencies: A Narrative Literature Review. *Internet J Allied Health Sci Pract*. 2019;17(3):8
37. Thomas J, Kumar K, Chur-Hansen A. What does learning together mean for pharmacy and medicine students: is it really about from and with? *MedEdPublish*. 2018;7
38. Dabaghzadeh F, Zihayat B, Sarafzadeh F. Influence of pharmacy students on the attitudes of medical students following an interprofessional course. *Educ Health*. 2017;30(2):103- 107.[PMID 28928339]
39. Gilkerson CL, Hayes RM, Prunty L, et al. The Development of a Novel Interprofessional Education Curriculum for third year medical and pharmacy students. *Marshall J Med*. 2017;3(1):80
40. Copley JA, Allison HD, Hill AE, Moran MC, Tait JA, Day T. Making interprofessional education real: a university clinic model. *Aust Health Rev*. 2007;31(3):351-357.[PMID 17669056]
41. Wong PS, Chen YS, Saw PS. Influencing factors and processes of interprofessional professional education (IPE) implementation. *Med Teach*. 2019;1-7.31603016
42. Loversidge J, Demb A. Faculty perceptions of key factors in interprofessional education. *J Interprof Care*. 2015;29(4):298-304.[PMID 25495176]
43. Teodorczuk A, Khoo TK, Morrissey S, Rogers G. Developing interprofessional education: putting theory into practice. *Clin Teach*. 2016;13(1):7-12.[PMID 26817749]
44. Zhang C, Thompson S, Miller C. A review of simulation-based interprofessional education. *Clin Simul Nurs*. 2011;7(4):e117-e126
45. Alanazi AA, Nicholson N, Thomas S. The use of simulation training to improve knowledge, skills, and confidence among healthcare students: a systematic review. *Internet J Allied Health Sci Pract*. 2017;15(3):2.[PMID 26455855]
46. Dudding CC, Hulton L, Stewart AL. Simulated Patients, Real IPE Lessons: When you bring together students from three disciplines to treat virtual patients, interprofessional learning gets real. *The ASHA Lead*. 2016;21(11):52-59
47. Panzarella K, Rivers L, Bright B, et al. Using actors as simulated patients for interprofessional education. *Med Sci Educ*. 2013;23(3):438-448
48. Sundberg K, Reeves S, Josephson A, Nordquist J. Framing IPE. Exploring meanings of interprofessional education within an academic health professions institution. *J Interprof Care*. 2019;33(6):628-635.30871380
49. Shrader S, Hodgkins R, Laverentz D, et al. Interprofessional Education and Practice Guide No. 7: Development, implementation, and evaluation of a large-scale required interprofessional education foundational programme. *J Interprof Care*. 2016;30(5):615-619.[PMID 27341310]
50. Pudritz YM, Fischer MR, Eickhoff JC, Zorek JA. Validity and reliability of an adapted German version of the Student Perceptions of Physician-Pharmacist Interprofessional Clinical Education Instrument, version 2 (SPICE-2D). *Int J Pharm Pract*. 2019.[PMID 31373100]
51. O'Leary N, Salmon N, Clifford A, O'Donoghue M, Reeves S. 'Bumping along': a qualitative metasynthesis of challenges to interprofessional placements. *Med Educ*. 2019;53:903-915.[PMID 31074023]
52. Brownell SE, Kloser MJ, Fukami T, Shavelson RJ. Context matters: volunteer bias, small sample size, and the value of comparison groups in the assessment of research-based undergraduate introductory biology lab courses. *J Microbiol Biol Educ*. 2013;14(2):176.[PMID 24358380]

APPENDIX A

Table 2. Post-it note feedback according to learning outcomes (example quotations)

Roles & Responsibilities (n=45)	Teamwork, Collaborative Management & Collaboration (n=17)	Communication (n=6)	Patient centred approach (n=2)	Suggestions for IPE course improvement (n=23)
<p>Learning about another profession (n= 22)</p> <p><i>They know their medications really well</i> (medical student talks about pharmacy interns)</p> <p><i>They are good at differential diagnosis and figuring out what the presenting complaint is</i> (pharmacy intern talks about medical students)</p> <p><i>Can diagnose and treat</i> (medical student talks about pharmacy interns)</p> <p><i>Very good knowledge of health and communication</i> (pharmacy intern talks about medical students)</p> <p>What they do – each discipline’s skillset (n= 23)</p> <p><i>Pharmacists do a very thorough and in depth consultation</i> (medical student talks about pharmacy interns)</p> <p><i>(doctors) do a far more thorough background history eg social, family, lifestyle etc.</i> (pharmacy</p>	<p><i>Teamwork is very important and can result in an increase in productivity as different people have different skill sets</i> (medical student)</p> <p><i>Collaborate more with other medical professions. Patient care (can be) discussed together</i> (pharmacy intern)</p> <p><i>Each profession has complementary skill sets that can be enhanced to improve patient care</i> (medical student)</p> <p><i>Different roles - need both for comprehensive care</i> (medical student)</p> <p><i>That if we know each other’s skill sets we can communicate and enhance each other’s work and improve patient outcomes</i> (pharmacy intern)</p>	<p><i>Shows how important communication is between HCPs (Health Care Professionals) to ensure optimal care</i> (pharmacy intern)</p> <p><i>A place /chance for both professionals to meet /talk is important</i> (medical student)</p> <p><i>How much communication matters to ensure a cohesive answer around patient care</i> (medical student)</p> <p><i>Reinforcement of how crucial sharing of information is between professions</i> (pharmacy intern)</p> <p><i>How much communication matters to ensure a cohesive answer around patient care</i> (medical student)</p>	<p><i>Similar patient centred approach</i> (pharmacy intern)</p> <p><i>(together) we can play a big role in the patient’s health and well-being and better outcomes</i> (pharmacy intern)</p>	<p>Structure, content & process (n=12)</p> <p><i>More time to share what both sides do</i> (medical student)</p> <p><i>More time with discussion would of been great</i> (pharmacy intern)</p> <p><i>Have more conditions/other situations discussed</i> (medical student)</p> <p><i>Longer and more cases as more opportunity to learn</i> (pharmacy intern)</p> <p>Range of learners (n=7)</p> <p><i>More equal numbers of pharm and med</i> (medical student)</p> <p><i>A higher volume of participants and more range (of disciplines).</i> (pharmacy intern)</p> <p>Logistics (n= 2)</p> <p><i>More cake</i> (medical student)</p>

<p>intern talks about medical students)</p> <p><i>They are great in patient interactions</i> (medical student talks about pharmacy interns)</p> <p><i>Very broad range of skills sets, which would be extremely useful during a consultation</i> (pharmacy intern talks about medical students)</p>				
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