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To cite this article: Patricia A. Carney, David T. Bearden, Molly L. Osborne, Martha Driessnack, Curt C. Stilp, Judith Gedney Baggs, Jared P. Austin, Kristi Tønning & Jennifer Boyd (2018): Economic models for sustainable interprofessional education, Journal of Interprofessional Care, DOI: [10.1080/13561820.2018.1509846](https://doi.org/10.1080/13561820.2018.1509846)

To link to this article: <https://doi.org/10.1080/13561820.2018.1509846>



Published online: 15 Aug 2018.



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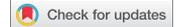


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ORIGINAL ARTICLE



## Economic models for sustainable interprofessional education

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### ABSTRACT

Limited information exists on funding models for interprofessional education (IPE) course delivery, even though potential savings from IPE could be gained in healthcare delivery efficiencies and patient safety. Unanticipated economic barriers to implementing an IPE curriculum across programs and schools in University settings can stymie or even end movement toward collaboration and sustainable culture change. Clarity among stakeholders, including institutional leadership, faculty, and students, is necessary to avoid confusion about IPE tuition costs and funds flow, given that IPE involves multiple schools and programs sharing space, time, faculty, and tuition dollars. In this paper, we consider three funding models for IPE: (a) Centralized (b) Blended, and (c) Decentralized. The strengths and challenges associated with each of these models are discussed. Beginning such a discussion will move us toward understanding the return on investment of IPE.

### ARTICLE HISTORY

Received 17 July 2017  
Revised 14 June 2018  
Accepted 2 August 2018

### KEYWORDS

Economic frameworks;  
health professions tuition;  
interprofessional education;  
sustainability

## Introduction

Rationales for integrating interprofessional education (IPE) within health professions training are compelling for many reasons including, but not limited to, improved patient safety and higher job satisfaction (Brock et al., 2013; Korner, Wirtz, Bengel, & Goritz, 2015). Challenges exist, however, such as those listed in the Interprofessional Education Collaborative (IPEC) Expert Panel Report (2011), which include: (a) institutional barriers, such as lack of support from top administrative leadership; (b) lack of institutional collaborators; (c) practical issues, such as scheduling; (d) teaching faculty development issues, stemming from the content and process of interprofessional learning; (e) assessment issues, including a lack of instruments to evaluate interprofessional competencies; and (f) lack of regulatory expectations (IPEC, 2011; Meyer, Evans, & Garr, 2013). Since these challenges were identified, many have already been addressed in healthcare education with varying degrees of success (Institute of Medicine, 2015, Gilbert, 2009).

One challenge not highlighted in the IPEC report is the development of an equitable funding model to ensure transparency and sustainability of IPE within and across educational programs and schools. By programs, we mean the programs of study within each school, such as adult health nurse practitioner versus nurse midwifery program. Unanticipated economic barriers to implementing an IPE curriculum across programs and schools can hinder or even end movement toward collaboration

and sustainable culture change. In addition, clarity among stakeholders, including faculty and students, is necessary to avoid confusion about IPE tuition costs and funds flow, given that IPE involves multiple schools and programs sharing space, time, faculty, and resources.

Our review of the literature revealed that limited information exists on financing frameworks for IPE course/program delivery, in contrast to the long-standing examination of the costs of health care. We found two editorials (Maloney et al., 2017; Walsh, Reeves, & Maloney, 2014), one commentary (Walsh, 2015) and one research article on this topic (Haines, Kent, & Keating, 2014), the latter of which compared the costs of an interprofessional clinical placement with usual clinical education. In fact, the lack of information on financing frameworks has been expressed in many papers (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013), even though there is clearly a need to examine cost and value in interprofessional education (Walsh et al., 2014).

Documentation of the total cost of IPE and potential savings generated by both educational and quality of care efficiencies are important but limited (Institute of Medicine, 2015). In an era of accountable care coupled with increased pressure to align health profession education with clinical practice toward producing graduates who are collaborative practice ready, the concept of team-based, patient-centred care has emerged as best practice (Inglehart, 2013; Nester, 2016).

To understand the potential return on investment in IPE, new ways of thinking about healthcare education, delivery, and outcome measures are needed. Patient safety, health system savings, and increased job satisfaction can be realized when providers work collaboratively at the top of their licensure, but the economic impact of interprofessional practice on improved outcomes is difficult to quantify. Thus, justifying IPE can be challenging, as the cost–benefit ratio is difficult to calculate. Multiple perspectives on value (e.g., to the patient population, to the learner, to the academic institution, to future employers) complicate this quantification. Consequently, a compelling reason to pursue financing models for IPE is that different models might begin to shed light on how to measure possible returns on investment in IPE.

In this paper, we describe three possible financing models to support IPE, as well as their respective strengths and challenges. We derived these examples from attempts our own institution is making to finance and flow funds to support IPE. Such an approach was needed because we found no specific basis in existing literature on how to fund a foundational IPE course that includes learners from many schools or programs within a university. We have narrowed our focus to classroom education, understanding that models for interprofessional training in clinical and community settings will be different. Determining an equitable model to sustain IPE within and across a University, while leveraging resources to support a robust IPE initiative, can be challenging. We hope that this discussion will facilitate continued efforts to address this complex issue.

## Background

Team-based collaborative care has been shown in many settings to improve patient outcomes, as well as the health of populations (Bosch et al., 2009; Chisholm-Burns et al., 2010; Schuetz, Mann, & Everett, 2010; Shortell et al., 2004). As a result, most health professions' accreditation standards now include requirements for interprofessional practice and education (Zorek & Raehl, 2013). A recent content analysis of IPE-related accreditation statements for programs in dentistry, medicine, nursing, occupational therapy, pharmacy, physical therapy, physician assistant, psychology, public health, and social work conducted in the United States found that 18 of 21 accreditation documents (85.7%) include specific IPE requirements (Zorek & Raehl, 2013).

Implementing IPE helps train health care providers to be successful at collaborating in clinical settings, and to promote positive changes in healthcare systems that lead to enhanced patient safety and quality (Ashton et al., 2012; Reeves et al., 2013). System-level changes that contribute to meeting the U.S. Institute of Healthcare Improvement's Triple Aim of improving patients' experience of care and the health of populations while lowering per capita costs (Berwick, Nolan, & Whittington, 2008) may well be enhanced by the integration of IPE (Brandt, Lutfiyya, King, & Chioreso, 2014; Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011)

As IPE and collaborative models of education and care delivery are replacing traditional models in both academic health centres (AHCs) and community clinical settings, new challenges have emerged while existing challenges remain

unresolved (Abu et al., 2012; Ashton et al., 2012; Bridges et al., 2011; West et al., 2016). A recent study of 16 medical schools found that all but two were undertaking interprofessional learning activities, with the most common collaboration occurring between medical and nursing schools (93%; West et al., 2016). Having a shared curriculum was the most prevalent educational format, which often included integrated modules, small group activities, and simulation-based learning and role-play (West et al., 2016). Thirteen schools (81.3%) reported course content focused primarily on the IPEC core competencies of interprofessional communication, teams and teamwork, roles and responsibilities, and values and ethics. Significant variability in approaches to IPE existed across schools (West et al., 2016), likely due to complexities of scheduling (Gilbert, 2009), diversity of stakeholders, and the complexities and uncertainties in facilitating pedagogical change (Lawlis, Anson, & Greenfield, 2014).

Many economic variables are associated with education across health professions. The individual and collective costs differ significantly across programs and schools. Federal, philanthropic, and state support for training programs are all subject to political forces and often volatile budgets. Using case-based, small-group, participatory learning—the most fitting method for classroom education of a team-based healthcare workforce—requires IPE-competent instructors/facilitators across programs (Gilbert, 2009). However, faculty and provider availability and salary support require consideration. IPE offerings also need to be evaluated on a programmatic level, beyond the more traditional focus on learner outcomes. When institutional budgets are constrained, all these factors are magnified, and academic programs may retreat into their silos to focus on their own curricula, either deeming IPE as dispensable and a resource drain, or shifting the burden to clinical placements and preceptors.

Here, we present three possible funding models and their application in a typical AHC with multiple schools and programs (e.g., dentistry, medicine, nursing, pharmacy, social work) and centralized oversight. Each model conceptualizes differences in how programs are funded (e.g., faculty full-time equivalent [FTE] allocation, course costs in administrative support, space and materials, funds flow).

## Challenges in financial models development

Common among AHCs is a foundational IPE course offered across programs to early learners (West et al., 2016). These large introductory courses are typically developed and funded centrally (e.g., through the Provost's Office or graduate studies). A central funding model, however, is often difficult to sustain. At most institutions, academic programs are of varying lengths and have different tuition structures and costs. Further, in most AHCs, the cost of the degree program exceeds tuition (Gil, Park, & Daniels, 2015) and this cost imbalance can differ across programs. As an example, medical graduates often have paid more tuition and consumed more resources than their nursing counterparts (Riley, Litsch, & Cook, 2016).

Issues of value and cost sit at the intersection of educational design and workforce planning and several recommendations aimed at guiding the agenda for cost and value

research in interprofessional education have been proposed (Maloney et al., 2017). These include, but are not limited to, developing expectations for measures of cost and value alongside educational studies, considering multiple perspectives of cost and value in decision-making, and changing the culture by encouraging academics to use economic reasoning to advocate for change and then demonstrate educational worth. These recommendations are timely and should be followed in evolving educational research.

Tuition inequality at most AHCs reflects the different credit load, training time, and type of student (graduate or undergraduate). Yet IPE should not perpetuate these differences. Although one could argue that there is a requirement that tuition equity exist across professions to create an authentic shared experience, determining tuition cost given these complexities is challenging. For example, in many schools of nursing and nutrition, a per-credit tuition model may be used to assess charges, while in dental and medical schools, a fixed tuition payment is often charged that includes all coursework. How tuition is assessed could be a deterrent to student participation, because some students would incur additional tuition charges for interprofessional courses, whether they are required or elective. Consequently, a subset of students and/or programs/schools may opt out, limiting their educational experience as well as the interprofessional student make-up in the courses. This is further complicated when AHCs have multiple campuses, offer joint degree programs with other institutions, or involve students from outside institutions taking some coursework at the AHC.

Ideally, IPE courses need a designated revenue stream to be sustainable. However, one of the key challenges for any financing model is possible differences in how individual programs are funded, even in the same university. Other challenges arise with required versus elective courses, faculty FTE, and administrative support. The bottom line is that an equitable, value-added financing model is required to ensure that all students and faculty experience benefits rather than disincentives to participating in IPE.

Establishing a common transcript designation for courses offered across programs is a possible initial step in integrating an IPE curriculum. For example, at Oregon Health & Science University, courses designated “IPE” must involve interprofessional learning while being taught by an interprofessional faculty team. University courses, designated “UNI,” are offered in a multi-professional manner, where learners from two or more professions learn side-by-side, but are not necessarily taught by an interprofessional team or are actively engaged in interprofessional activities. This upfront differentiation helps identify the distinct needs for the course (e.g., UNI or IPE).

### **Model assumptions for IPE course**

To visualize differences among the financing models presented here, we are assuming a hypothetical AHC established a large introductory IPE course that is offered for 1 credit hour and requires 10 small groups (20 students per group) of interprofessional students from at least five different schools (e.g., dentistry, medicine, nursing, pharmacy, and social work). The small group sessions involve three 4-hour blocks of classroom time over an

academic year and each is facilitated by two interprofessional faculty members. The facilitators guide students through discussions on IPE specifically related to patient safety (e.g., root cause analysis, medication reconciliation), communication, and team-based care (e.g., huddles) that apply across programs as students’ transition into clinical settings.

### **Financing model #1: centralized budget with fixed programmatic compensation**

Financing Model #1 is based on the following assumptions:

- For *Non-IPE courses*, students are charged tuition according to their respective programs of study (e.g., per credit hour or fixed for the degree).
- The IPE Foundational Course is required in all students’ programs of study.
- An IPE charge of \$700 per credit is assessed per student. This figure is based on an assessment we conducted where we estimated the median tuition per credit at all health professions programs and schools at Oregon Health & Science University.
- A universal faculty reimbursement rate per facilitator is established at \$2,500 per faculty member. This cost was estimated to offset the average cost of facilitator time paid to a clinical faculty member for 4 hours per session for three sessions or 12 hours total.
- Student assessment and program evaluation costs are centralized.
- Funds flow from student IPE tuition fees to the Provost Office (or other centralized office) with the faculty facilitator fees going to the respective school or program rather than to individual faculty. The central office uses residual tuition fees to cover course materials, course coordination, staff support, space, and assessment/evaluation activities, resulting in a budget neutral course for the institution.

Table 1 illustrates an example of what implementation of these assumptions for an introductory IPE course, here titled “Foundations,” might look like.

The Centralized Model has many advantages, such as simplifying cash flow, but may raise predictable challenges, as outlined in Table 2.

The Centralized Model represents an equitable, value-added model, which ensures that students and faculty see benefits rather than disincentives to participating in IPE. In this Model, the tuition flows from the students via IPE tuition fees to the Provost’s Office, and compensation flows from this centralized office back to respective programs to support faculty time. Benefits include ease of calculating educational costs, which are *per capita* for all students taking the course. The course is supported centrally, although individual schools also benefit; thus, faculty will likely be encouraged to be involved. This Model does encumber students in per-credit tuition fees that align with the costs of the course and that flow to the Provost’s office, which, may not be popular if schools perceive they are losing tuition funds. However, financial justification can be demonstrated when the course meets IPE accreditation requirements.

**Table 1.** Financing models #1–#3†.

Components	Students (100 total)	Faculty (10 total)	IPE Foundations	Assessment/ Evaluation	Total Costs
<b>Financing Model #1: Centralized</b>					
Cost per Unit	\$700/ Student	\$2,500/ Faculty Facilitator			
Costs		\$25,000	\$36,550	\$8,450	<b>\$70,000</b>
IPE Fee-based Revenue	\$70,000				<b>\$70,000</b>
Funds Flow	To Provost Office	To Individual Schools/ Programs from Provost Office	From Provost Office	From Provost Office	<b>Budget Neutral</b>
<b>Financing Model #2: Blended</b>					
Cost per Unit	\$250/ Student	\$0			
Costs			\$36,550	\$8,450	<b>\$45,000</b>
IPE Fee-based Revenue	\$25,000				<b>\$25,000</b>
Funds Flow	To Provost Office	Considered part of faculty facilitator teaching assignment*	From Provost Office	From Provost Office	<b>\$20,000</b> From Provost Office Centralized Budget
<b>Financing Model #3: Decentralized</b>					
Cost per Unit	Variable*	\$2,500/ faculty facilitator			
Costs		\$25,000	\$36,550	\$8,450	<b>\$70,000</b>
IPE Fee-based Revenue	\$0				
Funds Flow	To Individual Schools/Programs	<b>\$5,000</b> From Individual Schools/ Programs	<b>\$7,310</b> From Individual Schools/Programs	<b>\$1,690</b> From Individual Schools/Programs	<b>\$14,000</b> Total cost per school (5 schools)
Students (100 Total)	Faculty (10 Total)	IPE Foundations Course Description & Staffing		Assessment/Evaluation Description & Staffing	
20 Dental	2 Dental	• Offered in three 4-hour blocks per year		• Web-based assessment system	
20 Nursing	2 Nursing	• Course Materials/		• .05 FTE of designated evaluator	
20 Medicine	2 Medicine	• Course Coordinator at 0.1 FTE		• .05 FTE of Web designer	
20 Pharmacy	2 Pharmacy				
20 Social Work	2 Social Work				

\*Costs covered by respective programs

†Features Common to all Models

### Financing model # 2: blended

Financing Model #2 is based on the following assumptions:

- For *Non-IPE courses*, students are charged tuition according to their respective programs of study (e.g., per credit hour or fixed for the degree).
- The IPE Foundational Course is required in all students' programs of study.
- An IPE charge of \$250 per credit is assessed per student-based on an estimated median tuition per credit at all health professions schools.
- Faculty who teach the IPE course receive FTE directly from their programs and are developed to become faculty champions.
- Student assessment and program evaluation costs are included as a centralized feature in this Model.
- Funds flow from IPE fees to a central office with the faculty facilitator fees covered by their respective programs. The central office uses fees to cover course materials, administrative cost and assessment/evaluation activities. In the Blended Model, \$20,000 must be covered by the centralized budget to offset the reduced amount charged to students.

Table 1 illustrates what implementation of the Blended Financing Model (#2) for an introductory IPE course might look like, and Table 2 outlines its advantages and challenges.

In contrast to the Centralized Model, the Blended Model lowers inter-institutional cash flow and has a simpler administrative overhead. In addition, the Blended Model calls for programs to identify a cadre of IPE faculty facilitators/champions, perhaps a university-wide academy of interprofessional educators, who have IPE included in their FTE. This Model may support faculty participation and recognition of their efforts. It also provides an opportunity for faculty development in IPE that could positively affect the academic and clinical environment in the future.

An academy of teachers passionate about interprofessional education could develop a cross-programmatic community of dedicated educators to promote excellence in interprofessional education and to develop metrics for outcome assessment and evaluation. In addition, interprofessional academy faculty could serve as mentors to other faculty, enculturating collaborative practice and team-based care. A challenge of this Model, however, is that it shifts the faculty costs of IPE to individual programs (i.e., no centralized funds flow to back to the schools). To mitigate this potential loss, the number of faculty participating from one program could be capped and made proportional to the number of students in the program. For instance, using our model assumptions, a program with 20 students would require 2 faculty facilitators to represent an equal ratio. As with the Centralized Model, financial justification can be demonstrated if the course meets IPE accreditation requirements in the Blended Model as well.

**Table 2.** Strengths and challenges of financing models #1–#3.

<p><b>Model #1: Centralized - Strengths</b></p> <ul style="list-style-type: none"> <li>• Cost is consistent across programs</li> <li>• Costs easy to calculate</li> <li>• Generates revenue to support IPE centrally with support for faculty time going back to schools</li> <li>• Programs and schools likely to encourage faculty to participate in course</li> </ul> <p><b>Model #2: Blended - Strengths</b></p> <ul style="list-style-type: none"> <li>• Reduces IPE costs to students and spreads encumbrances across students, schools, and central office</li> <li>• Acknowledges schools' and centralized office's commitment to IPE</li> <li>• Programs encourage faculty to participate in IPE with FTE provided by the school toward developing faculty champions</li> <li>• Some program faculty members might experience disincentives to participate</li> </ul> <p><b>Model #3: Decentralized - Strengths</b></p> <ul style="list-style-type: none"> <li>• Tuition aligns with the programs/schools</li> <li>• Equitable across clinician faculty</li> <li>• Can be intentionally interprofessionally taught</li> <li>• Schools share a commitment to work together to design and administer the course</li> </ul>	<p><b>Model #1: Centralized - Challenges</b></p> <ul style="list-style-type: none"> <li>• Represents an added fee for all students, which may be a disincentive to participation.</li> <li>• Diverse programs being administered centrally</li> <li>• Educational leaders may be resistant to tuition revenue leaving their schools or programs.</li> <li>• Might create disincentives for participation from non-traditional educational programs (e.g., library, central services) whose faculty may be well qualified to participate in IPE</li> <li>• May under or overcompensate programs for participation, depending on faculty base salary, clinical productivity and volume of faculty participation</li> </ul> <p><b>Model #2: Blended - Challenges</b></p> <ul style="list-style-type: none"> <li>• Provost Office &amp; programs and schools must come up with funds to cost share.</li> <li>• Programs/schools may dictate participation rather than identify IPE champions.</li> <li>• Faculty from departments whose compensation is linked to clinical productivity and who are not provided FTE support would face a financial disincentive to participate</li> </ul> <p><b>Model #3: Decentralized - Challenges</b></p> <ul style="list-style-type: none"> <li>• Students' costs will vary</li> <li>• May require reorganization of existing faculty according to availability, which could be very challenging for small health professions schools/programs</li> <li>• More challenging to administer and no evidence centralized commitment, which may not meet accreditation requirements</li> <li>• Requires strong coordinated efforts across all schools</li> </ul>
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### Financing model #3: decentralized model

Financing Model #3 is based on the following assumptions:

- Tuition rates for students are charged according to their respective programs of study (e.g., per credit hour or fixed).
- IPE Foundations Course is required in all students' programs of study
- Students are not assessed any additional fees related to this IPE course.
- Faculty who teach the IPE course receive FTE directly from their programs.
- Student assessment and program evaluation costs are included as a de-centralized feature in this model.
- Funds flow from tuition fees go to each school with the faculty facilitator fees covered by their respective programs. Each school covers course materials, administrative cost and assessment/evaluation activities. Costs per school are variable based on tuition structure.

Table 1 Outlines the model components of the Decentralized Model and its strengths and challenges are outlined in Table 2. The Decentralized Model approach may bring interprofessional students together to learn about, from, and with each other; however, it risks resulting in parallel pockets of activity rather than being a truly integrated IPE curriculum since it lacks a central governing and coordinating entity. Strengths include tuition alignment across schools and it is equitable for clinician faculty, but it requires a strong shared commitment and buy-in across all schools. Economically, this Model may be the easiest to implement, but it may not meet future accreditation requirements because of its decentralization.

### Discussion

To the best of our knowledge, few financing models have been developed for effectively enhancing and sustaining broad efforts toward IPE implementation. Models that might be acceptable

across multiple programs and that are easy to administer are in the earliest stages. Our analysis of the three models presented here reveals strengths and challenges in each. It is difficult to favour one model over another, given the complex contextual features that we know exist across schools and programs that train multiple health professionals. It may be that universities transition across models based on the economic climate or preferences of schools or central leadership.

From the perspective of cost savings or IPE courses, identifying courses that are graduation requirements in more than one program could help with IPE planning. For example, biostatistics, health systems, or anatomy could provide economies of scale and capitalize on faculty expertise. Using biostatistics as an example, students from different programs could come together within a course to master content. To enhance the interprofessional nature of the course, faculty could “flip” the classroom and create small interprofessional groups to engage in problem-solving, thus moving beyond single profession approaches. With this model, the tuition remains within the participating programs. Additionally, participating programs could support a portion of FTE for faculty salary and divide workloads accordingly. If all schools within a University, such as schools of medicine, nursing, public health and social work shared in this enterprise, no school should feel disadvantaged by tuition funds flowing to other schools. An example of this approach is found the University of California, San Francisco (UCSF) in their Academy of Educators, which was originally generated to revitalize the teaching mission of the School of Medicine by helping all UCSF faculty members improve their teaching skills, enjoy more fruitful and rewarding teaching experiences, and further develop their careers in education (Academy of Medical Educators, n.d.).

Although additional faculty involvement may appear to create an increased workload, the integration of topic areas into one condensed course could actually eliminate the need for individual faculty to teach these courses within their programs or schools. It may also provide those faculty

members with a teaching opportunity that aligns with their program of research and/or clinical expertise. Successful implementation of an IPE course that involves robust, small-group facilitation will likely require additional faculty involvement. This involvement will only be possible in AHCs whose leaders actively foster and support IPE. In our hypothetical examples, we used a standard ratio of about 15 students with 2 faculty members per small group, which is similar to what we use at Oregon Health & Science University (OHSU). However, our course is much larger with 700 students from 7 to 10 programs; thus, we have about 47 groups resulting in the need for 94 facilitators. Typically, we over recruit to get about 100 facilitators per class session. OHSU has over 2,500 faculty members, so 110 is a small percentage for the purpose of IPE.

Another approach to an integrated model is to purposefully leverage resources and teaching faculty members expertise by identifying exemplary courses within programs. If students in multiple schools or programs need a basic course in pharmacology or more advanced content in pharmacogenetics, for example, that course could emerge as a course that is “owned” and taught by faculty in the School of Pharmacy. Similarly, communication, health promotion, and qualitative research might be offered through a School of Nursing; anatomy, genetics, narrative medicine, and informatics could be offered through a School of Medicine. This model requires some upfront synchronization of calendars and schedules, but can, through economies of scale, enhance efficiency and learning outcomes while providing opportunities for IPE. Thinking in terms of “shared curriculum” might simultaneously foster and model the collaboration we ultimately strive for in patient-centred, team-based care.

IPE must extend beyond a foundational, introductory course. It must be integrated into both classrooms and clinical rotations, the latter of which has many challenges. Haines et al. (2014) conducted an economic evaluation of collaborative education during clinical placements at a student-run clinic. These investigators found that, in Australia, the per day student clinic cost was \$289, which saved the state government \$49 and the Commonwealth Government \$66 per day. At least some of these cost savings can be attributable to identifying gaps or redundancies that could be addressed through inter-professional collaboration.

Walsh (2015), points out that it seems appealing to deliver interprofessional content to different groups of learners as a means of cost savings, but it is unclear that this will translate to team-based care in practice. Progress on this could be made by creating interprofessional rotations in clinical settings where team-based, collaborative practice is being nurtured or already adopted. Collaboration might be evidenced through uniform clinical orientation, team huddles and debriefs, and faculty preceptors who have received additional training and development in IPE. For this to be fully implemented, health systems need to allocate adequate time for healthcare practitioners to adequately engage in IPE-related training and practices, not only to transform their practice but also to precept students from different professions who are primed to experience IPE at the point-of-care (Kent et al., 2018). Currently, our own institution is grappling with these

issues. Thus, the immediate need to initiate a dialogue to advance assessment of the costs of IPE and identification of next steps towards measuring return on investment. As IPE becomes the new norm and serves as the basis for a collaborative culture that drives the Triple Aim, adoptable and adaptable financing models are necessary.

These principles are underscored in the Prato Statement (Maloney et al., 2017), which emphasizes that the essential goal of economic analyses in health professions and interprofessional education is to develop an evidence base for education that delivers the most value for a given cost and ensures that education is accessible, sustainable and able to meet the future healthcare needs of patients and populations. This statement, which was developed by founding members of the Society for Cost and Value in Health Professions Education (Maloney et al., 2017) identified a set of recommendations designed to guide cost and value research in education. Recommendations relevant to this paper include developing resources needed to promote basic economic literacy in health professions education research, considering multiple perspectives of cost and value in decision-making, developing the expectation for measures of cost and value as part of educational studies, and encouraging the use of economic reasoning to advocate for change that demonstrates educational worth. Undertaking these recommendations is where the challenges will exist.

This discussion leads us to ask who, ultimately, will be the recipients of the value added of IPE. In our view, it is the public. As population health outcomes are a priority worldwide, it will only be in working together that outcomes can be improved. This view suggests that the public should be included among the investors in IPE and even health professions education. The feasibility of such an approach globally may vary, but this is unlikely to happen in the U.S. Rather, it may be the healthcare systems, which are the recipients of additional value in reduced costs of care, are the key investors in IPE. In the end, collaboration within and across healthcare education and practice must be aligned, especially as the U.S. undergoes its own crisis in equitable access to safe and high-quality healthcare (Woolf & Braveman, 2011).

There are a number of directions to go from here. Our next step will be to survey AHCs to identify what financing models are currently in place. We plan to work with the National Center for Interprofessional Practice and Education to explore how our colleagues are overcoming challenges, and how we can work together to develop sustainable financing models for IPE that improve patient outcomes and population health. We will be sure to include an assessment of implementing recommendations from the Prato Statement, which will inform the U.S. on progress made on vital areas of cost and value. Others may opt to examine financing models through different lenses, such as behavioural economics (Baddeley, 2017) or prospect theory (Kahneman & Tversky, 1979). Whichever way we approach the next steps of this complex issue, all will benefit from continued open discussion and data sharing.

In conclusion, we present three financing frameworks and their strengths and challenges regarding how academic health centres could sustain a foundational IPE course. It is likely that a single financing framework will not work in all educational settings and transitions or combinations across all three may

occur. By following Prato Statement recommendations, the likelihood of building a strong evidence base for the return on investment of IPE and collaborative practice is possible, though there is much work to be done to realize those recommendations.

## Conflicts of interest

The authors declare no conflicts of interest related to this work.

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