

# IMPLEMENTATION OF INTERPROFESSIONAL EDUCATION PROGRAM (IPE): SCOPING REVIEW

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## ABSTRACT

The current landscape of healthcare service worldwide is determined by new emerging infectious diseases, the epidemiological transition from communicable disease into non-communicable disease, and climate, environmental, behavior, and demographic changes. Healthcare providers are supposed to work together to overcome it. The capability of team working skills and collaboration has become an essential pillar of healthcare service improvement. The author uses Preferred reporting Items for Systematic reviews and Meta-analyses (PRISMA) to conduct this scoping review. Initial searching at PubMed, Elsevier, and Google Scholar have identified 1358 articles. One thousand three hundred seven articles were excluded because of duplication, the discrepancy of articles title and content, and using other than English or Bahasa Indonesia. Interprofessional education programs can be implemented at various stages of medical education, both academic and clinical. Approaching strategies used varied in learning activities, duration of implementation, and topics presented.

**Keywords:** Implementation of Interprofessional Education Program, Scoping Review

## I. INTRODUCTION

The current landscape of healthcare service worldwide is determined by new emerging infectious diseases, the epidemiological transition from communicable disease into non-communicable disease, and climate, environmental, behavior, and demographic changes. Healthcare providers are supposed to work together to overcome it. The capability of team working skills and collaboration has become an essential pillar of healthcare service improvement.<sup>1</sup>

Interprofessional collaborative practice (IPCP) occurs when multiple health workers from different professional backgrounds provide a comprehensive service by working with patients, their families, carers, and the community to deliver the highest quality of care across settings.<sup>2</sup> Collaborative practice can improve access and coordination of healthcare service, effective use of resources, health outcome of chronic disease patients, patient care and safety, and communicable disease control.



Collaborative practice can decrease total patient complications, length of hospital stay, tension and conflict among caregivers, staff turnover, hospital admissions, clinical error rates, and mortality rates. In community mental health, collaborative practice can increase patient and carer satisfaction, promote greater acceptance of treatment, reduce the duration of treatment, reduce the cost of care, reduce the incidence of suicide, increase treatment for psychiatric disorders, and reduce outpatient visits. <sup>3,4,5,6</sup>

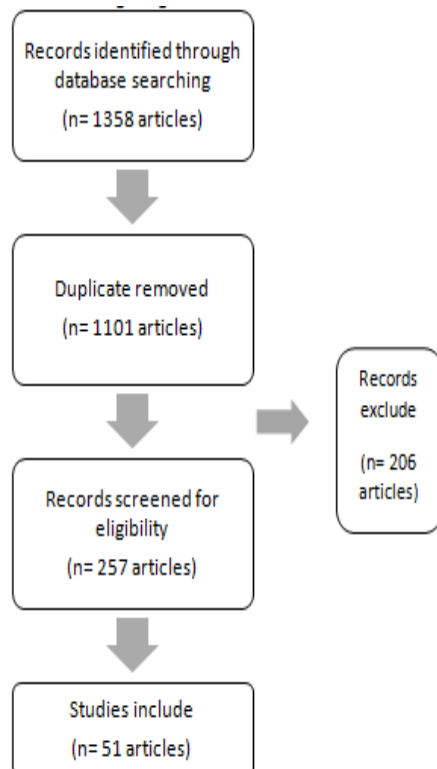
## II. METHOD

The author uses Preferred reporting Items for Systematic reviews and Meta-analyses (PRISMA) to conduct this scoping review. Initial searching at PubMed, Elsevier, and Google Scholar have identified 1358

Interprofessional education (IPE) is a strategic approach that can prepare future collaborative teamwork. Diane et al. stated that students trained using the IPE approach would tend to become members of interprofessional teams who show respect and a more positive attitude towards other professions and can work together better to improve patient outcomes.<sup>3</sup>

This article aims to provide an overview of the implementation of interprofessional education programs that have been implemented in various parts of the world.

articles. One thousand three hundred seven articles were excluded because of duplication, the discrepancy of articles title and content, and using English or Bahasa Indonesia.





### III. RESULT

Based on analysis of various forms of IPE programs implemented in various parts of the world, it can be concluded that the characteristics of interprofessional education programs are as follows: (attachment)

#### 1. Purpose

In general, interprofessional education programs aim to improve communication, understanding, and collaboration between students of different health professions. This is aimed at preparing future interprofessional collaboration teams. Interprofessional education programs can also be training programs that aim to prepare trainers for IPE (training of trainers).

#### 2. Learning topics

The topics presented are varied, ranging from the introduction of education and interprofessional collaboration, patient safety, clinical context (e.g., collaborative chronic patient care), training of trainers, and public health service systems.

#### 3. Learning activities

Learning activities used in interprofessional education programs are varied and adapted to the context of interprofessional education learning, such as didactic, case-based discussions, simulations, role play, community projects.

#### 4. Duration

The length of time for the implementation of educational programs varies, ranging from the shortest 3 hours to 3 years. The program implementation duration depends on the program's scale (sessions or courses), the scope, and the learning activities used. In general, IPE programs that involve direct

interaction with patients or the community are held within two weeks or more.

#### 5. Evaluation

Evaluation can be carried out on the program implementation process or program achievements. Assessment of program achievement can be in evaluating student perceptions, the readiness of students and or teaching staff, and increasing collaboration competencies. The evaluation method can be done qualitatively or quantitatively using appropriate instruments.

### IV. CONCLUSION

Interprofessional education programs can be implemented at various stages of medical education, both academic and clinical. Approaching strategies used varied in learning activities, duration of implementation, and topics presented.

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**Table Recapitulation of IPE program implementation**

No	Title	Year	Country	Setting	Approach	Duration	Program	Result
1	Renewal through team development: experiencing an emerging program design in interprofessional education for healthcare professional From: Colla J, et al. Renewal through team development: experiencing an emerging program design in interprofessional education for a healthcare professional. The Journal of Health Administration Education. 2011	2011	America	Healthcare professional	Project-based	Eight months		The IPE program was generally well perceived by the trainees, although there were some special notes for further improvement
2	Partnering in interprofessional education to design simulation program to promote collaboration and patient safety From: Norsen L & Spillane LL. Partnering in interprofessional education to design simulation programs to promote collaboration and patient safety. Creative Nursing. 2012	2012	USA	Postgraduate, clinic	Team-based simulation	40 minutes for each simulation case simulation (25 minutes for debriefing )		IPE is an excellent event to share knowledge between professionals with different backgrounds



3	Instructional design and assessment; An interprofessional rural health education program From: Suzanne R et al. Instructional design and assessment; An interprofessional rural health education program. American Journal of Pharmaceutical Education. 2012	2012	America	Undergraduate	Lecture & assignment, workplace	One year	The rural health professions program is one form of the IPE approach to preparing health practitioners to work in rural communities
4	Training and action for patient safety: Embedding interprofessional education for patient safety within an improvement methodology From: Slater BL et al. training and action for patient safety: Embedding interprofessional education within an improvement methodology. Journal of Continuing Education in Health Profession. 2012	2012	Europe	Health professional	Workplace & team-based	20 weeks	8 of the 11 teams involved showed improvement in patient safety
5	Turf, team, and town: a geriatric interprofessional education program MacRae N. Turf, team, and town: a geriatric interprofessional education program. 2012	2012	America	Undergraduate	Team-based learning, interaction with the patient	One semester	Participants and institutions get a clearer picture of the roles and responsibilities of other professions, the contribution of the profession to the elderly and the perception of the elderly, and their contribution to the community



6	Global health education programming as a model for inter-institutional collaboration in interprofessional health education From: Peluso MJ et al. Global health education programming as a model for inter-institutional collaboration in interprofessional health education. Journal of Interprofessional Care. 2014.	2013	USA	Undergraduate	Discussion-based	Four weeks	IPE within Global Health is an important interprofessional collaboration learning opportunity. This program is recognized to prepare future interprofessional collaboration teams and is beneficial for teaching staff and students involved in its design and implementation.
7	Learning by doing: observing an interprofessional process as an interprofessional team From: Brenna CW et al. Learning by doing: observing an interprofessional process as an interprofessional team. Journal of Interprofessional Care. 2014	2013	USA	Health professional	Apprentice	One year	Participants provide positive and negative feedback on team functions, interprofessional understanding, microsystem knowledge, and the challenges of the division of responsibilities.
8	Japanese students' perception of their learning from an interprofessional education program; a qualitative study From: Maeno T, et.al. Japanese students' perception of their learning from an interprofessional education program; a qualitative study. International Journal of Medical Education. 2013;4:9-17	2013	Asia	Undergraduate	Problem-based learning	One week	The IPE program is believed to help increase students' understanding of interprofessional collaboration. Although the Japanese health care system is different from the western health care system, it is believed that there is no significant difference between the two.



9	A pilot implementation of interprofessional education in a community-academic partnership in the Philippines From: Opina-Tan LA. A pilot implementation of interprofessional education in a community-academic partnership in the Philippines. <i>Education for Health</i> . 2013;26(3):164-171	2013	Asia	Undergraduate	Community-based	6-8 weeks	Students get a good experience in learning collaboration, appreciation of roles & responsibilities, holistic care, community service, and unique learning experiences.
10	"Just working in a team was a great experience..."- Students' perspectives on the learning experiences of an interprofessional education program. From Mellor R, et al. "Just working in a team was a great experience..."- Students' perspectives on the learning experiences of an interprofessional education program. <i>Journal of Interprofessional Care</i> . 2013;27:292-297	2013	Australia	Student	Roleplay, simulation	Four weeks	Students stated that by studying and understanding the role and contribution of each health profession, they could increase students' perspectives on health services and increase their sense of self-worth and professional self-esteem.
11	Faculty development in interprofessional education: designing and implementing a successful program From: Virant-Young D et al. Faculty development in interprofessional education: designing and implementing a successful program. <i>International Association of Medical Science Educators</i> .	2014	America	Undergraduate, clinic	Didactic, group discussion	Nine months	Students show a positive perception of IPE



2014; 24:410-4017

<b>1</b>	Sharing a piece of the PIIE: Program of	2014	America	Undergraduate	Webinar	One day	Students show a positive response to the webinar, especially to the technology and case-based approach used and the benefits derived from disease reviews and interprofessional collaboration.
<b>2</b>	International Interprofessional Education From: Hannigan NS et al. I was Sharing a PIIE: Program of International Interprofessional Education. Educational Innovation. 2014.						
<b>1</b>	Design and implementation of an	2015	Europe	Undergraduate	Classroom-based, simulation	One year	
<b>3</b>	interprofessional education course for undergraduate students at the University of Applied Sciences Western Switzerland: the Geneva experience From: Meche P et al. design and implementation of an interprofessional education course for undergraduate students at the University of Applied Sciences Western Switzerland: the Geneva experience. Journal of Interprofessional Care. 2015: 29 (3): 279-280						
<b>1</b>	Interprofessional education in practice: evaluation of a work-integrated aged care program	2015	Australia	Undergraduate, workplace	Workplace-based	Three weeks	There is an increase in the ability of students to learn and work in interprofessional teams and geriatric services
<b>4</b>	From Lawlis T, et al. Interprofessional education in practice: evaluation of a work-integrated aged care program. Nurse						



Education in Practice. 2016; 16: 161-166

<b>15</b>	Participant evaluation of an education module on interprofessional collaboration for students in healthcare studies From: Tsakitzidis G et al. Participant evaluation of an education module on interprofessional collaboration for students in healthcare studies. BMC Medical Education. 2015; 15:188	2015	Europe	Undergraduate	Classroom-based, discussion, reflection	Five days	Generally, it can be said that the module's objectives are achieved. More than 80% of module participants believe that Interprofessional collaboration in Health Care increases knowledge and understanding of the profession and problem-solving. However, only less than 60% of the participants showed a change in attitude towards other professions after joining the program.
<b>16</b>	The health mentors program: three years experience with longitudinal, patient-centered interprofessional education From: Arenson C, et.al. The health mentors program: three years experience with longitudinal, patient-centered interprofessional education. Journal of Interprofessional Care. 2015; 29 (2):138-143	2015	USA	Undergraduate	Clinic, team-based	Six months	Program participants show a positive attitude towards IPE and last more than two years
<b>1</b>	A novel pain interprofessional education	2015	Americ	Health	Workpla	Five	The Pain IPE program is a successful



7	strategy for trainees: Assessing the impact on interprofessional competencies and pediatric pain knowledge From: Hunter JP, et.al. A novel pain interprofessional education strategy for trainees: Assessing the impact on interprofessional competencies and pediatric pain knowledge. Pain Res Manag. 2015; 20(1): e12-e20		a	profession al	ce-based	weeks	collaborative learning model in clinical settings to achieve interprofessional competence.
18	The positive impact of interprofessional education: a controlled trial to evaluate a program for health professional students. From: Darlow B, et.al. The positive impact of interprofessional education: a controlled trial to evaluate a program for health professional students. BMC Medical Education. 2015; 15-98	2015	Austral ia	Undergrad uate	Didactic, discussio n, interactio n with the patient	11 hours	This 11-hours IPE program can improve attitudes towards interprofessional teams and interprofessional learning.
19	What is in it for me? Perspectives from community participants in an interprofessional service-learning program From: Castaneda G et al. What is in it for me? Perspectives from community participants in an interprofessional service-learning program. Journal of Interprofessional Education & Practice. 2017; 6: 15-21	2016	Americ a	Undergrad uate	Commun ity-based	One year	All participants reported positive results regarding wellness thanks to the social support construct (informational support, emotional support, friendship, and concrete support). Participants with low socioeconomic status need more excellent information support and access to health. In contrast, participants with



high socioeconomic status are more likely to build social relationships with students.

20	<p>Patient safety competence for final-year health professional students: Perceptions of effectiveness of an interprofessional education course</p> <p>From: Hwang J et al. Patient safety competence for final-year health professional students: Perceptions of effectiveness of an interprofessional education course. <i>Journal of Interprofessional Care</i>. 2016; 30(6): 732-738</p>	2016	Asia	Undergraduate	Didactic, case-based scenario	One day	IPE safety training increases the perception of patient safety competency
21	<p>Simulation-based interprofessional education to improve attitudes towards collaborative practice: a prospective comparative pilot study in Chinese medical center</p> <p>From: Yang LY, et al. Simulation-based interprofessional education to improve attitudes towards collaborative practice: a prospective comparative pilot study in Chinese medical center. <i>BMJ Open</i>. 2017;7: e015105</p>	2016	Asian	Clinic	Simulation-based	7 hours	IPE simulation program improves IPC attitude, self-reflection, workplace transfer, and practice of the learned skills of participants (pharmacies, doctors, and nurses).



2	Interprofessional education increases knowledge, promotes team building, and changes practice in the care of Parkinson's disease. From: Cohen EV, et al. Interprofessional education increases knowledge, promotes team building, and changes practice in the care of Parkinson's disease. <i>Parkinsonism and Related Disorders</i> . 2016; 22:21-27	2016	America	The clinic, health professional	Team-based care training	1 -26 days	The National Parkinson Foundation-Allied Team training for Parkinson (NPF-ATTP) program has been shown to positively impact increasing knowledge of Parkinson's disease, team strategies, roles & responsibilities of other professions, teamwork, and service delivery.
2 3	Interprofessional education in an enrichment program for prospective health sciences students From: Dumke EK et al. Interprofessional education in an enrichment program for prospective health sciences students. <i>Journal of Interprofessional Care</i> . 2016; 30(2): 245-247	2016	America	Undergraduate	Case-based study, hands-on practice	Six weeks	The training participants showed a better attitude towards the interprofessional team in the post-assessment session
2 4	What makes an interprofessional education program meaningful to students? Finding from focus group interviews with students based in New Zealand. From: Darlow B et al. What makes an interprofessional education program meaningful to students? Finding from focus group interviews with students based in New Zealand. <i>Journal of</i>	2016	Australia	Undergraduate	Case-based discussion	11 hours	Interaction with other professionals and patients is the main focus of student attention.



	Interprofessional Care. 2016; 30(3): 355-361						
25	<p>A comparison of interprofessional education programs in preparing prospective teachers and speech and language pathologists for collaborative language-literacy instruction</p> <p>From: Wilson L, et.al. A comparison of interprofessional education programs in preparing prospective teachers and speech and language pathologists for collaborative language-literacy instruction. 2016.</p>	2016	Australia	undergraduate	Case-based instructional	3 hours	A comparison of interprofessional education programs in preparing prospective teachers and speech and language pathologists for collaborative language-literacy instruction
26	<p>Interprofessional education: graduate student's perspectives</p> <p>From: LeFlore J et al. Interprofessional education: graduate student's perspectives. Journal of research in Interprofessional Practice and Education. 2017;7 (1).</p>	2017	USA	Postgraduate	Didactic, simulated case-based	Two semesters	
27	<p>An interprofessional education pilot study for nursing and speech-language pathology students</p> <p>From: Akhtar E et al. An interprofessional education pilot study for nursing and speech-language pathology students. Iranian Journal of Nursing and Midwifery</p>	2017	USA	Undergraduate	Didactic	2 hours	Interprofessional learning is proven to be effective in increasing interprofessional collaboration in dealing with dysphagia patients



Research. 2017

28	The effect of interprofessional team-based learning among nursing students: a quasi-experimental study From: Wong AKC, et.al. The effect of interprofessional team-based learning among nursing students: a quasi-experimental study. Nurse Education Today. 2017; 53:	2017	Asia	Undergraduate	Course, team-based learning	Half-day	Participants demonstrated increased knowledge, IPE attitudes, team learning, and group effectiveness.
29	A lesson learned: Implementation of interprofessional education in disaster management at Faculty of Medicine Universitas Gadjah Mada, Indonesia. From: Prihatiningsih TS, et.al. A lesson learned: Implementation of interprofessional education in disaster management at Faculty of Medicine Universitas Gadjah Mada, Indonesia. Journal of Interprofessional Education and Practice. 2017; 9:121-125	2017	Asia	Undergraduate	Lecture, case study, discussion, laboratory skills	Three weeks	The disaster emergency management module delivered through the IPE approach has been proven to effectively improve knowledge, communication skills, and collaboration among students
30	Patient safety interprofessional training for medical, nursing, & pharmacy students From: Gill AC et al. Learnings and challenges to deploying an	2017	America	Undergraduate	Case-based discussion	1,5 hours	IPE workshops in the context of patient safety are effective in increasing awareness and knowledge of the roles and responsibilities of



	interprofessional & independent medical education program to a new audience. The Journal of Teaching and Learning Resources. 2017;13:10595						other professions and the possibility of potential communication errors.
3 1	Learnings and challenges to deploying an interprofessional & independent medical education program to a new audience From: Driel MLV et al. Learnings and challenges to deploying an interprofessional & independent medical education program to a new audience. Journal of European CME. 2017.	2017	Australia	Health profession	Workshop, case-based discussion, workplace	6 hours	Overall the response to the IPE program has been positive. The program's objectives are achieved, and the learning needs of program participants are met. Students feel an increase in knowledge and confidence, especially in diagnosing and identifying patients at risk of suffering from Medication Overuse Headache (MOH).
3 2	Evaluation of a unique interprofessional education program involving medical and pharmacy students From: Nagge JJ. Evaluation of a unique interprofessional education program involving medical and pharmacy students. American Journal of Pharmaceutical Education. 2017.	2017	America	Undergraduate	Case-based discussion	Half days	The Health-care Interprofessional Education Day (HIPED) program is a practical approach to providing IPE experiences (collaboration, roles & responsibilities, and collaborative practice/ family-centered approach categories)
3 3	Implementing and evaluating a community-based, inter-institutional,	2017	America	Undergraduate	Community-based	Six months	Students feel comfortable and meaningful when working with other



interprofessional education pilot program  
From: Stubbs C et al. Implementing and evaluation a community-based, inter-institutional, interprofessional education pilot program. Journal of Interprofessional Care. 2017; 31(5): 652-655

parties. The advantage of this program is that it can increase students' understanding of social determinants that affect health status.

<b>3</b>	An interprofessional education program's impact on attitudes toward and desire to work with older adult From: McManus K et al. An interprofessional education program's impact on attitudes toward and desire to work with the older adult. Education for Health. 2017.	2017	America	Undergraduate	Community-based	One semester	Exposure with elderly increases interest in working with them
<b>3</b> <b>5</b>	How to prepare interprofessional teams in two weeks: an innovative education program nested in telehealth From: Haney TS et al. How to prepare interprofessional teams in two weeks: an innovative education program nested in telehealth. International Journal of Nursing Educational Scholarship. 2018	2018	USA	Undergraduate	Project-based	Two weeks	IPE combined with telehealth enhances interprofessional knowledge and skills
<b>3</b> <b>6</b>	Applying interprofessional team-based learning in patient safety: a pilot evaluation study From: Lochner L et al. Applying	2018	Europe	Undergraduate	Team-based learning	Three days	Students can well receive Team-based learning. TBL IPE is an excellent pedagogical learning method to achieve learning



	interprofessional team-based learning in patient safety: a pilot evaluation study. BMC Medical Education. 2018; 18:48						objectives in the context of patient safety.
37	Implementing an interprofessional education program in Lebanon: overcoming challenges From: Farra A et al. Implementing an interprofessional education program in Lebanon: overcoming challenges. J. 2018;24(9)	2018	Asia	Undergraduate	Workshop, didactic	5,5 days	The challenges of designing and implementing an IPE program are similar to other programs (curriculum, leadership, resources, stereotypes, student characteristics, IPE concepts, learning, enthusiasm, professional jargon, and accreditation level).
38	Evaluation of a pilot interprofessional education program for eating disorder training in mental health services From: McDevitt S and Vassi P. Evaluation of a pilot interprofessional education program for eating disorder training in mental health services. Irish Journal of Psychological Medicine. 2018;35:289-299	2018	Europe	Health professionals	Case-based learning	Four months	IPE with a case-based learning approach is an effective learning method and can be accepted by students. This program also positively impacts knowledge, clinical behavior, and the services provided.
39	Development and implementation of an interprofessional education certificate program in a community-based osteopathic medical school From: Herrera ELW et al. Development and implementation of an interprofessional	2018	America	Undergraduate	Community-based	Three years	In the preliminary study, it was found that there was a more positive attitude change towards interprofessionalism.



education certificate program in a community-based osteopathic medical school. *Journal of Interprofessional Education and Practice*. 2019; 14:30-38

40	Community-based health-professions interprofessional education: A collaborative and sustainable model From: Kristina TN et al. Community-based health-professions interprofessional education: A collaborative and sustainable model. <i>Jurnal Pendidikan Indonesia</i> . 2018; 7(1): 36-43	2018	Asia	Undergraduate	Community-based	One semester	The community-based IPE model is recommended for students who already have sufficient competence to be applied in the community (semester 6). Further study and validation of the model still need to be done after implementation.
41	Interprofessional simulation in a student community clinic: insights from an educational framework and contact theory From: Waller S and Nestel D. Interprofessional simulation in a student community clinic: insights from an educational framework and contact theory. <i>Advances in Simulation</i> . 2019; 4(Suppl1): 21	2019	Australia	Undergraduate	Simulation-based	Three days	SCOPE (Simulated Client Interprofessional Education) program improves students' communication skills and awareness of the importance of interprofessional collaboration
42	Integrating public health students into interprofessional education From: Averill MM et al. Integrating public health students into interprofessional	2019	USA	Postgraduate	Classroom-based, group discussion	2x80 minutes	MPH students showed interest in IPE after participating in the ALS (Interprofessional Active learning Series) and improved



	education. Journal of Interprofessional Care. 2020; 34(3): 427-430				n		interprofessional competence and response to disaster preparedness.
4 3	A structured approach to intentional interprofessional experiential education at a non-academic community hospital From: Nwaesei AS, et.al. A structured approach to intentional interprofessional experiential education at a non-academic community hospital. American Journal of Pharmaceutical Education. 2019	2019	America	Undergraduate, clinic	Daily round	Eight months	A multimodal structured approach has a positive effect on students' perceptions of IPE
4 4	IPE-COM: a pilot study on interprofessional learning design for medical and midwifery students Randi ABT et al. IPE-COM: a pilot study on interprofessional learning design for medical and midwifery students. Journal of Multidisciplinary Healthcare. 2019; 12:767-775	2019	Asia	Undergraduate	Community-based	One month	The implementation of community-based IPE has proven to increase collaborative competencies, especially teamwork and collaboration.
4 5	Innovations in medical education: a mixed-methods evaluation of medical residents' attitude toward interprofessional learning and stereotypes following sonography student-led point-of-care ultrasound training	2019	America	Undergraduate	Workshop, simulation training	One day	IPE POCUS (Point Of Care Ultrasound) training can improve residents' perception of IPE, respect for sonographers, and future IPCP motivation



From: Smith CJ, et al. Innovations in medical education: a mixed-methods evaluation of medical residents' attitude toward interprofessional learning and stereotypes following sonography student-led point-of-care ultrasound training. JGIM. 2019; 35(10): 3081-6

46	Integrating a large-scale interprofessional student program to address patients with complex needs From: Gibbons G et al. Integrating a large-scale interprofessional student program to address patients with complex needs. Journal of Interprofessional Education and Practice. 2019; 16.	2019	America	Undergraduate	Workshop, case-based discussion, workplace	Six months	Participants of the Interprofessional Student Hotspotting Learning Collaborative (SLC) program gain experience working in interprofessional teams in dealing with patients with complex conditions, identifying social determinants that affect health, providing recommendations to improve health conditions, and evaluating the financial and personal impact of being patient-centered interventions.
47	Effectiveness of an interprofessional education program using team-based learning for medical students: a randomized controlled trial From: Hamada S et al. Effectiveness of an interprofessional education program using	2019	Asia	Undergraduate	Team-based learning	½ day	Multiprofessional group learning can increase students' readiness for types that use a team-based learning approach.



team-based learning for medical students: a randomized controlled trial. *Journal of General and Family Medicine*. 2019.

48	Effectiveness of simulation-based interprofessional education for the medical and nursing student in South Korea: a pre-post survey From: Yu J et al. effectiveness of simulation-based interprofessional education for the medical and nursing student in South Korea: a pre-post survey. <i>BMC Medical Education</i> . 2020;20: 476	2020	Asia	undergraduate	simulation	Three days	IPE simulation is proven to increase students' awareness of IPE learning and self-competence of IPE
49	Facilitating interprofessional education in a daring environment during the COVID-19 pandemic: a mixed-method study From: Singh J and Mattheess. Facilitating interprofessional education in a daring environment during the COVID-19 pandemic: a mixed-method study. <i>Health care</i> . 2021	2021	USA	Undergraduate	Didactic, case-based discussion		IPE learning increases students' awareness of other professions' roles and responsibilities, improve communication and collaboration skills, and can improve services for COVID-19 patients.
50	Students' perception of a hybrid interprofessional education course in a clinical diabetes setting: a qualitative study From: Suematsu M, et al. Students' perception of a hybrid interprofessional	2021	Asia	Undergraduate	Workshop, daring, workplace-based	One month	The training increases students' perception of recognition of the patient's perspective, discharge roles, and the functions and roles of the profession itself.



	education course in a clinical diabetes setting: a qualitative study. International Journal of Medical Education. 2021;12:195-204					
51	Building better patient outcomes through interprofessional collaboration: a standardized patient experience with pharmacy, nursing, and physician assistant students From: Slater N, et.al. Building better patient outcomes through interprofessional collaboration: a standardized patient experience with pharmacy, nursing, and physician assistant students. Journal of Interprofessional Education and Practice. 2021	2021	America	Undergraduate	Simulation, hospital setting	Participants demonstrate improvements in communication, collaboration, and understanding of the roles of other professions.