



**August 2020**

**Organizational Models of  
Interprofessional Practice and  
Education in the United States:  
Results from a National Survey.**



NATIONAL CENTER for  
INTERPROFESSIONAL  
PRACTICE and EDUCATION



This document may be reproduced and distributed without permission for non-commercial educational purposes, provided that attribution is clearly stated. To request permission for any other use, contact [aihc@umn.edu](mailto:aihc@umn.edu)

## SUGGESTED CITATION

American Interprofessional Health Collaborative. (2020). Organizational Models of Interprofessional Practice and Education in the United States: Results from a National Survey. Minneapolis, MN: National Center for Interprofessional Practice and Education.

# Contents

Executive Summary.....	5
Introduction.....	7
Methods .....	7
Quantitative Results .....	8
Qualitative Results.....	22
Discussion and Implications .....	26
Conclusion .....	27
Appendix 1.....	28

# Organizational Models of Interprofessional Practice and Education in the United States: Results from a National Survey.

## Organizational Models Task Force

### American Interprofessional Health Collaborative

### National Center for Interprofessional Practice and Education

- **Scott Bennie, PT, DSc, MBA**, Dean, Health Professions, Graduate Studies, and Institutional Effectiveness, Kettering College
- **Amy Blue, PhD**, Associate Vice President for Interprofessional Education, University of Florida
- **Barbara Brandt, PhD**, Director, National Center for Interprofessional Practice and Education
- **Anthony Breitbach PhD, ATC**, Professor, Doisy College of Health Sciences, Saint Louis University
- **Patty Carney, PhD**, Professor of Family Medicine & Associate Director for Population Studies, Oregon Health and Science University
- **Timothy Farrell, MD, AGSF**, Associate Professor of Medicine, Division of Geriatrics, University of Utah School of Medicine, Physician Investigator, VA Salt Lake City Geriatric Research, Education, and Clinical Center Director, Director of University of Utah Health Interprofessional Education Program
- **Annette Greer, PhD**, Associate Professor, East Carolina University
- **Heather Hageman, MBA**, Director, Center for Interprofessional Practice and Education, Washington University Medical Campus
- **Kristy Johnston MSW**, Program Director, Center for Interprofessional Practice, Education, and Research, Kansas University Medical Center
- **Mary Mauldin, EdD**, Professor, Medical University of South Carolina
- **Susan Meyer, PhD**, Co-director, Pitt Center for Interprofessional Practice and Education, Associate Dean for Education, Professor, Pharmacy and Therapeutics, University of Pittsburgh School of Pharmacy
- **Devin Nickol, MD**, Assistant Dean for Interprofessional Education, University of Nebraska Medical Center
- **Patricia Ohtake, PT, PhD**, Assistant Vice President for Interprofessional Education, Office of the Vice President for Health Sciences; Associate Professor, Department of Rehabilitation Science, University at Buffalo
- **Andrea Pfeifle, EdD, PT**, Associate Vice Chancellor for Interprofessional Practice and Education, Wexner Medical Center and the Ohio State University
- **Sarah Shrader PharmD**, Professor, School of Pharmacy, University of Kansas

- **Teri Stumbo, PhD, PT**, Associate Dean, College of Health Sciences, Des Moines University
- **Elena Umland, PharmD**, Associate Provost for Interprofessional Practice and Education and Co-Director Jefferson Center for Interprofessional Practice and Education, Thomas Jefferson University; Associate Dean for Academic Affairs and Professor, Jefferson College of Pharmacy

## Executive Summary

### Background

Despite increased activity in the interprofessional practice and education (IPE) space in recent years, we know very little about the organization of systems that support this work in the United States (U.S.). To increase understanding of IPE organizational models, the American Interprofessional Health Collaborative (AIHC) and the National Center for Interprofessional Practice and Education (National Center) charged the IPE Organizational Models task force to design and administer a survey that explores the current status of how IPE is organized in the United States. The National Center for Interprofessional Practice and Education provides the leadership, evidence and resources needed to guide the nation on the use of interprofessional education and collaborative practice. The American Interprofessional Health Collaborative is the professional community of the National Center committed to promoting scholarship of IPE. Members of the task force were appointed by the executive leadership team based on their expertise and experience.

### Brief Methods

A survey was developed and sent to the 131 self-identified leaders of the IPE Initiatives list-serve on the National Center website between November-December 2019. The following report includes a summary of the demographic characteristics, methodology, and quantitative/qualitative results. Quantitative results include responses of the 37-item survey:

- Demographics
- IPE structure
- Financing
- Leadership
- Personnel
- Learners
- Physical infrastructure
- Institutional culture
- Systematic IPE plans

Qualitative analysis of the open-ended comments centered around 6 emergent themes:

- Infrastructure
- Institutional alignment
- Dedicated resources
- Instructional space
- Implementation
- Nexus IPE characteristics

## Key Findings

Overall survey responses were collected from 80 institutions (61% response rate) designated as having an IPE center/program/initiative on the National Center website. The following characteristics were identified by the majority (defined as 50% or more response on the survey):

- Centralized administrative structure
- Formal leader of IPE with a director title
- Dedicated budget
- Multi-institution collaboration/network/consortium
- Between 76-100% participation of health professions students
- Systematic IPE plan
- Internal faculty development programs offered
- Not referenced in promotion and tenure guidelines
- Referenced in individual college mission, vision, and/or strategic plans
- Senior leaders viewed as having a moderate understanding of IPE

Major themes from the qualitative analysis of the open-ended comments noted a marked heterogeneity and variability among universities in infrastructure, dedicated resources, physical instructional space for IPE, and the presence and implementation of IPE curricula. The predominant setting wherein students participate in an interprofessional clinical learning environment is outpatient primary care.

## Conclusion

More IPE programs in the U.S. are becoming organized and operationalized than were reported previously in the literature. Overall, there is little consistency between institutions' IPE programs. Additionally, a gap exists between stated institutional missions/strategic plans and the presence and extent of dedicated/centralized operational resources for IPE. One limitation to generalizability of these data include the relatively small sample size. This report generates additional questions that must be answered about context to fully understand the findings. These will be addressed in a future manuscript.

## Introduction

Since the release of the Interprofessional Education Collaborative (IPEC) competencies (IPEC 2011, 2016) and the Health Professions Accreditors Collaborative-National Center for Interprofessional Practice and Education Guidance on Developing Quality Interprofessional Education for the Health Profession (HPAC 2019), the integration of interprofessional practice and education into curricula and experiences is increasing (Greer et al., 2014; Congdon, 2016). Accordingly, the number of formal structures to support these initiatives has also increased (National Center for Interprofessional Practice and Education, 2019).

To date, little is known about how systems to support interprofessional practice and education are formally organized in the United States. The time is right to explore how IPE is organized and disseminate findings to continue progress in the field. Building upon existing literature, the American Interprofessional Health Collaborative (AIHC) and the National Center for Interprofessional Practice and Education (National Center) charged a task force to design and administer a survey that explores the current status of how IPE is organized in the United States (Greer et al., 2014; Eliot et al., 2017; Clay et al., 2018).

## Methods

### Survey Development

The executive leadership team of AIHC and the National Center appointed task force members based on their expertise and past publications with IPE surveys, involvement with Conversation Cafes on IPE organizational models during Nexus Summits, or their appointment on related AIHC committees. The taskforce followed the survey methodology of Artino et al. to develop a pilot survey. An invitation to complete the pilot survey was sent via email to the self-identified leaders of IPE Initiatives list-serve on the National Center website. The survey was administered over three weeks with three reminders in July 2019. The pilot results were reported at the Nexus Summit and Collaborating Across Borders VII meetings in August and October 2019. The results were shared and audience input was collected to inform necessary revisions for the final survey. The final survey was administered electronically via Qualtrics Software (Provo, UT) and distributed to the IPE Initiative list-serve over four weeks with three reminders in November-December 2019. The project was approved as exempt research by the University of Minnesota institutional review board.

The final survey included 37 items. Some survey items were presented as branch-logic questions where respondents were only asked to answer follow-up questions based on their response to the original item.

Survey Sections and Items are organized by:

- Demographics (6 items)
- IPE structure (8 items)
- Financing (4 items)
- Leadership (4 items)
- Personnel (Faculty and Staff) (4 items)

- Learners (3 items)
- Physical infrastructure (2 items)
- Institutional culture (4 items)
- Systematic IPE plans (2 items)

Survey respondents voluntarily and anonymously completed the items. There were a few instances where multiple surveys were submitted for the same institution. The most complete data set was used and the duplicate was removed. In addition to answering the survey items, there was an opportunity for participants to comment after each survey item if they desired.

## **Quantitative Analysis**

Data for each item were analyzed using descriptive methods. Data analysis used Microsoft Excel (Redmond, WA) and Qualtrics (Provo, UT) software.

## **Qualitative Analysis**

Grounded theory methodology was used to analyze the comments provided by survey respondents (Glaser & Strauss, 1967; Morse et al., 2009). The primary and secondary coders were individuals familiar with interprofessional education and practice and experienced with qualitative research. During the first iteration, two researchers individually reviewed the comments accompanying the survey data and formed a list of themes within and across respondents using axial text coding by question clusters. Researchers then compared coding and themes and further explored connections between them to both expand and then narrow the stated experiences of the respondents. In the second iteration, three additional researchers reviewed the coding and themes to come to final consensus around a list of key themes.

## **Quantitative Results**

### **Demographics**

A total of 80 out of 131 possible surveys were submitted (61% response rate). Of the respondents, a majority of IPE programs have existed for more than six years (56%; see Table 1). A majority are in higher education institutions that: are located in an academic health center (AHC; 65%; see Table 2), have greater than 900 individuals enrolled in health professions degree programs (53%; see Table 3), and are classified as doctoral-degree-granting institutions (75%; see Table 4). Institutions from 39 different states responded to the survey (See Appendix 1) though we did not report the specific name of each institution to further de-identify the data.



Table 1. If applicable, how many years has your institution had an IPE program?

ANSWER	N	PCT
Less than one year	2	2.50%
1-2 years	5	6.25%
3-5 years	28	35.00%
6-10 years	29	36.25%
Greater than 10 years	16	20.00%
Total Count	80	

Table 2. Is your institution located in an academic health center?

ANSWER	N	PCT
Yes	52	65.00%
No	28	35.00%
Total Count	80	

Table 3. Number of learners (defined as individuals enrolled in health professions degree programs) in your IPE program:

ANSWER	N	PCT
Less than 100	1	1.25%
100-299	8	10.00%
300-499	11	13.75%
500-699	11	13.75%
700-899	7	8.75%
Greater than 900	42	52.50%
Total Count	80	

Table 4. Carnegie Classification of Institution:

ANSWER	N	PCT
Baccalaureate/Associate's Colleges	1	1.25%
Baccalaureate Colleges	2	2.50%
Special Focus: Four Year	4	5.00%
Master Colleges and Universities	7	8.75%
Doctoral Universities	60	75.00%
No Answer	6	7.50%
Total Count	80	

## IPE Structure

The most common method of organizing IPE is a centralized administrative structure (CAS) involving dedicated office space and personnel formally designated to lead IPE (53.75%), followed by a formally appointed standing committee (21.25%; see Table 5).

The most common type of reporting function identified is a stand-alone structure which works across professions/programs and reports to a central senior administrator (44.78%). Less common reporting functions include in a single college or school (23.37%) and reporting functions housed in central administration (29.35%; see Table 6).

A wide variety of direct reporting structures exist for IPE, with no category showing a clear majority (see Table 7).

Seventy three percent of respondent institutions operate more than one campus, 47% of which have four or more campuses (Table 8). Of the institutions that self-identified as having multiple campuses, 50% of those institutions report that an IPE program was delivered across all campuses (Table 9). Another 37.93% report that IPE programming was partially delivered across all campuses. The majority of institutions (72.50%; see Table 10) indicate they participate in a multi-institution collaboration/network. The most common type of collaboration reported between institutions is for educational purposes (Table 11).

Table 5. Indicate which structure best describes how IPE is currently organized in your institution.

ANSWER	N	PCT
Centralized Administrative Structure with dedicated office space and personnel is formally designated to lead IPE in institution.	43	53.75%
Formally Appointed Standing Committee with interprofessional representation leads IPE at our institution.	17	21.25%
Ad hoc taskforce with interprofessional representation is designated to develop an approach to organize IPE at our institution.	3	3.75%
No formal structure exists to organize IPE, with significant numbers of IPE activities, courses and/or experiential rotations offered by individual IPE champions.	4	5.00%
No formal structure exists to organize IPE, with few IPE activities, courses and/or designated experiential rotations.	1	1.25%
Other, please describe:	12	15.00%
Total Count	80	

Table 6. If your institution has an Ad Hoc Structure, a Centralized Structure, or Formally Appointed Committee, please indicate which statement best describes the reporting function:

ANSWER	N	PCT
Housed within a single college or school, working across professions and/or programs (e.g., central IPE office housed in School of Nursing or Medicine)	17	25.37%
Housed in central administration and works across professions and/or programs and reports to the deans/administration of all colleges (e.g., council of deans)	20	29.85%
Stands alone (e.g., like the library) and works across professions and/or programs and reports to a central senior administrator (e.g., provost)	30	44.78%
Total Count	67	

Table 7. Please indicate the administrator (or similar designation) to whom your IPE structure directly reports.

ANSWER	N	PCT
President or Chancellor	5	6.25%
Vice-Chancellor	9	11.25%
Provost	16	20.00%
Vice Provost or Vice President	10	12.50%
Dean	20	25.00%
Other, please describe:	13	16.25%
No answer	7	8.75%
Total Count	80	

Table 8. For institutions that have multiple campuses, how many campuses?

ANSWER	N	PCT
4 or more campuses	27	46.55%
3 campuses	19	32.76%
2 campuses	12	20.69%
Total Count	58	

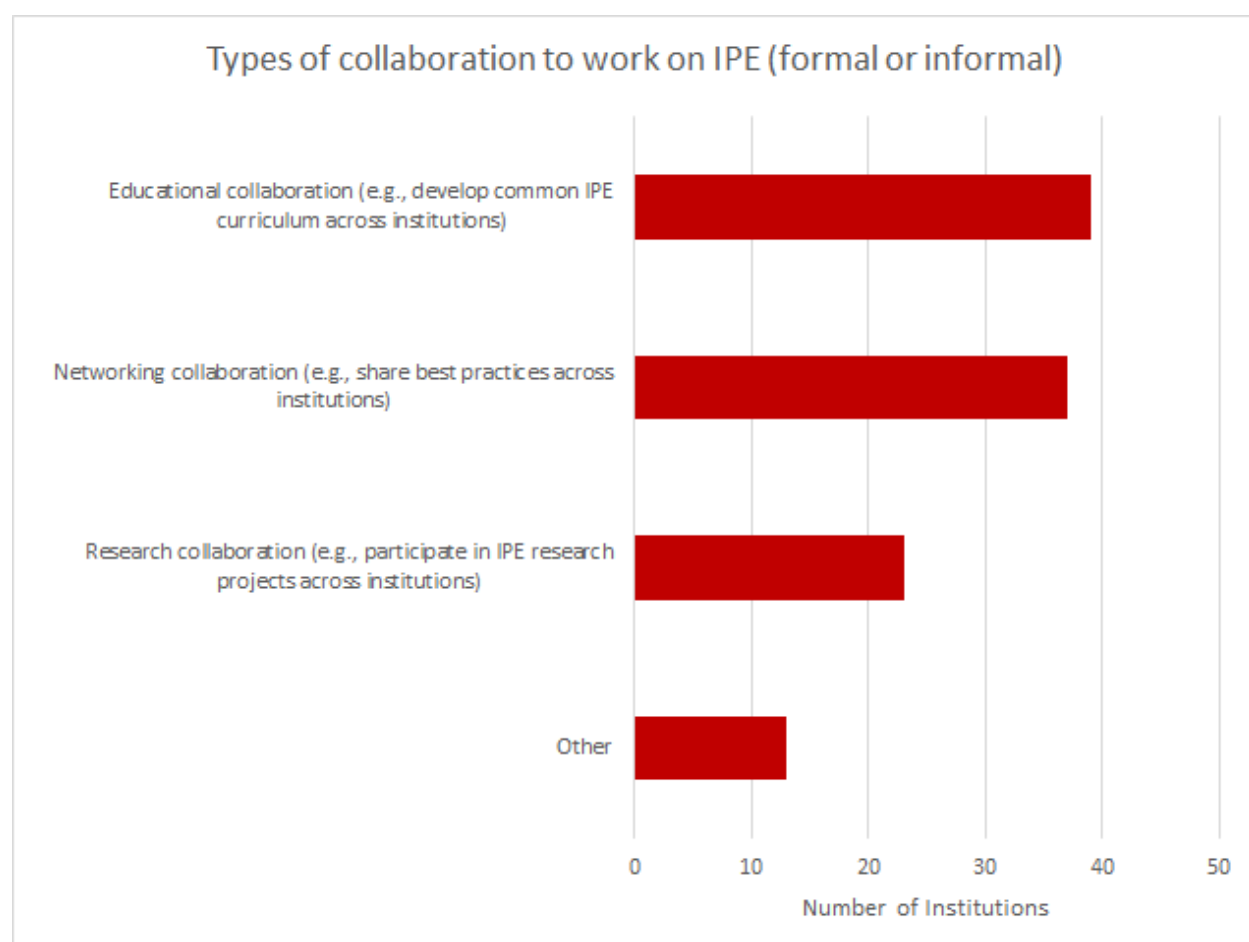
Table 9. For institutions with multiple campuses, is an IPE program delivered across all of them?

ANSWER	N	PCT
Yes	29	50.00%
Partially (meaning it may be adapted and/or it may be delivered on some but not all campuses)	22	37.93%
No	7	12.07%
Total Count	58	

Table 10. Does your institution participate in a multi-institution collaboration/network/consortium to work on IPE (formal or informal)?

ANSWER	N	PCT
Yes	58	72.50%
No	21	26.25%
No answer	1	1.25%
Total Count	80	

Table 11. Of those that participate in multi-institution collaboration please select the type of collaboration: (check all that apply)



## Financing

A total of 71.25% of reporting institutions have a dedicated budget, while 22.5% do not have a dedicated budget for IPE (Table 12). Internal funding for IPE infrastructure is most commonly centralized and provided by the institution (Table 13). When a combination of internal and external funding is reported, most revenue is internal for 85% of the institutions (Table 14).

A large variability in budgetary amounts emerged and results should be interpreted with caution as context was not reported. Based on the categories provided to the respondents, the annual IPE budget including salary for personnel and operating expenses ranged from less than \$25,000 to greater than \$500,000. Over 60% of programs reported an annual budget of greater than \$100,000. Considerations around program size, scope of work, in-kind contributions coming from programs, schools, or colleges, and outcomes logically impact the budget made available for each institution and should be carefully considered. Further analysis of these items in relation to budgets will be shared as it is available.

Table 12. Financing of IPE infrastructure. Select which best applies at your institution:

ANSWER	N	PCT
Dedicated budget, internally funded by institution.	37	46.25%
Dedicated budget, funded from both internal and external sources.	20	25.00%
Dedicated budget, funded by only external sources.	0	0.00%
No dedicated budget.	18	22.50%
No Answer	5	8.75%
Total Count	80	

Table 13. Select which best describes your internal funding:

ANSWER	N	PCT
Centralized funding is provided by the institution/central administration.	28	35.00%
Centralized funding is shared by both colleges/programs and central administration.	14	17.50%
Each college/program provides funds to support IPE and it is handled separately with various approaches used across the colleges/programs.	12	15.00%
No answer	26	32.50%
Total Count	80	

Table 14. Of those that report funding from both external and internal sources, which best describes your funding model (when funded from external and internal sources):

ANSWER	N	PCT
90% internal/ 10% external	10	50.00%
75% internal/ 25% external	7	35.00%
50% internal/ 50% external	2	10.00%
10% internal/ 90% external	1	5.00%
Total Count	20	

## Leadership

Eighty percent of the institutions report that a leader has been formally designated IPE leader (Table 15). IPE leaders were appointed by administration in 50% of the reporting institutions, while 36% of the institutions conducted a search to fill the position (Table 16). Twenty six percent of the IPE leaders have greater than 75% of their job duties allocated to IPE while nearly half dedicate 25-50% of their time to IPE (Table 17). The majority of IPE leaders have a director title (Table 18).

Table 15. Is there a formally designated leader for IPE at your institution?

ANSWER	N	PCT
Yes	64	80.00%
No	15	18.75%
No answer	1	1.25%
Total count	80	

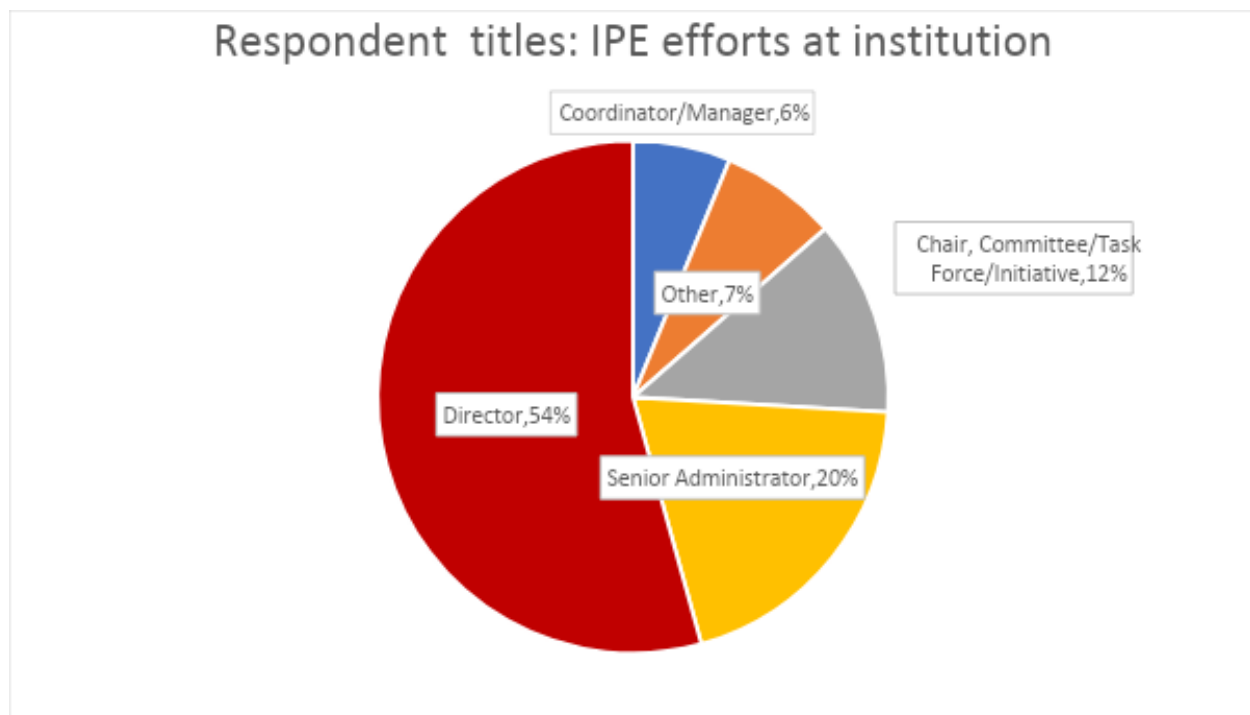
Table 16. Of those that have a formal leader, how was the IPE leader selected?

ANSWER	N	PCT
Appointed by administration	32	50.00%
Search Process	23	35.94%
Faculty vote	1	1.56%
Other, please specify:	8	12.50%
Total Count	64	

Table 17. Of those that have a formal leader, what is the full time equivalent (FTE) assignment of the designated leader exclusively to IPE responsibilities?

ANSWER	N	PCT
76-100% FTE assigned	17	26.56%
26-50% FTE assigned	29	45.31%
25% or less FTE assigned	15	23.44%
Other (please describe):	2	3.13%
No answer	1	1.56%
Total count	64	

Table 18. What is the current title of the IPE leader at your institution?



### Personnel (Faculty and Staff)

Excluding the leader of IPE efforts on campus, 17.5% of respondent institutions dedicate more than 3.0 full-time equivalent (FTE) employees while 27.5% have less than 0.25 FTEs (Table 19). Many institutions (37.5%) allow each college/program to determine how to provide faculty effort while 28.75% encourage faculty members to participate in IPE as an additional responsibility (Table 20).

Two primary resource models for faculty effort in IPE were commonly reported: 47.50% have each college/program determine how to provide faculty resources separately, while 33.75% have faculty who volunteer beyond their formal responsibilities in academic programs (Table 21).

Most institutions (84%) provide faculty development opportunities for IPE in some form. Internal faculty development (e.g., workshop, simulation, online seminar) is provided in 68% of respondent institutions and external faculty development opportunities by 47%. Twenty three percent of institutions provide funding to bring in external speaker/consultant for faculty development, while 32% provide a combination of opportunities (i.e., internal, external, and/or funding for external speaker/consultant) (Table 22).

Table 19. What is the total FTE of faculty and/or staff (EXCLUDING the leader) that is dedicated to IPE?

ANSWER	N	PCT
More than 3.0 FTE	14	17.50%
2.6-3.0 FTE	3	3.75%
2.1-2.5 FTE	3	3.75%
1.6-2.0 FTE	7	8.75%
1.1-1.5 FTE	7	8.75%
0.76-1.0 FTE	7	8.75%
0.51-0.75 FTE	2	2.50%
0.25-0.50 FTE	9	11.25%
Less than 0.25 FTE	22	27.50%
No answer	6	7.50%
Total Count	80	

Table 20. What is the primary faculty effort model in IPE at the institution?

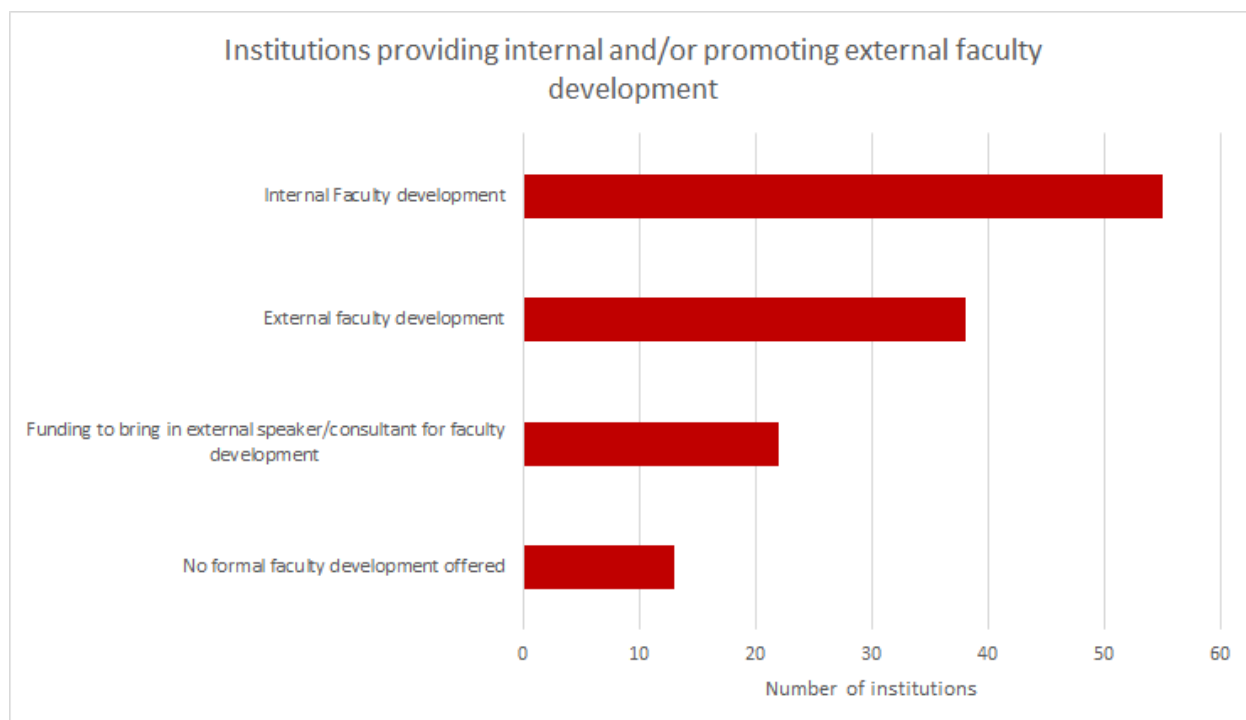
ANSWER	N	PCT
Faculty members roles are substantially dedicated to IPE	4	5.00%
Faculty members are encouraged to participate in IPE and assigned responsibilities arranged to accommodate IPE	7	8.75%
Faculty members encouraged to participate in IPE (e.g., additional responsibilities)	23	28.75%
Each college/program determines how to provide faculty effort (e/g/, a variety of approaches used)	30	37.50%
Faculty participate in IPE based on individual interest (e.g., not officially encouraged/discouraged)	13	16.25%
No faculty participate in IPE	0	0.00%
No answer	3	3.75%
Total count	80	

Table 21. What is the primary resource model for faculty effort in IPE?

ANSWER	N	PCT
Each college/program manages funding for faculty efforts separately but in consensus.	3	3.75%
Centralized resources for faculty effort.	4	5.00%
Faculty effort recognized and rewarded as part of standard workload.	7	8.75%
Faculty volunteer beyond formal responsibilities in academic programs.	27	33.75%
Each college/program determines how to provide faculty resources separately (e.g., a variety of approaches used).	38	47.50%
No answer	1	1.25%
Total Count	80	



Table 22. Does the institution provide internal and/or promote external faculty development opportunities for IPE? (Select all that apply)



## Learners

Nearly 60% of respondents have participation at some level from more than 75% of the students and programs within their institution (Table 23). More specifically, participation in IPE is required for all students in 37.50% of respondent institutions while 52.50% have participation as mandatory for some and elective for others (Table 24). A broad array of professions learners participates in IPE programs (Table 25).

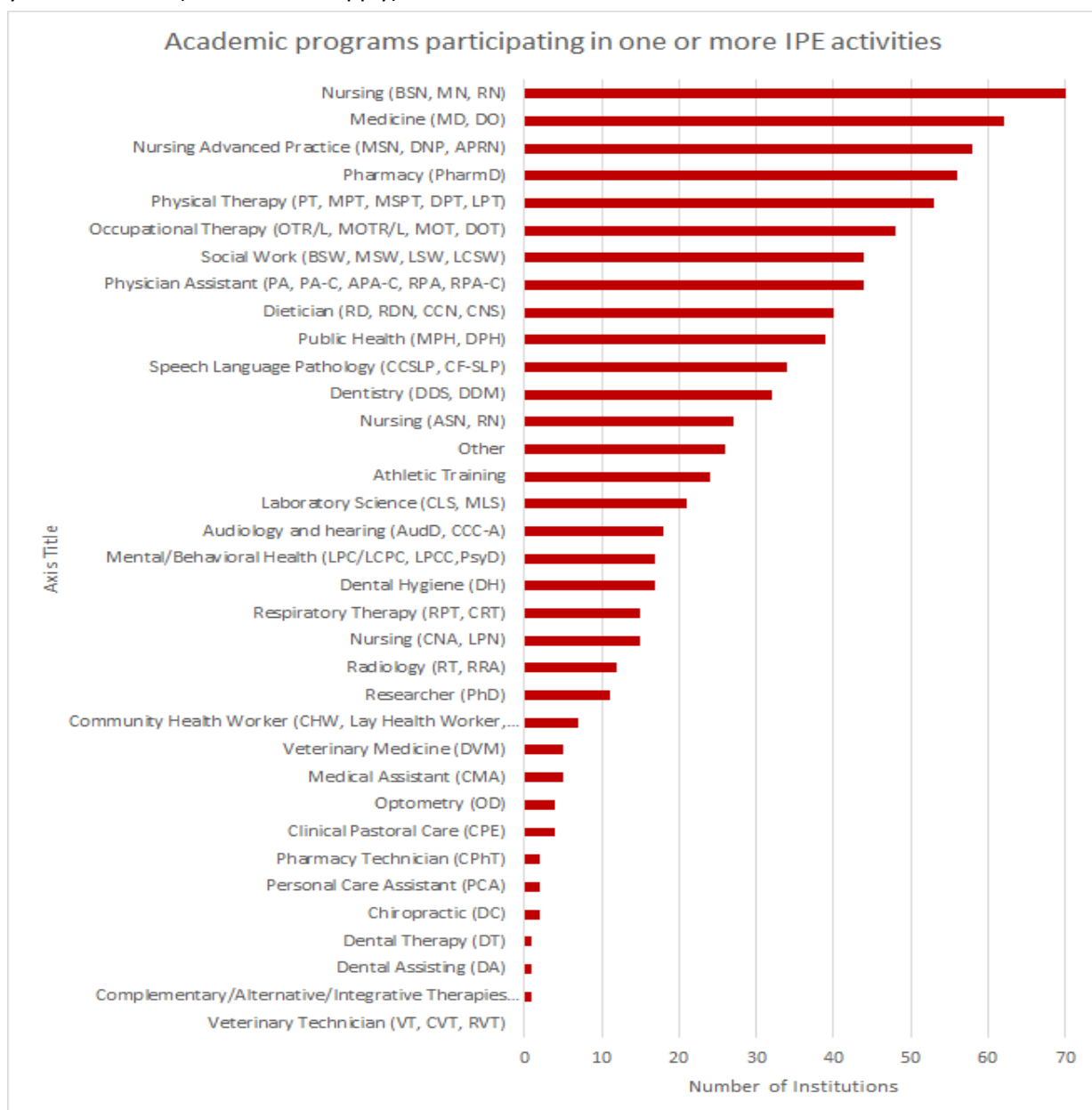
Table 23. Of the academic programs participating in IPE at your institution, what percent of students collectively participate in IPE?

ANSWER	N	PCT
76-100% of health professional students/programs participate in some level of IPE	47	58.75%
51-75% of health professional students/programs participate in some level of IPE	15	18.75%
26-50% of health professional students/programs participate in some level of IPE	12	15.00%
25% or fewer of health professional students/programs participate in some level of IPE	4	5.00%
No answer	2	2.50%
Total count	80	

Table 24. To what extent is IPE participation (defined as participating in at least one activity) required at your institution?

ANSWER	N	PCT
Required for some, elective for others	42	52.50%
Required for all	30	37.50%
Elective for all	5	6.25%
No answer	3	3.75%
Total count	80	

Table 25. Which academic programs participate in one or more of your required/core IPE activities in your institution (select all that apply)?



## Physical Infrastructure

More than 30% of respondents have a dedicated interprofessional clinical environment (e.g., outpatient clinic, inpatient unit, community-based organization) for teaching and another 23% have such a space in development (Table 26). In the IPE learning space, 36.25% responded that space is not always sufficient or appropriate in configuration for activities and not all IPE learning space is conducive to learning needs (32.50%; see Table 27).

Table 26. Is there a dedicated interprofessional clinical environment at your institution to teach interprofessional practice? (e.g., outpatient clinic, inpatient unit, community-based organization)

ANSWER	N	PCT
Yes (please briefly describe in comment box)	26	32.50%
In progress (please briefly describe in comment box)	18	22.50%
No	24	30.00%
No answer	12	15.00%
Total count	80	

Table 27. Other than clinical or patient care areas, please indicate availability of on-campus IPE Learning Space in general (e.g., classrooms, small group rooms, simulation rooms).

ANSWER	N	PCT
IPE learning space is available, but not always sufficient or appropriate in configuration for activities and additional alternative locations must be found.	29	36.25%
Space for IPE learning exists but not all space is conducive to learning needs.	26	32.50%
All space for IPE learning is conducive to learning needs.	21	26.25%
No answer	4	5.00%
Total count	80	

## Institutional Culture

Half of respondents' promotion and tenure guidelines do not contain references to IPE, and of those that do most (35%) are referenced at the individual college/program level (Table 28). More than half of respondents include IPE in institutional mission/vision or strategic plans (Table 29).

While 83% of respondents thought their senior leaders had an extensive to moderate understanding of IPE, only 64% said their leaders demonstrated a commitment to IPE. Further, 33% said the commitment was limited (Tables 30 and 31).

Table 28. How is IPE referenced in promotion and tenure guidelines? (select all that apply)

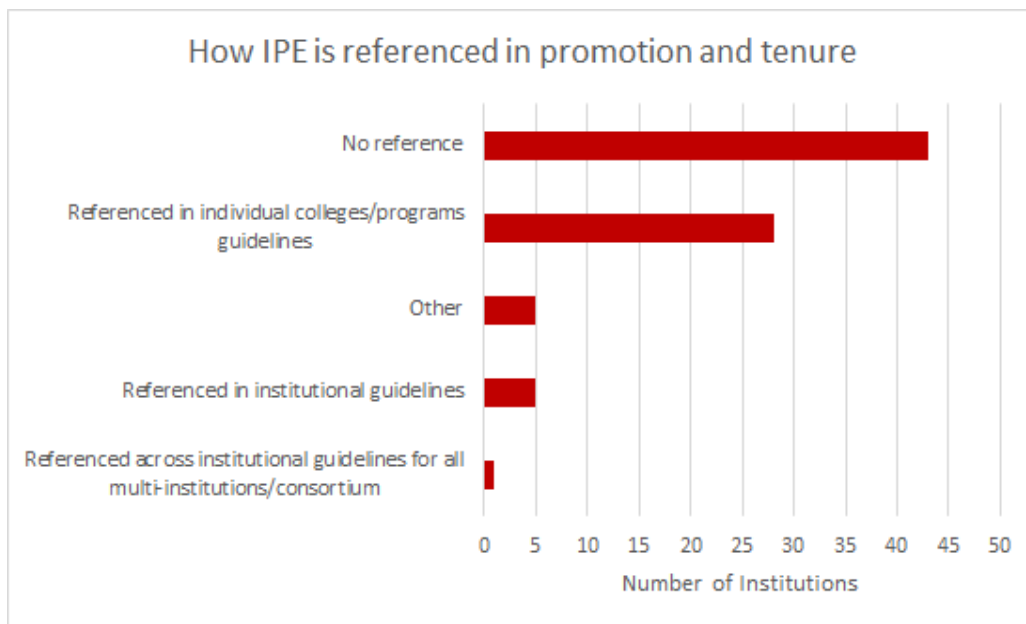


Table 29. Institutional Policy - IPE in Mission and/or Vision Statements and/or Strategic Plan. (select all that apply)

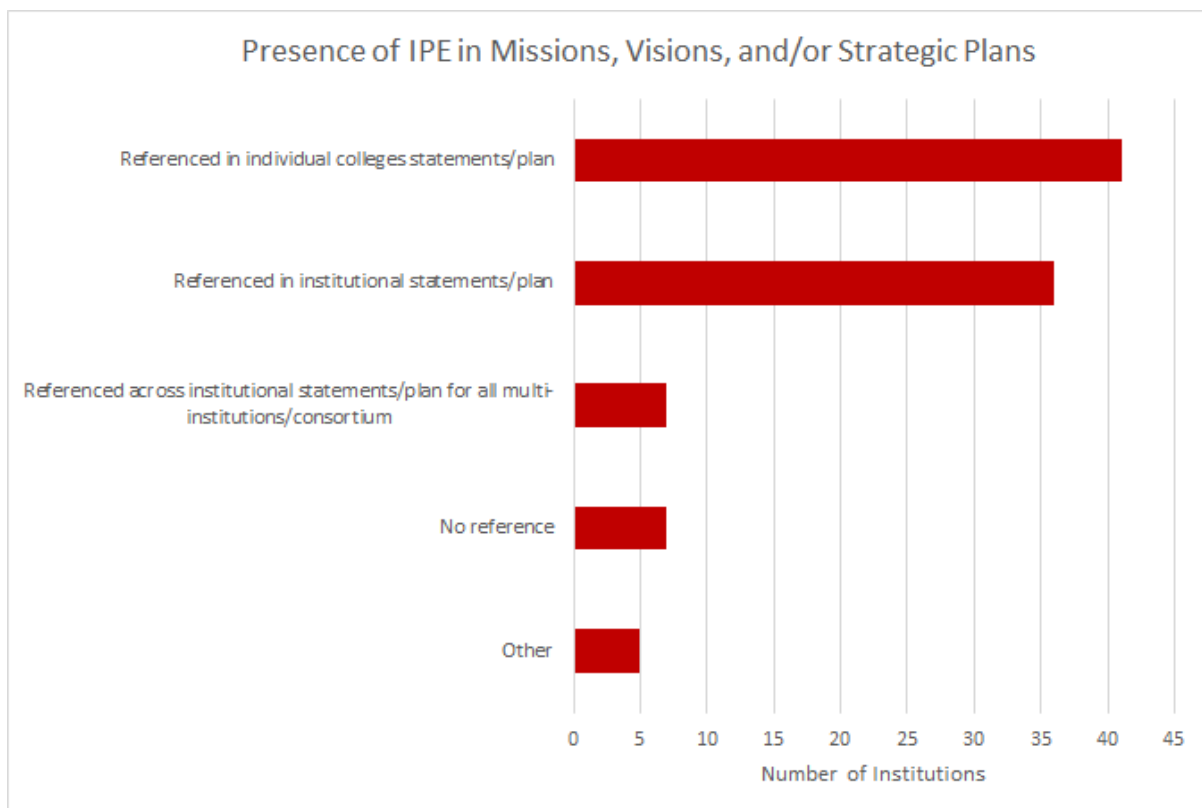


Table 30. To what extent do senior leaders (e.g., Provost, Vice President, Deans) understand what IPE is?

ANSWER	N	PCT
Extensive	24	30.00%
Moderate	42	52.50%
Limited	10	12.50%
None	1	1.25%
No answer	3	3.75%
Total count	80	

Table 31. To what extent do senior leaders demonstrate commitment to IPE?

ANSWER	N	PCT
Extensive	25	31.25%
Moderate	26	32.50%
Limited	26	32.50%
None	1	1.25%
No answer	2	2.50%
Total count	80	

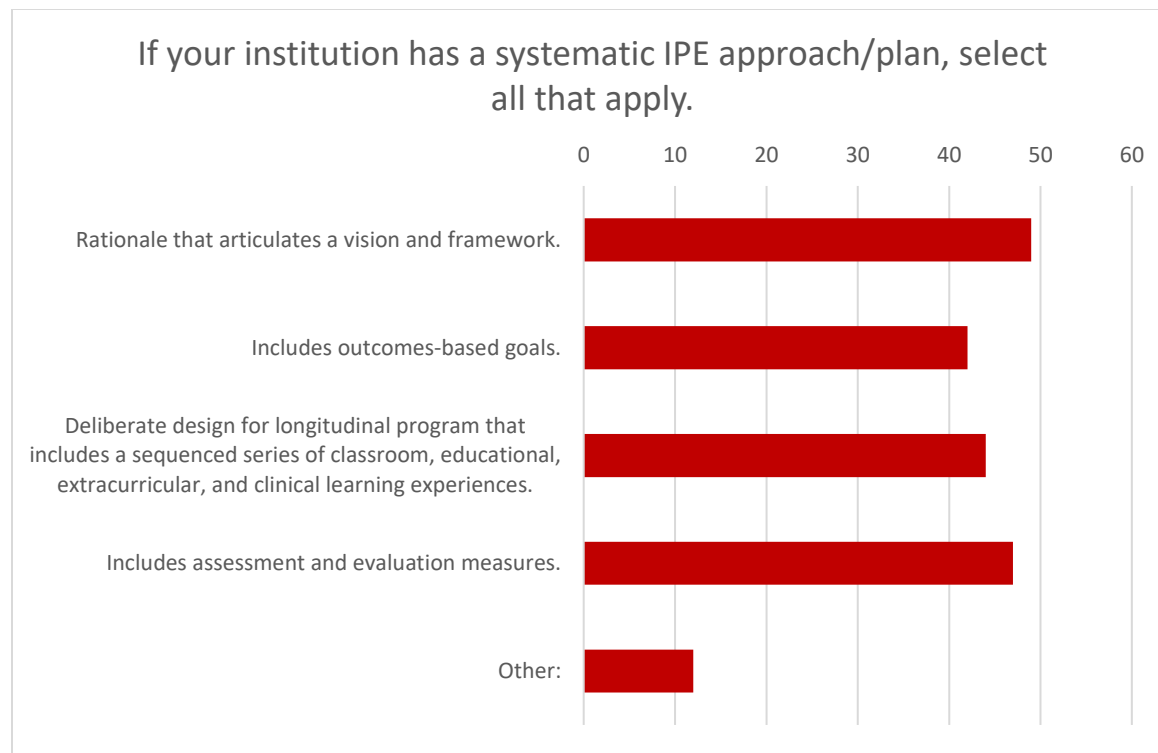
## Systematic IPE Plans

Half of respondents report a systematic IPE approach/plan while another 35% said they were in development (Table 32). Of those that reported a plan, the most common components included a rationale and assessment and evaluation measures (Table 33).

Table 32. Do you have a systematic IPE approach/plan currently in place at your institution?

ANSWER	N	PCT
This institution does have a systematic IPE approach/plan.	40	50.00%
This institution is in the process of developing a systematic IPE approach/plan.	28	35.00%
This institution does not have a systematic IPE approach/plan.	9	11.25%
No answer	3	3.75%
Total count	80	

Table 33. If your institution has a systematic IPE approach/plan, select all that apply.



## Qualitative Results

Comments provided by respondents clustered into five key themes:

- Infrastructure
- Institutional Alignment
- Dedicated Resources
- Implementation
- Nexus IPE Characteristics

**Infrastructure:** There is marked heterogeneity among universities in administration of IPE programs with respect to the amount of effort or time formally allocated for IPE leadership, how it is funded, where the IPE unit resides within an organization, and reporting lines and accountability. Further, the infrastructure supporting IPE changes often and IPE leaders may have multiple reporting lines upward. Exemplar comments are presented below.

### *IPE Leadership & Effort*

#### 100%:

*“this is a .5 FTE position, yet I also have funding for .5 to due rural IPE, allowing me to have 100% dedicated to this work.”*

#### 50%:

*“Position is at 50%”; “I have 0.50 FTE in my role as Director of IPE.”*

Less than 50%:

*"Not formally assigned - this is an estimate based on workload. Faculty and leadership receive an academic stipend to do IPECP work."*

Voluntary:

*"The appointed leader is also the head of another department so only a certain amount of time can be allocated to IPE.; We have a volunteer taskforce with co-chairs university-wide. Some colleges have dedicated IPE leaders but most do not. Those that do have accreditation requirements that include it so the university is forced to comply. Otherwise, it is purely faculty volunteers. While the deans encourage this work, there is no structure, workload or financial support."*

#### *Organizational Structure*

Different Institutions:

*"collaboration of three freestanding schools co-located on the same campus; I report to two individuals from each institution"*

Same Institutions:

*"We are more of a hybrid of the latter 2 options. Although the Director of IPE reports to the AVP of Health Sciences at our institution, the IPE Program is still accountable to all the various Deans as well."*

#### *Reporting Lines and Accountability*

Institutional Level:

*"Vice-Chancellor of Academic Affairs"; "The position reports to the Vice President for Health Affairs"; "The Director of IPE reports to the Associate Vice President (AVP) for Health Sciences Education";*

School Level:

*"Each profession reports to the respective dean"; "health science deans are engaged and they report to the Chancellor and Provost"*

Increasing Levels:

*"Our program has been moved a few times in the five years I have been here, but we currently fall under Associate Vice Chancellor of Student Affairs within the Office of Academic and Student Affairs office."; "The IPE Coordinator did report to the Director of the Center for Teaching and Learning, but now will report to an assistant dean in the College of Health Sciences."*

Institutional Alignment: Respondents described a lack of alignment between the broader stated mission to advance interprofessional collaboration at their respective universities and the resources that were dedicated to advance IPE programming.

#### *Mission*

Overall Institutional Structure:

*"It is the mission and vision for the university and as such is included in the university strategic plan. This means it is also in school and college purposes and strategic plans."*

School Structure:

*"It is throughout the school of medicine and school of nursing strategic plan - but not sure if in the mission/vision statements."*

Center Structure:

*"in IPE center's mission."*

Nomenclature:

*"Outdated terminology is used: "interdisciplinary"*

### *Formal Institutional Activities*

#### Tenure and Promotion:

*"We are working to integrate language and each of the P&T committees to give credit to the faculty that volunteer for all of our activities."*

#### Guidelines:

*"each participating school has crafted guidelines and educated faculty on how to present this in their dossier."*

#### Alignment with Faculty Educational Competencies:

*"No specific reference. Falls in alignment with current educational development verbiage".*

### *Informal Institutional Activities*

#### Appreciation Notes:

*"We send Thank you letters after each event that our faculty can include on their P&T" packets."*

#### None:

*"A true frustration as previously noted!"*

### Dedicated Resources

*Funding.* Respondents described marked variability in the funding models supporting IPE across institutions, but also within institutions from one year to the next. There were several comments describing tension associated with uncertainty around funding and many initiatives are functioning on a year-to-year basis.

#### Institutional funding:

*"Budget is provided by the University which includes one personnel salary and a small operating budget. Student fees are collected for specific IPE programs and others are funded through course budgets for each college. We also have a fee-for-service model for external institutions who are involved in specific programs."*

#### Grant funding:

*"Grant funding is a key aspect of our budget."*

#### Limited funding:

*"This is the biggest struggle for us. We have no resources currently dedicated and in an extremely difficult budget climate with reducing enrollment across our state, there is little interest in building our efforts if there are any costs involved. So we do what we can as volunteers on a shoestring"*

#### Committed-time funding:

*"A director and assistant director of IPE have dedicated protected time."*

*Faculty.* For the most part, faculty leadership and engagement in IPE is either not resourced or under-resourced.

#### Under-resourced:

*"Workload assignments are made in nursing and pharmacy. Audiology, Medicine, OT and PT are voluntary with the exception of a .1FTE IPE thread leader in medicine."; "We continue to struggle with growing/maintaining a robust pool of faculty facilitators across the curriculum."; "Within each program there are a handful of faculty who receive small protected time to serve as leads for IPE within their program and liaise to CIPE. In addition, we contract with an evaluation center .1 FTE for evaluation/assessment needs."*



Not resourced:

*"Several years ago, we observed (and feared) faculty burnout as IPE was primarily an add on"; "Its different at each institution we partner with – mostly its an additional activity they commit to rather than a funded position."; "No designated faculty. Volunteer only – other duties as assigned."*

*Instructional Space.* IPE often occurs in space that has not been designed for collaboration and is not conducive to teamwork. Even when space has been built specifically to facilitate collaborative learning, it may not be prioritized for IPE in scheduling.

Built Space:

*"We have an active learning classroom, but have difficulty securing it because our programming is not associated with a course number, so we fall to the bottom of the priority list!"; "For some of our large case-based learning activities we have difficulty finding space large enough to accommodate all of the students and we have difficulty finding enough small rooms for the breakout sessions."; We moved into a brand new Health Professions Building designed with interprofessional spaces (classrooms, small group rooms. and simulation rooms) August 2019"*

Not Designed or Conducive Space:

*"Space that we can request is non-flexible space and not conducive to all IPE needs. Flexible space in the university has a rent fee."; "this is a big issue for us. We are constantly searching for space."*

*Organizational Structure Space.*

Central Office:

*"Housed in central office"; "investigating the designation as a Center under University Statutes"*

Virtual Space:

*"We do not have a physical space or office but work collaboratively"; "Virtual IPE"*

*Implementation:* Despite marked heterogeneity among universities in approaches to organizing and supporting IPE programs, there is an uptake in required core IPE curricula and faculty development trainings are offered by most IPE programs.

Organizing IPE Programs:

*"All pre-licensure students at XXXX University will complete our 4 workshop series in February. Our direct entry MSN students will begin this in Fall. Topical sessions have involved some advanced practice nursing students, so those groups will continue to be added when a new Coordinator is hired."; "Our goal is to have 100% of entry level nursing students, medical students, dental and dental hygiene students, and pharmacy (PharmD) students participate in 15 hours of introductory content over 2 semesters. In Fall 2019 we have over 1,000 students doing the 15 hours of content."*

IPE Core Curricula:

*"Four embedded IPE courses are integrated into undergraduate health professions curriculum as part of the major. An additional three courses are available to undergraduate health professions that enable an academic minor in Interprofessional Practice At the graduate level, 100% of students enrolled in Medicine, ABSN, AMSN, PA, PT, OT, RD Interns, AT, and Pharmacy participate in required IPE course/seminars."; "graduation requirement for 26 hours (7 events) developmental curriculum for all students pre-licensure."*

#### Faculty Development:

*"We also have an internal faculty development program now that is in its 3rd cycle.";  
"Faculty training programs are held in advance of the delivery of all of our IPE programs for new and seasoned faculty. These sessions serve as a great trouble shooting opportunity and an opportunity for faculty to come together. The Center has also delivered IPE faculty development through the Institutional Faculty Development Committee surrounding topics such as What is IPE, Developing an IPE program and facilitating an IPE program. The Center also supports the development of faculty in IPE by funding travel to major IPE meetings as well as IPEC Institutes."*

Nexus IPE Characteristics: The predominant setting described wherein students participate in interprofessional collaborative practice and education is in outpatient primary care. A small variety of other settings mentioned include (listed in no order) inpatient ward, emergency department, and specialty clinics. Most IPCP involving students fills a gap in services or complements efforts to provide healthcare for underserved populations.

#### Settings:

*"there are simulation centers on all campuses that are used "; "we are able to use classroom/lab/study space at those times."; "Oral health and primary care clinic"; "community outpatient free clinic"; "IP geri unit in hospital."; "ambulatory primary care."*

#### Services:

*"oral systemic health"; "working on inpatient discharge unit and cross-discipline precepting and evaluations of collaborative practice skills across professions and clinical rotations"; "providing primary care to needy patients."; "see children with complex GI issues"*

## Discussion and Implications

Many encouraging trends emerged that demonstrate the dedication to IPE and advancements in the field. IPE programs are maturing and the number and variety of learners that are required to participate in IPE is substantial. Many programs are using a centralized administrative structure to organize the complex needs of delivering IPE. Institutions are demonstrating a commitment by establishing a centralized and dedicated leader, budget, faculty development and building a systematic IPE plan. Despite the positive findings, there are some key points that should be addressed to continue to enhance IPE efforts in the U.S. Centralizing resources emerged as a concern especially regarding the stability and amount of budget and faculty time allotted for IPE. Additionally, inclusion of IPE in promotion and tenure guidelines and engaging senior leaders at the institution level (as opposed to individual colleges) are important considerations.

#### Implications for the IPE Field:

- Continue a biennial national survey to determine emerging best practices for organizing IPE
- Promote IPE sustainability by engaging with the Health Professions Accreditors Collaborative
- Advocate for centralized resources such as dedicated budgets, faculty time, and promotion and tenure for IPE to institution-level senior leadership

## Conclusion

More IPE programs in the U.S. are becoming organized and operationalized than what was reported previously in the literature. Overall, there is little consistency between institutions' IPE programs. Additionally, a gap exists between stated institutional missions/strategic plans and the presence and extent of dedicated/centralized operational resources for IPE. One limitation to generalizability of the data include the relatively small sample size. The report generates additional questions that must be answered about context to fully understand the findings. These will be addressed in a future manuscript.

## References

- Artino, A.R., La Rochelle, J.S., Dezee, K.J., Gehlbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Medical Teacher*, 36, 463-474.
- Clay, M.C., Garr, D., Greer, A., Lewis, R., Blue, A., Evans, C. (2018). An update on the status of interprofessional education and interprofessional prevention education in U.S. academic health centers. *Journal of Interprofessional Education & Practice*, 10, 61-66.
- Congdon, H.B.. (2016). Interprofessional Education (IPE) practices at universities across the United States with an established IPE infrastructure in place. *Journal of Interprofessional Education & Practice*, 5, 53-58.
- Eliot, K., Breitbach, A., Wilson, M., Chusak, M. (2017). Institutional readiness for interprofessional education among nutrition and dietetics and athletic training education programs. *Journal of Allied Health*, 46 (2), 94-103.
- Glaser, B. G., & Strauss, A. (1967). *The discovery of grounded theory. Strategies for qualitative research*. Chicago: Aldine.
- Greer, A. G., Clay, M., Blue, A., Evans, C. H., & Garr, D. (2014). The status of interprofessional education and interprofessional prevention education in academic health centers: a national baseline study. *Academic Medicine*, 89 (5), 799-805.
- Health Professions Accreditors Collaborative. (2019). Guidance on developing quality interprofessional education for the health professions. Chicago, IL: Health Professions Accreditors Collaborative.
- Interprofessional Education Collaborative. (2016). Core competencies for interprofessional collaborative practice: 2016 update. Washington, DC: Interprofessional Education Collaborative.
- Morse, J. M., Stern, P. N., Corbin, J., Bowers, B., Charmaz, K., & Clarke, A. (2009). *Developing grounded theory. The second generation*. Walnut Creek: Left Coast Press.
- National Center for Interprofessional Practice and Education (2019, Jan 1). IPE Centers, Programs, and Initiatives. <https://nexusipe.org/connecting/ipe-centers>

Appendix 1. Respondents by state

ANSWER	N	PCT
Alabama	1	1.25%
Arizona	1	1.25%
Arkansas	2	2.50%
California	1	1.25%
Colorado	2	2.50%
Connecticut	1	1.25%
Delaware	1	1.25%
Florida	2	2.50%
Georgia	1	1.25%
Illinois	3	3.75%
Indiana	4	5.00%
Iowa	2	2.50%
Kansas	1	1.25%
Kentucky	1	1.25%
Louisiana	2	2.50%
Maine	2	2.50%
Maryland	2	2.50%
Massachusetts	1	1.25%
Michigan	2	2.50%
Minnesota	1	1.25%
Missouri	4	5.00%
Nebraska	1	1.25%
New Jersey	2	2.50%
New Mexico	1	1.25%
New York	3	3.75%
North Carolina	3	3.75%
North Dakota	1	1.25%
Ohio	7	8.75%
Oklahoma	1	1.25%
Oregon	1	1.25%
Pennsylvania	3	3.75%
Rhode Island	1	1.25%
South Dakota	1	1.25%
Tennessee	1	1.25%
Texas	4	5.00%
Utah	1	1.25%
Virginia	3	3.75%
Washington	3	3.75%
Wisconsin	2	2.50%
No Answer	4	5.00%
Total Count	80	