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Title Factors to consider in planning a Tailored Undergraduate Interprofessional Education and Collaborative Practice Curriculum: a scoping review Authors Pitout, Hanlie; B Occ Ther (UP) M Occ Ther (UL) Sefako Makgatho Health Sciences University, Hanlie.Pitout@smu.ac.za, Occupational therapy department. School of Health Care Sciences, Box 158. Medunsa, 0102 (012)5214019, 0721710462. https://orcid.org/0000-0001-6154-1378. Dr Adams, Fasloen: University of Witwatersrand, Fasloen.Adams@wits.ac.za, Occupational Therapy Department, University of Witwatersrand. Add qualification and contact numbers. https://orcid.org/0000-0001-6742-3727 Prof Casteleijn, Daleen: University of Witwatersrand, Daleen.Casteleijn@wits.ac.za, Occupational Therapy Department, University of Witwatersrand. Dr Sanet du Tout: University of Sydney, sanet.dutoit@sydney.edu.au. Occupational Therapy Department, University of Sydney https://orcid.org/0000-0003-1348-6313 Corresponding author: Pitout, Hanlie Hanlie.Pitout@smu.ac.za HPCSA number and OTASA membership number: Hanlie Pitout: OTASA number 4022 Ethical clearance number: University of Witwatersrand: M171445 Acknowledgments: The members of the research team for their assistance in the process of identification of articles for inclusion. Declaration of interest statement: The authors report no conflict of interest. The authors alone are responsible for the content and writing of this article. 1 Sources of funding: PhD grant Sefako Makgato Health Sciences University. Names and email address of suggested reviewers: Hester van Biljon Key words undergraduate students, interprofessional collaborative practice, programme, Joanna Briggs method, Four-dimensional curriculum model 3. The Multiple Choice questions (MCQs) 1.

For CPD purposes 10 multiple choice questions need to be created based on the manuscript 2. The correct answers must be indicated on the document 4. Plagiarism Check report / certificate 'Cross Ref' or 'Turn-it-in' or 'Authenticate' certificate must be attached with an acceptable level (usually 15% or less depending on the use of terminology in the manuscript and less than 15 words combined in one sentence/paragraph) FACTORS TO CONSIDER IN PLANNING A TAILORED UNDERGRADUATE INTERPROFESSIONAL EDUCATION AND COLLABORATIVE PRACTICE CURRICULUM: A SCOPING REVIEW Hanlie Pitout, Fasloen Adams, Daleen Casteleijn and Sanetta HJ du Toit Abstract Heath care students need to be practice-ready at qualification. Increased interest in and drive towards more collaborative practice necessitate consideration of factors unique to learning settings, to develop a tailored interprofessional education and collaborative practice curriculum, based on empirical findings. The Joanna Briggs Institute's scoping review methodology guided this study. Eight online databases were searched, with 66 articles included for full review. Charted data, analysed quantitatively, included year, context, study design and population. The four- dimensional curriculum framework model, consisting of future health care needs, interprofessional competencies, methods of teaching and institutional support, directed the 2 deductive analysis. Interprofessional education is best presented as a tailored curriculum, i.e. fitting the specific institution's needs, based on formal, rather than a voluntary, participation and presented longitudinally. Buy-in from institutional management assits to overcome barriers related to resourcing and staff participation. Policymakers of academic and clinical institutions could benefit from the summarized and synthesized evidence. Keywords: undergraduate students, interprofessional collaborative practice, programme, Joanna Briggs method, Four-dimensional curriculum model Introduction The increasing complexity of patients' needs has influenced health professional education and health policy and has strengthened a drive for preparing a "collaborative practice-ready" health workforce to respond to local health needs.1 Despite well-evidenced advantages of Interprofessional Education and Collaborative Practice (IPECP), the continued lack of implementation may be related to limited attention to factors that influence planning of a tailored IPECP curriculum. This scoping review initiated a research process for planning a university specific IPECP programme in South Africa. Literature describing IPECP curriculum planning in Africa is limited. A variety of published documents, e.g. interprofessional education and practice guides and competency frameworks from different countries e.g. Australia2, USA3 and Canada4, are available. However, despite the value of competency frameworks and practice guides for curriculum planning, these guides have a limited evidence base and mostly rely on field experts' experience5. Most models guiding curriculum development either use a linear approach or do not explicitly address IPECP competencies e.g. Kern curriculum design model, CIPP model, Biggs model6. In contrast, the four-dimensional curriculum framework (4DF) was specifically developed for IPECP7. The scope of the 4DF allows curriculum planners to shape the IPECP curriculum, offering the most comprehensive learning activities8. Although the 4DF has been applied in a range of studies9,10, none indicated its use to develop a tailored IPECP curriculum. When a university plans its IPECP programme, its unique context and how it differs from what available literature describes, should be considered. The 4DF guides tailored curriculum development to include (1) health care needs and available resources; (2) application of IPECP 3 competencies; (3) teaching, learning and assessment variations; (4) institutional support and available resources. In the African context, healthcare system needs and resources availability, differing IPECP competency applications and institutional and governing body involvement, instigate unique challenges. For example, health profession accreditation bodies or councils (e.g. the Health Professions Council of South Africa11, expect universities to include interprofessional education in their curricula. However, these professional accreditation bodies do not apply uniform guidelines on how IPECP should be incorporated into curricula of different professions9). The objective of this review was to identify the factors that affect planning of a tailored undergraduate IPECP curriculum by identifying, analysing and synthesising relevant articles. Methodology The five-step Joanna Briggs12 scoping review method was followed: Stage 1: Identifying the research question. The research question was: What is known, from the published, peer-reviewed literature about the factors that influence the planning of a tailored IPECP curriculum? Stage 2: Identifying relevant articles. A search strategy including eight databases (MEDLINE, CINAHL, Science Direct, PubMed, NexusIPE, Scopus, Google Scholar,) identified articles in English between 2011 and 2020. The Boolean search phrases were: "Interprofessional education" AND "Collaborative practice" AND/OR "Interprofessional learning" "Planning" OR "Development" "Undergraduate students" OR "Undergraduates" OR "Pre-Qualification students" OR "pre licensure" "Curriculum" OR "Programme" OR "Module" The inclusion criteria focused on undergraduate students who participated in university, in classroom, clinical setting, urban or rural areas. Included concepts were "interprofessional education", "interprofessional learning" and/or "collaborative practice". Only empirical research 4 articles in peer-reviewed journals were included. Articles were excluded if it focused on single activities (e.g. oncology ward rounds), postgraduate students, qualified health care professionals; and non-health care professionals' students. Articles based on secondary data with no evidence (e.g. guidelines or literature summaries) were also excluded. Stage 3: Study selection (please refer to PRISMA guide, figure 1) Selection was based on initial screening by title, then abstract and lastly full text. Two team members reviewed the articles and referred any disagreements to a third reviewer for the final decision for inclusion. Sixty-six articles were included and analysed. Figure 1 summarises the study inclusion process. [Please insert figure 1 PRISMA Flow diagram, here] Stage 4: Charting the data The author/s, publication year, title and journal information, country (study location), context (university or clinical setting), research method/study design, study population (e.g. students or experts, their level as juniors/seniors, their professions), were charted using Microsoft Excel. Stage 5: Collating,

Summarising, and Reporting the Results Quantifiable data were analysed descriptively and a deductive qualitative thematic analysis based on the 4DF7 directed the thematic analysis. Results Quantitative data are presented in a narrative descriptive format. (The included articles are identified with an * in the reference list.) Descriptive summary of demographic information Participants: Of the 66 articles scoped, 15 (23%) did not report on students but instead collected data from key role players, e.g. IPECP experts, or course developers. Year groups: Twenty (30 %) indicated that senior students participated, 16 (24%) did not specify the year group of participants and 16 (24%) focused specifically on first year students. Professions: Nursing was mostly represented at 42 (64%) followed by physiotherapy and medicine with 28 (42%) each, and occupational therapy and pharmacy at 26 (39%) each. A variety 5 and different combinations of professions participated, from at least two up to 10 professions per session. The most frequent number of professions involved in a session were up to six with 10 (15%) who had six, 9 (14%) with 5 professions, 8 (12%) who had three and four professions each. Number of participants: A vast variety of number of students were included in IPECP sessions, ranging from less than a 100 to 1 873 students. The majority, 24 (36%) reported on participation of less than 100 students, but seven (11%) involved more than 1,000 students. Fifteen (23%) reported on small group teaching, with student numbers varying between three to 14 students per group. Country: Only five (8%) from Africa met the inclusion criteria. The majority of the included, 48 (73%) were from countries with IPECP competency frameworks - 15 (23%) from USA and Australia, and nine (14%) from Canada and UK Geographical considerations: The geographical suitability for offering joint IPECP activities refers to the availability of a variety of professions at the same university. Universities who do not offer courses to a variety of health care professions relied on nearby universities to join their IPECP initiatives13. Only three (4%) focussed on exposure of students to rural communities 14,15,16, one described a mobile outreach exposure17 and one referred to exposure to a non-profit organisation18. The rest of the articles referred the local area where the university was located. Focus of the programme: The majority, 45 (63%) addressed interprofessional education in classroom settings. Eleven (16%) included only interprofessional collaboration, and the remaining 10 (7%) focussing on both. Six (8%) emphasized the importance of a theoretical model to guide planning. Descriptive summary of factors according to the four dimensions framework The data were analysed deductively using the 4DF. Findings are presented under each of the four dimensions. Figure 2 provides a visual representation of the dimensions and associated factors. [Please insert figure 2: Factors extracted and aligned with the Four Dimensional Curriculum Framework] Dimension 1: Identifying future health care needs - preparing and capacity building to ensure meeting the needs of the population. 6 The planning of an IPECP curriculum should address the training needs of the health work force and consider national policy related to health care worker training. Policy considerations: National policies address the political, social and cultural factors that influence health care worker training and practice. Positive results were achieved when a nationally coordinated approach, associated with national research and national leadership programmes, are in place 19,20. Health workforce training: An awareness of specific population health care needs, e.g. care contexts occurs and the number and variety of professionals needed, should inform training 20. IPECP can conserve resources when professionals are aware of their unique roles and duplication of services are prevented18. Dimension 2: Defining and understanding interprofessional capabilities required for future success in practice When planning to address the capabilities of the health care workers in the IPECP curriculum, environmental needs and staff requirements need consideration. IPECP Curriculum: IPECP should be part of a profession's core curriculum and not seen as optional21. The curriculum needs to be presented as a tailored programme based on the specific needs of the included professions22. To tailor the curriculum, planners need to identify shared prioritised themes for the specific professions involved, for example case studies where the role of the profession is overt23. Learning and teaching activities should be staggered and graded from theoretical appreciation, to placement learning, to examining the complexity of modern teamwork in a range of clinical settings6 – advances in students' knowledge and experience should reflect the increasing complexity of IPECP activities 24. Time frames for IPECP curriculum implementation were disputed25, 26 stressed starting in first year, to allow for exposure before biases develop. Imafuku et al., 27 found it advantageous to start with final year students who had established their own roles and could apply knowledge during placements. Setting/environment: needs to be supportive and conducive to learning. Positive safe spaces enable students to explore beliefs, learn to network professionally and to reflect on their own and others' personal and professional culture and values28, 29. Clinical settings need to allow students 7 opportunities to observe the real world and learn about the respective professions and their interprofessional roles30, 31 . Facilitator requirements: Planning IPECP is a complex and dynamic process32 requiring an interprofessional team actively involved in planning and development 33. IPECP facilitators/trained lecturers need to be both familiar with the institutions' environment, and skilled in facilitation and supervision 34,35 encourage self-identified facilitators who can role model teamwork and are passionate about IPECP. Dimension 3: Teaching, learning and assessment to address the development of core competencies Teaching, learning and assessment: Specific teaching and learning components need to be tailored to student variables (who), context (where), timing (when), content (what) and teaching methods (how). When grouping students, planners need to appreciate, acknowledge and maximise diversity24. It is advisable to use intentional grouping of students (focussed, heterogeneous) 36, in groups with students of four to five professions37. Learning activities need to ensure students appreciate each other's roles and contributions while being able to acknowledge both the usefulness as well as the limitations of their own knowledge38. Jernigan et al.39 therefore suggested authentic case studies, with significant clinical detail, necessitating

involvement of the interprofessional team for problem solving and encouraging clinical reasoning. Findings highlighted theoretical frameworks conducive to IPECP including Social Capital Theory 40 Socio Cultural Learning41, Problem Based Learning 42 Complexity Theory 24 and Constructivist Theory43. Andragogical strategies to consider incorporated blended, face-to-face, flipped classroom, interactive and experiential learning/teaching44. Rosenfield et al. 45 caution about the use of large-scale activities as it could limit the amount of meaningful interaction. Assessments need to be aligned instructional methods with required outcomes46. Students input: Senior students, especially in their final year of study, can provide valuable input to curriculum development47. Students could comment on internal factors (insight and motivation to participate) as well as factors outside the programme (logistics and timing), that impact students' participation, due to their lived experience of the profession-specific and IPECP curriculum48. Students identified authentic learning opportunities as experiencing problem solving in class, simulation and clinical practice. Students appreciated opportunities to socialise both formally and informally with peers from other professions 49. 8 Dimension 4: Supporting institutional delivery For long-term sustainability, IPECP needs to be part of the collective institutional vision50, be embedded on symbolic and organisational culture levels35 and part of a valued curriculum48. The characteristics of the institution and available resources requires special consideration. Characteristics of the Institution: Multi-tiered support is required from committed staff members, both academics and clinicians, institution leadership/management and governmental stakeholders50. Pragmatic considerations include faculty timetabling, structural complexities of university partnerships, institutional systems and processes51. Physical, attitudinal and human resources: IPECP is resource and time intensive, due to significant coordination required52. Centralised planning could address the logistics of implementation33. Focussed effort to provide resources or infrastructure, necessitates inclusion of strong administrative support24. Attention should be on delivery- capacity and overcome perceived challenges 53, 54. Discussion This review revealed a growing body of literature that describes factors influencing IPECP planning. Articles increased steadily between 2010 to 2020, reflecting the possibility that more universities incorporated IPECP on a larger scale into their curriculum; or more research conducted into the planning of IPECP curriculum. Analysis of the 66 articles found most originated in countries where government policies as well as competency frameworks for IPECP are in place. The benefit of having such support is acknowledged. In South Africa, as in many other African countries, the policies of IPECP is emergent. The descriptive summary of factors according to the four dimensions, revealed the dynamic interaction between the four dimensions. Specific professions, future healthcare needs, expected capabilities, content and teaching methods and available resources influenced one another. Local, national and international health and education policies influence IPECP application20. For a tailored curriculum, planners need to be cognisant of the purpose and content of the policies, while aligning the curriculum with the specific institution's mission and vision. In South Africa, the specific IPECP policy is being developed. ASSAF55 proposed to enable IPECP to become sustainably embedded in Health Professions Education in South Africa, a multi-stakeholder, 9 national working group should be formed to develop and guide the implementation of a strategic plan for IPECP. Worldwide there is an increasing demand for trained health care workers. IPECP is not as established in developing countries56. The quadruple burden of disease, insufficient resources and the influence of poverty and workforce shortages makes the need for IPECP even more pronounced34. In tailoring a curriculum the health work force needs of the specific included professions, individually and collectively, must be considered. For example, include the common conditions treated by the profession, to ensure that the IPECP activities are authentic and reflect practice needs57. In order to present tailored curriculum the IPECP core competencies, that guide the outcomes of the IPECP curriculum and therefore the selection of learning opportunities (activities, teaching methods and assessment methods), need to determine the duration and timing of the curriculum. Selected learning opportunities should suit the student characteristics for example the needs of the year group and combination of professions involved3. IPECP then facilitate the dual identity development of students as professional and as interprofessional team members 57,3. Facilitators need to understand the institution and the health care system where the programme is presented. Knowledgeable, enthusiastic facilitators who make student's involvement enjoyable, contribute to students' positive attitude to future interprofessional collaboration 58. Student involvement in curriculum planning increase IPECP programme acceptance and involvement59,60. Students who have experienced not only their own professions specific curriculum, but also the IPECP curriculum shared their experience of learning opportunities' relevance29. For the sustainability of any IPECP programme, buy-in from the specific institutions' management is vital to overcome logistical barriers, such as financing and provide the necessary resources35,48. Limitations of the scoping review Due to the abundance of available literature, important articles may have been inadvertently excluded, despite rigorous effort. Only five articles originating in Africa adhered to the inclusion criteria. African articles focus more on IPECP implementation and is evident of this as an emerging area of research. 10 Conclusion The results from this scoping review have the potential to guide the planning of a tailored IPECP curriculum for an African university. The discussion explains the intertwined factors for consideration by curriculum planners. Findings could support policymakers as it provides summarised and synthesised evidence on how to establish a tailored IPECP curriculum. Take home message Consideration of unique institutional contexts could guide planning a new or revised IPECP curriculum. A tailored curriculum will ensure that the healthcare needs of the local population is met and that students master interprofessional competencies using context-relevant teaching strategies. References Please note: articles included in the scoping review are indicated with a * 1. World Health Organisation. Framework for action on interprofessional education and collaborative practice.

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PMID: 23421342. 18 Figure 1: PRISMA flow diagram for scoping review Records identified through Identification database searching based on the title only (n=25704) Records removed due to not meeting refined inclusion criteria (n=24127). Remained 1532. Hand searched journals:: 33 added = 1565 Records after duplicates removed (n=1324) Screening Records excluded in Abstracts screened abstract stage (n=1324) (n=645) Eligibility Full-text articles assessed for eligibility (n=657) Full-text articles excluded (n=585) Included Studies included (n=72) 19 Framework The four quadrants in the middle refers to the four dimensions of the Framework e.g. D1 is dimension 1. The textboxes on the outside refer to the factors identified in the analysis of the articles and described in detail in the text. 20 Table 1: Summary of included publications Author names and year Name of article Main concept (IPE, IPECP or CP) Name of journal QL= Qualitative MM= Mixed methods Research approach and method QN= Quantitative Frequency Longitudinal (L); twice (T)or once off (1x) Participants and (year level) N= nursing; M=medicine SW= social work, OT= occupational therapy, PT=Physiotherapy, SP= speech therapy D= Dentistry HN/D: Human nutrition/Dietetics Pha= Pharmacy, RD: radiography And [group size specified] Country and Context (university /clinical setting/ community area 1 Alinier et al. 2014 Immersive Clinical Simulation in Undergraduate Health Care Interprofessional Education Simulation (IPE) Clin Simul Nurs QN: quasi randomised control group L: 3 years 237 N, Pha, RG, PT, paramedic, SW [+/- 8 in group] UK: British university 2 Anderson et al. 2016 Evaluating an interprofessional education curriculum: A theory-informed approach Conceptual frameworks, theory (IPE) Med. Teach. MM: Meta-analysis L: several years Different stakeholders: 10 professions students, teachers, practitioners, patients, carers UK: university, clinical 6 Berger et al. 2017 Anchoring interprofessional education in undergraduate curricula: The Heidelberg story Change management (IPE) J Interprof Care QL: Case study 1X – pilot study Faculty: IPG and Medical Germany: Heidelberg University 21 7 Botma, Y. 2019. Consensus on interprofessional facilitator capabilities. Facilitator capabilities (IPECP) J Interprof Care QN: Delphi study IPECP experts South Africa: University of Free State 10 Cerbin- Koczorowska, , 2019 As the twig is bent, so is the tree inclined: a survey of student attitudes toward interprofessional collaboration supported with the curricula analysis Curriculum (IPECP) J Interprof Care QN: cross-sectional survey-based L: 3 years 502 final year students: Pha, M Poland: Poznan University of Medical Sciences 9 Chicorelli et al 2016 Canadian student leaders' perspective on IPE: A consensus statement Student's input (IPE) J Interprof Care QL: focus group 1X 12 student leaders N, SW, 8 Universities Canadian Universities 14 Cradock et al. 2013 A top-down approach impedes the use of theory? Theory (IPE) J Interprof Care QL: Interviews: Grounded theory 1X IPE curriculum developers UK: 8 Universities 15 Croker et al. 2016 Educators working together for IPE : From "fragmented beginnings" to "being intentionally IP" Educators attitude (IPE) J Interprof Care QL: interviews and focus groups: collaborative dialogical inquiry 1X M, N, radio, SW, OT, PT, SP, HN: IPE educators Australia: Newcastle University 18 De Vries-Erich et al., 2017 Identifying facilitators and barriers for implementation of IPE: medical educators in the Netherlands SWOT: Barriers and enablers (IPE) J Interprof Care QL: Interviews 1X 14 health educators: professions not specified Netherlands: Amsterdam different universities IPE- SIG 19 Engel et al.. 2017 A Power Experience: A Phenomenological Study of Social interaction (IPC) J Prof Nurs QL: Interviews Hermeneutic phenomenology 1X 17 students M (1st + 2nd , N: 3rd and 4th year Canada: Ontario: two Universities 22 Interprofessional Education 20 Fitzsimmons et al. 2014 A learner developed longitudinal interprofessional education curriculum Student input (IPE) J

Interprof Care QN: pre-post-test experimental 1X 480 1st years: M, N, D, Pha USA: University: California 21 Fook et al. , 2013 Taking the long view: exploring dev of IPE Logistics especially leadership (IPE) J Interprof Care QL: exploratory case study L: 15 years 19 key informants biochem, clinical sciences, N, OT, PT, podiatry, RD, SW UK: London: service providers 23 Fougner + Horntvedt, 2011 Students' reflections on shadowing interprofessional teamwork: a Norwegian case study Clinical learning (IPC) J Interprof Care QL: focus groups 1X 2nd year students: OT, PT, N, 30 reps [3 in group] Norway; Oslo: hospital and homes 24 Gilligan et al., 2014 Recommendations from recent graduates on improving IPE in university programs Student input (IPECP) BMC Med. Educ QL: focus groups 1X 68 recent graduates, 12 focus groups Australia: Perth hospital 26 Hallam et al. 2016 Do commencing students differ in IP learning and practice attitudes Team and group (IPE) BMC Med. Educ QN: GPSES, ATCHTS, IEPS, International big 5 mini markers test 1X 210 N, paramedic 1st year students Australia, Melbourne, University 28 Hean et al. , 2012 Theoretical insights into IPE AMEE Guide no 62 Theory (IPE) Med. Teach. QL: case study 1X AMEE Guide UK: University Bournemouth, Southampton, Birmingham 29 Homeyer et al., 2018 Effect of IPE on Medicine and Nursing Curriculum implications (IPECP) BMC Nursing QN: Delphi 1X 25 experts Germany: University, Greifswald 23 30 Imafuku, et al, 2018 What did first-year students experience during their IPE? A qualitative analysis of e-portfolios Learning (IPE) J Interprof Care QL: exploratory case study: Phenomenography: analysis of reflections 1X 26 1st year students: M, N, Phar, N, PT, OT [8-9 students in group] Japan: University and clinical areas: Showa 31 Jernigan et al, 2018 Teaching for Practice: The Impact of a Large- Scale Interprofessional Foundational Program TeamSTEPPS (IPE) J Allied Health MM: Questionniares 1X 715 students of 15 professions: OT, PT, SLPA, HN/D, M, N, Pha, SW, 1-3 rd years USA: University of Kansas 32 Jorm et al. , 2016 Using complexity theory to develop Learning and theory (IPE) BMC Med. Educ MM: questionnaire and analysis of video and case study 1X 1220 students different year groups: Rad, M, N, OT, Pha, PT, ST, Exercise Physio [5 – 6 students per group] Australia: University: Sydney 33 Junod Perron, et al. 2014 Needs assessment for training in interprofessional skills in Swiss primary care: a Delphi study Themes and skills (IPC) J Interprof Care QN: Delphi study: Electronic survey 1X 12 categories of health professionals: practitioners, trainers, trainees Switzerland: University and Hospitals: Geneva 34 Karuguti et al. , 2017 Analysing the cognitive rigor Assessment (IPE) J Interprof Care QL: Quantitative content analysis: DOK framework 1X Curriculum for PT, OT, Psych, N, Natural Medicine, Sport Sciences South Africa: University: Western Cape 36 Kickett et al. 2014 A Model for Large- Scale, Interprofessional, Compulsory Cross- Cultural Education with an Indigenous Focus Teaching (IPE) J. Allied Health, QN: survey with qualitative and quantitative data 2X 1570 students, 1st years, 50 groups, 19 professions N, Public Health, PT, Pha, S P, N, Psych, oral health others Australia, Perth University Curtin 37 Kururi et al. 2014 Professional identity acquisition process model in Professional identity (IPE) J Interprof Care MM: model dev and testing L: 9 years 3rd years: nursing, lab science, PT + OT Japan, Gunma University 24 interprofessional education using structural equation modelling: 10-year initiative survey 38 Laraimore et al., 2017 Impact of team composition Team composition (IPE) J Interprof Care QN: survey 2 group quasi experimental: RIPLS and IEPS L: 6 years 991 Students 5 – 10 professions: D, N, OT, PT, SLP, Phar, Psych, Exercise Science USA: Universities in Arkansas 39 Lehrer et al., 2015 Peer-led problem- based learning in interprofessional education of health professions students Students input (IPE) Med. Educ online QL: Case control study design: IEPS 1X M + Pha: 97 students [10 – 14 students in group] USA, University and hospital, Arizona 40 Levett-Jones, 2018 Case Studies of Interprofessional Education Initiatives From Five Countries Case studies of application (IPC) J Nurs Scholarsh MM 1X Comparison of settings with different types and numbers of students in each Australia: University of Technology Sydney and 6 others 41 Lockeman et al., 2017 Outcomes of Introducing Early Learners to IPE competencies in Classroom Setting Socialisation (IPE) Teach Learn Med. MM: case series, students self- assessment with SPICE-R2 pre and post, Student peer assessment, Faculty Assessment 1X 1st years: 555: D, dent hygiene, M, N, OT, PT, Pha [5-6 students in group] USA, University Virginia 42 Mathews et al, 2011 Building capacity in Australian National coordinated approach (IPECP) Aust Health Rev. QL: 27 interviews and 2 focus groups 1X key stakeholders in Higher Edu and health Australia, University in Sydney 45 Mellor et al., 2013 Just working in a team was a great experience... - St perspectives on the learning experience of an IPE program Students experiences (IPE) J Interprof Care QL: interviews: Interpretative phenomenological analysis 1X M, Pha, N, OT, PT [6 – 8 students in group] Australia, University: Queensland 25 46 Michalec et al. , 2017 Health Professions Students' Perceptions of Their IPE program Students perceptions (IPECP) J Allied Health Case study: interviews 2X 20 students from 6 professions (Couple and family therapy, M, N, OT, Pha, PT) 1st and 2nd years USA: University Delaware 48 Muller et al., 2019 The value of interprofessional education in identifying unaddressed primary health-care challenges in a community: a case study from South Africa Primary health care (IPECP) J Interprof Care QN: case study L; 4 years Students: M, OT, PT, SLPA, HN/D, SW, N, Rad, Pod South Africa, Stellenbosch University: community, rural area O'Hara, et al., 2018 Development of an e-learning programme to improve knowledge of interprofessional education. British Journal of E-learning in IPECP Nursing, 27 (21), 1242-1245. QN: case study 1X. Students: M, OT, PT, SLPA, HN/D, SW, N, RD, Podiatry Ireland: Queen's University Belfast 50 Olson et al., 2016 Reimagining health professional socialisation Professional ID (IPE) Health Sociology review QL: interviews L: first year 19 students: 1st years, 6 professions: OT, PT, podiatry, Therapeutic recreation, Traditional Chinese medicine, Australia, University, Queensland 52 Pardue, 2013 Not left to chance: curriculum framework Curriculum content dual ID (IPECP) J Interprof Care QL: appreciative enquiry 1X N, OT, Applied exercise science, athletic training, dental hygiene, USA, Portland University 53 Paslawski, et al. 2014 Action, reflection and evolution: a pilot

implementation of IPE across 3 disciplines Less successful (IPECP) J Res Interprof Pract Educ Action research 1X OT, ST, PT curriculum developers Canada, University, Alberta 26 54 Prast et al., 2016 Practical Strategies for Integrating IPE Faculty (IPECP) Occup. Ther. Health Care QL: focus groups 1X OT, N, SW, Med Lab [8 -12 students in group] USA, University, Saginaw Valley 55 Reitsma et al. 2019 Health students' experiences of the process of interprofessional education: a pilot project. IPE process J Interprof Care MM: sequential 1X N, Pha, HN/D, Ps, SW, HM South Africa: North West University. 56 Rosenfield et al., 2011 Perceptions versus reality Student expectations (IPE) Med. Educ QL: exploratory case study, focus groups 2X M, Pha, D, OT, SW Canada: University; Ontario, 57 Rotz et al., 2015 Exploring first-year pharmacy and medical students' experiences during longitudinal IPE IPE intro early or late (IPE) Curr Pharm Teach Learn QL: focus group, 6 students per group 1X 18 Pha and M, 1st year students [3 students in a team] USA, University, Philadelphia Stanley & Stanley, 2019 The HEIPS framework: Scaffolding interprofessional education starts with health professional educators Educators framework (IPE) Nurse Education Practice QL: Interpretive phenomenological, individual interviews 1X 26 educators Perth, Western Australia, 5 Universities 58 Steketee et al., 2014 Interprofessional health education in Australia: 3 project for curriculum Curriculum (IPE) Appl Nurs Res MM: surveys and interviews 1X 9 Univ, NGOs and industry bodies Australia: Universities: 59 Skolka et al. , 2020 Attitude adjustments after global health inter- professional student team experiences Mobile outreach (IPC) Md Med J MM: questionnaire and survey 3X 45 Students, first to 4th year: M, Physician assistants, N USA: Penn State University Community involvement 62 Tartavoulle et al., 2016 Using the IDEA framework in an IP didactic elective Dual ID : social (IPE) J Interprof Care QN: RIPLS, IPEC 1X Allied H, D, M, N, Pha and Public Health [10 students in group] USA, University, New Orleans 27 course; roles and responsibilities 66 Walker et al., 2019 Students' experiences and perceptions of interprofessional education during rural placement: A mixed methods study Rural placement learning opportunities (IPC) Nurse Educ Today MM: RIPL and interviews 1 X 60 students of Allied Health, M, N, Midwifery Australia: Monash University Rural area 68 Ward et al., 2016 Development, implementation and evaluation of longitudinal IPE Longitudinal (IPE) J Res Interprof Pract Educ QN: Pre post test 1X N, M. Pha, SW, Diet [6-8 per team] USA, Washington university 69 Waterston, 2011 Interaction in online interprofessional education case discussions Online (IPECP) J Interprof Care MM: survey, online discussions, care management plans 1X 490 students, 77 facilitators, D, M, N, OT, Pha, PT [8-9 students] Canada, University, Toronto 70 West, et al. 2016 Implementation of IPE in 16 US medical schools: Common practices, barriers and facilitators Barriers and enablers (IPE) J Interprof Educ Pract MM: observational cross sectional: survey 1X 16 Medical Schools USA: Universities 72 Wilbur + Kelly, 2015 Interprofessional impressions among nursing and pharmacy students Students attitudes, beliefs, values (IPE) BMC Med. Educ QL: focus groups and interview 1X 200 students, N and Pha, year not indicated Middle East: Qatar: University 28