

The Role of Interprofessional Education in Training Healthcare Providers for Integrated Healthcare: A Scoping Review

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Abstract

BACKGROUND Longer lifespans and growing chronic conditions are driving change in healthcare systems and prompting the shift towards integrated care. These new models of care require new models of learning; interprofessional education and training are identified as key solutions. How IPE supports the development of the current workforce for integrated care remains unclear.

PURPOSE The aim of this research is to explore the role of interprofessional education in training current healthcare providers for integrated healthcare.

METHOD Guided by the Arksey and O'Malley (2005) methodological framework for scoping reviews, searches were conducted in CINAHL, MEDLINE, ProQuest Nursing and Allied Health, and Scholars Portal electronic databases. Inclusion and exclusion criteria were applied and data from the relevant articles were categorized and reported narratively.

RESULTS The analysis of 32 articles highlighted four key themes: (1) IPE is needed as a foundation for working in integrated care; (2) IPE builds competencies for integrated care; (3) IPE acts as a catalyst for improving team functioning and patient care; and (4) IPE generates practice change among disciplines and agencies.

CONCLUSIONS IPE plays a unique and important role in training health and social care providers to work in integrated care and can be described metaphorically as “a bridge to integrated care.” Findings offer important implications for continuing IPE and interprofessional practice within integrated models of care.

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Implications for Interprofessional Practice

- This scoping review identifies the need for continuing IPE for healthcare professionals across various practice settings to work in integrated care.
- Continuing IPE in the workplace should be context specific – focused on unique patient populations and practice setting (e.g., cross sector).
- Unlicensed and non-clinical staff should be included as members of the integrated care team.
- Approaches to IPE should be adaptive in keeping with changing roles of health and social care providers (e.g., in relation to COVID-19).
- Dedicated time in the workplace through IPE builds trust and confidence among team members working in integrated care.

Introduction

Worldwide, longer life expectancies and increasing chronic health conditions are increasing the burden on current health systems (World Health Organization [WHO], 2015a). As the demand to deliver multiple, complex interventions continue to grow, present care delivery models are becoming increasingly fragmented and unable to meet health care needs (WHO, 2010; WHO, 2015a). Without changes to current health systems, care provision will be inefficient and unsustainable with people unable to access high quality care (WHO, 2015a).

The WHO's (2015a) global strategy on people-centred and integrated health services calls for a paradigm shift in the way health services are delivered to meet the challenges faced by health systems worldwide. Integrated health services have been proposed to manage and deliver care that promotes continuity in health promotion, prevention, and treatment across various sectors throughout an individual's lifespan (WHO, 2015a).

There is recognition that these new models of care require different models of learning, as there are gaps in current healthcare providers' knowledge to support integrated health service delivery (Chehade et al., 2016; Stein et al., 2021). Education must be considered alongside workforce planning to avoid negative impacts on peoples' health and ensure the well-being of the current and future workforce (Barr, 2012; Fraher and Brandt, 2019; Stein et al., 2021; Tomblin Murphy et

al., 2019). A growing body of evidence emphasizes that special attention is needed to reorientate the healthcare workforce and shift their focus to work in teams that are patient focused to truly establish integrated care models (Busetto et al., 2018; Stein, 2016; WHO, 2015a). Healthcare providers require different competencies to work in integrated care systems yet, healthcare professionals have traditionally not been educated to share information or communicate within and across health and social sectors (Stein, 2016). The five integrated care competencies include: patient advocacy, effective communication, teamwork, people-centred care and continuous learning (Stein, 2016). For over a decade, experts have argued that professionals require education and training to apply knowledge, engage in critical reasoning and ethical conduct to participate in patient and population-centred health systems (Frenk et al., 2010; Suter et al., 2009). As with the Ebola virus outbreak, the recent Coronavirus pandemic highlights the need to understand how to prepare healthcare providers to work in new roles, practice environments, and integrated care systems (IFIC, 2020; WHO, 2015a).

Background

Integrated care

The concept of integrated care is widely discussed in international healthcare literature, yet it is not well-understood by current healthcare practitioners. There are multiple definitions and approaches which are derived from various professional perspectives and care sys-

tems (Goodwin, 2016; Kodner, 2009). Integrated care is broadly understood as a people-centred approach to address fragmented care systems through better coordination of care around people's needs (Goodwin, 2016). More specifically integrated care is "a coherent set of methods and models on the funding, administrative, organizational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the cure and care sectors... [to] enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients with complex problems cutting across multiple services, providers and settings" (Kodner & Spreeuwenberg, 2002, as cited in Kodner 2009, p.7).

Integration may take various forms (e.g., horizontal, vertical, sectoral, people-centred and whole-system integration) and levels (e.g., macro, meso, micro) depending on the particular care goals, patient population, and practice context (Goodwin, 2016; Letzt, 1999). The principle aim of integration is to deliver care in new ways such as across different organizations and settings, joining up hospital and community-based services, physical and mental health, and health and social care (Charles, 2021). Integrated care represents a fundamental shift in the way the health and care systems are organized. Healthcare professionals working in integrated care systems must understand new ways of working collaboratively within and across organizations, and how their specific roles and those with whom they work are impacted (Goodwin, 2016; Stein et al., 2021). Integrated care requires relationship building within interprofessional teams and with individuals as active partners in their care (Goodwin, 2016).

Interprofessional education

Interprofessional education (IPE) and training are recognized as having a crucial role in managing the challenges associated with changing health systems and preparing staff to work in integrated care environments (Nicholson et al. 2013; Stein, 2016; Suter et al., 2009; WHO, 2010; WHO, 2015b). According to the Centre for Advancement for Interprofessional Education (CAIPE, 2002), IPE occurs when "two or more professions learn with, from and about each other to improve collaborative practice and quality care" (p.1). IPE is discussed in the literature as essential in providing a practice ready workforce (WHO, 2010). In doing so, IPE is primarily identified as a collaborative practice strategy that must

be considered in accordance with local health system needs to facilitate integrated care models (WHO, 2010). A systematic review of 37 qualitative studies conducted by Chung et al. (2012) examined organizational determinants of interprofessional collaboration (IPC) in integrative health care. In their review, IPE was identified as critical for mutual referral and enhancing teamwork in the integration of biomedicine doctors and traditional, complementary, and alternative medicine practitioners (Chung et al., 2012).

IPC is defined as "a type of interprofessional work which involves the different health and social care professions who regularly come together to solve problems or provide services (Reeves et al. 2010, p. xiii). IPC is recognized as a fundamental competency necessary to work in integrated care systems (Goodwin, 2016). A growing body of evidence indicates that IPE supports IPC across various health and social sectors with diverse patient populations (Reeves et al., 2016). Despite increasing awareness of IPE as a strategy that is required for integrated health services to be successful, there is a lack of understanding about how it is implemented within various integrated care practice contexts (WHO, 2015b).

IPE literature has primarily focused on describing how the curriculum for students needs to change to prepare them to work in new models of care (Kaprielian et al., 2013). However, it is modest outcomes from IPE in student curricula that attribute to IPE being criticized as having little impact on patient or system outcomes (Barr, 2012; Fraher and Brandt, 2019). While pre-licensure IPE creates motivation and enhances skills, continuing interprofessional education immediately improves quality of care when it is employment-based between experienced participants (Barr, 2012). Findings from recent reviews and evaluations demonstrate that post-licensure IPE goes beyond meeting immediate outcomes to create practice change (Barr, 2012). Minimal consideration has been given to how the current workforce can be trained to transform care (Fraher et al., 2013). Little is understood about the key elements of effective continuing IPE and how these elements contribute to desired learner outcomes and in what setting (Rogers et al., 2018). How IPE supports the development of the current workforce for integrated care remains unclear. A comprehensive review that identifies and examines existing research concerning the role

that IPE has in preparing current healthcare providers to work in integrated care is needed. This scoping review addressed the following research question: What is the role of IPE in training current healthcare providers for integrated healthcare?

Method

Research design

A scoping review was most appropriate to answer the research question. Scoping reviews allow for more general questions to be answered through an exploration of a breadth of relevant literature (Arksey & O'Malley, 2005; Peterson et al., 2017). The purpose of a scoping review is to provide an overview of the topic without a critical synthesis of evidence (Peterson et al., 2017). Scoping reviews are useful in mapping the key concepts that underpin a research area that may be complex or that has not previously been reviewed (Arksey & O'Malley, 2005). By rapidly summarizing what is known about the topic, scoping reviews identify gaps in existing literature (Arksey & O'Malley, 2005; Peterson et al., 2017). A scoping review is particularly useful given that the role of IPE in preparing healthcare providers to work in integrated care models is a broad topic that has not been extensively examined. This scoping review was guided by the methodological framework of Arksey and O'Malley (2005) and included the following five stages: (1) identifying the research question, (2) identifying relevant studies, (3) selecting the studies, (4) charting the data, and (5) collating, presenting, and summarizing the results.

Search strategy

The search strategy was guided by the research question and validated through consultation with an academic librarian to determine the most appropriate databases, specific MeSH terms and keywords to capture relevant literature on the topic of interest. A comprehensive search was conducted in four electronic databases: CINAHL (Ebsco), Ovid MEDLINE, ProQuest Nursing and Allied Health, and Scholars Portal. Search terms were combined using the BOOLEAN operators and included interprofessional education (or training or program), interdisciplinary education (or training or program), integrated care (as a keyword) and integrated health care delivery. Given the breadth of the review question, multiple publications were considered relevant for answering the research question including primary stud-

ies, reviews, and non-research publications (Arksey & O'Malley, 2005). The reference lists of identified articles selected from the full-text publications were searched for any additional sources of evidence.

Identification of relevant studies

The inclusion criteria for the articles were: (1) peer-reviewed publications including primary research studies, review papers, short reports and position papers; (2) participants were post-licensure health and social care providers (regulated or unregulated) from any sector; (3) IPE was conceptualized as being consistent with the CAIPE (2020) definition of IPE; (4) specific reference to IPE within an identified integrated care model or program (e.g., sectoral, horizontal); (5) published in English between January 2000 and February 2020. All study designs, including review papers, were included as scoping reviews address broad research questions of which many designs may be applicable (Arksey & O'Malley, 2005). Exclusion criteria were: (1) articles that only discussed IPE for pre-licensure students as the focus of this review is on current health care professionals; (2) articles specific to pediatric populations as the focus was on HCWs working with adult patient populations; and (3) sources from grey literature.

The PRISMA (2009) flow diagram (Figure 1) highlights the search process used to identify appropriate papers. The search yielded a total of 672 articles that were then exported and uploaded to Zotero 4.0.29.15 (Corporation for Digital Scholarship, VA, USA). Duplicates were removed using the program software and manually prior to screening for eligibility. The titles and abstracts of the first 10 articles were independently screened by reviewers (SB and KL) against the inclusion and exclusion criteria to identify any discrepancies. Once consensus was achieved through discussion, the remaining articles' titles and abstracts were reviewed. The citations of studies eligible for full-text review were uploaded to an Excel Spreadsheet (Redmond, WA, USA). The full texts of the selected citations were assessed against the inclusion criteria in detail by two independent reviewers (SB and KL). Where applicable, reasons for exclusion of full-text papers were recorded in the Excel Spreadsheet (Redmond, WA, USA). Any discrepancies between reviewers SB and KL that arose throughout the selection process were solved through discussion including cross-comparison of reasons for inclusion/exclusion. Main reasons for exclusion included: papers that did not refer to a specific



PRISMA 2009 Flow Diagram

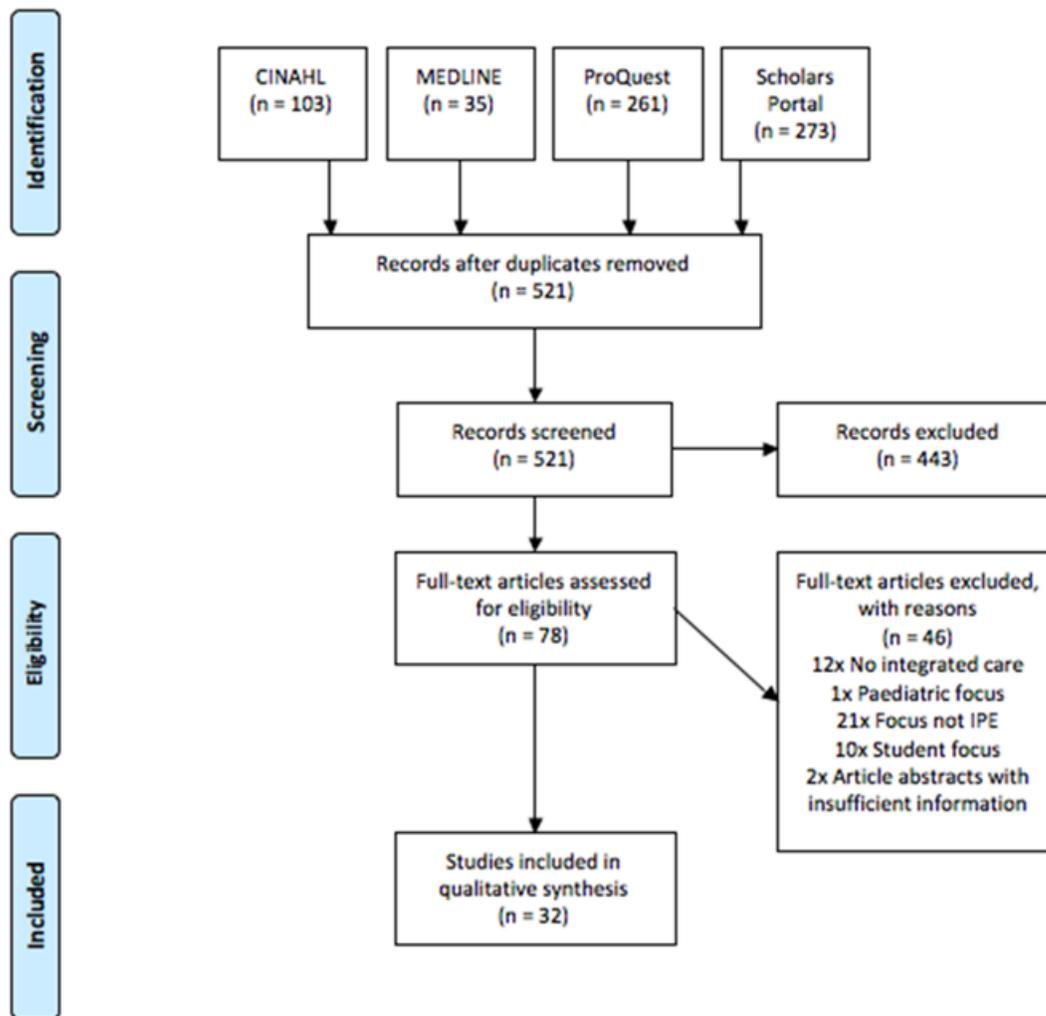


Figure 1. Searching and screening results

integrated care setting, model, or program (n=12), focus was not on IPE (n=21), included only pre-licensure students (n=10), pediatric focus (n=1), abstracts had insufficient information (n=2). If agreement could not be reached, further discussion with a third reviewer (SE) was used to resolve discrepancies.

Charting the data

Data were charted independently by two reviewers (SB and KL) using a data extraction form based on the review question. Data extraction included: the year of publication, country, discipline of first author, publication type, setting and category of health care workers, description of the type of integration, and results related to the role of IPE in integrated care.

Extracted data pertaining to IPE, integrated care, and results were categorized independently by reviewers SB and KL. Categorization started with ten articles for each subject to ensure consistency and resolve any discrepancies early with discussion. Any discrepancies were resolved through further discussion with a third reviewer (SE). A qualitative descriptive approach using thematic analysis was used to synthesize the study's findings (Braun & Clarke, 2006). Sub-themes and themes were identified from the categorized data using an iterative process.

Results

Results from the analysis and synthesis of the included papers are presented in two sections. The first section provides an overview of the included papers. The sec-

ond section presents the key themes emerging from the included studies describing the role of IPE in preparing health care providers to work in integrated care.

Overview of included papers

A total of 32 papers met the inclusion criteria. These publications were from eight countries: Australia, Canada, China, India, Italy, Netherlands, the UK, and the USA. Nearly half (47%) of the included papers were from North America (13 from the United States, two from Canada). Of the articles included 14 were research studies of various designs (five mixed methods, four qualitative, three case studies, and two quantitative studies). The additional 18 articles included review papers, program descriptions, short reports, and one position paper. Primary authors represented multiple disciplines of nursing (five) and medicine (five), while three authors were from social work, psychology, and health policy backgrounds. Four primary authors were from public and social health disciplines and one author from sociology, psychiatry, dentistry, social wel-

fare, and pharmacy, social health, and general practice and elderly care.

Various health professions were represented in the included papers. Articles mainly included a range of health professions such as physicians, nurses, managers, social workers, physical therapists, pharmacists, psychologists, and occupational therapists. Other professions/roles discussed less frequently were dietitians, educators, dentists, case managers, chiropractors, speech therapists, optometrists, ophthalmologists, public health staff, and medical assistants. Community-based providers from various roles were identified in 4 papers. Interdisciplinary professions included economics, policy, and communication science. Only two articles included patients as participants (Chung et al., 2012; Lennox & Anderson, 2012).

Multiple practice settings, patient populations, and descriptions of the types of integration were represented in the included articles. Table 1 provides an overview of the included articles.

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Chegade et al., 2016/Australia/ Medicine	Review/ synthesis	MSK Conditions/MDS, Nurses, Rehab staff, Chiropractor	Hospital and community	<ul style="list-style-type: none"> • IPE related to MSK integrated care may be an optimal way of promoting IPC among MSK healthcare providers • Need for targeted IPE to practicing HCWs through continuing education and professional development programs
Chung et al., 2012/ China/Public health	Systematic review	Public health & primary care/Managers, allied health professionals, patients	Biomedical MDs and traditional and complementary alter- native medicine prac- titioners (TCAMP)	<ul style="list-style-type: none"> • IPE for BMD and TCAMP is critical for mutual referral and teamwork • Formal team meetings as offer a forum of continuing IPE
Cramm & Niebor 2011/The Nether- lands/Health policy	Quantitative/ cross sectional survey	Stroke teams/nurses, physical therapists, physicians, occupational therapists, speech thera- pists, social workers, dieticians, managers	Stroke teams across hospitals, nursing homes, and rehabili- tation centers	<ul style="list-style-type: none"> • IPE was a strong contributor to inter-professional stroke team functioning. • Communication and role understanding facilitated team functioning

Table 1. *Overview of included articles*

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Cubic et al., 2012/ United States/Psy- chology	Descriptive report plus survey	Patient-centered medical home (PCMH) /Psychology trainees and family medicine resi- dents.	Academic and PCMH	<ul style="list-style-type: none"> IPE improved communication and team dynamics; enhancing residents' understanding of roles ability to work with other professionals. IPE is part of a larger comprehensive training program for integrated care
Dubus & Howard, 2016/United States, Social Work	Qualitative study	Academic-Hospital- Community/ Educators and practitioners from various disciplines	Academic, hospi- tal and community agencies	<ul style="list-style-type: none"> Professionals currently in the field have not been trained to work inter-professionally Academic institutions should co-develop relevant IPE curricula with health providers and agencies
Fraher & Brandt, 2019/United States/ Medicine	Program description	Multiple patient popula- tions/care continuum/ MDs, nurses, optome- trists, ophthal-mologists, other professions	Integration of work- force planners and IPE educators	<ul style="list-style-type: none"> Need for new IPE models of learning in the context of practice IPE to include non-traditional community-based providers
Harnagea et al. 2017/Canada/Public health	Scoping review	Oral health, primary care/dental and other healthcare professionals	Oral health and primary care	<ul style="list-style-type: none"> Lack of knowledge about integrated care practices among dental and non-dental care providers. Facilitators of integration Include: supportive policies, resource allocation, IPE, collaborative practices between dental and other healthcare professionals
Kuipers et al., 2013/ Australia/Population and Social health	Short report	All settings -complex health conditions	Integrated learning for health workforce	<ul style="list-style-type: none"> Complexity in healthcare requires more flexible, diverse, less linear approaches to education Create opportunities for HCWs to learn from each other across profes- sional boundaries and collectively solve complex problems Workforce training in response to complexity should be contextually relevant
Landman et al., 2014/United States/ Health policy	Description of integrated models of care	Frail elderly/MDs, hos- pitalists, nurses, social workers, mental health workers, case managers, nurse practitioners Hospital at home/nurses, MDs Primary care clinics/ MDs, health coaches	Hospital-to home Primary care to home	<ul style="list-style-type: none"> Few existing HCWs have had op- portunities to work collaboratively in either the classroom setting or in the clinic Most health professions still edu- cated in silos Cross-train HCWs to create solu- tions of high value to the communi- ties they serve.

Table 1 (cont'd). *Overview of included articles*

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Lapidos & Ruffolo, 2017/United States/ Social work	Program description/ evaluation (quantitative)	University Office of Continuing Education/ working professionals in numerous disciplines	Integrated behavioral health and primary care	<ul style="list-style-type: none"> Continuing IPE serves a critical role in preparing workforce for integrated care Digital IPE programs can support the learning needs of working professionals Most helpful aspects of the program: learning from other professionals, gaining a deeper understanding of their own professional roles; gaining knowledge about integrated care models
Lennox & Anderson, 2012/United Kingdom/ Medicine	Program description/ evaluation (mixed-methods)	Primary care/HCW students, HCWS, patients (trainee general practitioners (GPs), student health visitors, practice nurses and newly qualified social workers)	Clinical and academic	<ul style="list-style-type: none"> LMiPE demonstrates improvements in outcome-based team working, Learners inspired to promote teamwork, improve interagency communication and make greater use of allied services Positive regard for each other's professions
Lette et al., 2020/ The Netherlands/ Medicine	Case study	Community care for older adults/Home care nurses, case managers, social worker, geriatric practice nurses, management staff	Health and social care	<ul style="list-style-type: none"> Improving communication between health and social care professionals is the first step in improving integrated care. Interprofessional meetings & workplace visits increased awareness of one another's roles, responsibilities, and expertise.
Lucas et al., 2016/ Australia/Nursing	Qualitative	Chronic disease/ GPs, practice nurses (PNs), practice managers (PMs) and allied health professionals	Acute care and community	<ul style="list-style-type: none"> Need for ongoing staff education and knowledge of local resources Lack of role clarity of nurses' role and coordination with GPs and other general practice staff
Leutsch & Rowett, 2015/ Australia/ Pharmacy	Qualitative	Post-graduate pharmacy program/pharmacists, junior MDs, nurses clinical nurses, nurse educators	Academic and practice	<ul style="list-style-type: none"> IPE learning practice module enhanced pharmacists interprofessional communication skills. IPE added value to pharmacists' confidence and professional contribution in health care teams
Miller et al., 2014/ United Kingdom/ Health services management	Mixed methods	Variety of health and social integrated care programs/ operational management staff, social work, nurses, general practitioners	Hospital and home, community-based health and social care	<ul style="list-style-type: none"> Workplace IPE programs can support those working at a strategic level to develop commitment and skills to collaborate across professional and agency boundaries.

Table 1 (cont'd). Overview of included articles

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Minniti, 2019/ United States/ Psychology	Literature synthesis	Multiple settings popu- lations/ Psychology, nursing, medicine, and pharmacy	Behavioral and medi- cal health care teams	<ul style="list-style-type: none"> • Need for psychologists to educate other HCWs about the role and contribution of psychologists as part of interprofessional care and education. • CE and IPCE should reflect the distinct and overlapping characteristics of behavioral and medical professions.
Morano & Dami- ani, 2019/ United States & Italy/Social welfare	Program de- scription	Graduate School of Health Economics and Management/ Medicine, nursing, economics, communica- tion science, pharmacy, psychology, law, and physiotherapy	Systemic integration	<ul style="list-style-type: none"> • Interprofessional learning is a precursor to effective and efficient collaborative care. • Sharing values and content between direct care professionals operating at the micro level and those professionals operating at the administrative/managerial meso level can help to foster a more unified approach to delivering, evaluating and reimbursement of health and social care.
Nagelkerk et al., 2018/ United States/ Nursing	Mixed methods	Diabetes patients in Fam- ily practice/Physicians, nurses, dieticians, com- munity health workers, medical assistants, and a scheduler	Academic and practice	<ul style="list-style-type: none"> • IPE participants showed significant knowledge gains in IPCP on Team Dynamics and Tips for Behavioural Changes knowledge tests ($p < .05$). • Patients significantly decreased their HgbA1c ($p < .05$) and glucose ($p < .01$). • Increase in number of patients seen per hour. • IPCP intervention showed improvement in practice efficiencies and select patient outcomes in a family practice clinic.
Naqvi et al., 2019/ United Kingdom/ Business	Qualitative/ phenomenol- ogy	Primary & social care services/General prac- titioners and practice managers	Integration between primary and social care in the United Kingdom	<ul style="list-style-type: none"> • GPs lacked understanding of social care providers' roles and services • Need for IPE across sectors for working health and social care professionals
Oeseburg et al., 2013/The Nether- lands/Nursing	Mixed Methods	Elderly, Primary Care/ GPs and practice nurses	Clinical integration	<ul style="list-style-type: none"> • IPE program led to change in attitudes toward elderly care • Redefined tasks among GPs and nurses
Prasad et al., 2019/ India/Public health dentistry	Systematic review	Primary care/GPs, den- tists, dental hygienists	Integration of oral health into primary health care	<ul style="list-style-type: none"> • Dearth of interprofessional training of young physicians, dentists, and paramedical staff • Need for integration of oral health into primary health care • IPE is one part of integration

Table 1 (cont'd). *Overview of included articles*

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Ricketts & Fraher, 2013/United States/ Health Policy & Social Medicine	Short report	Cross sector/MDs, nurses, social workers, patient navigators, out- reach coordinators	Acute care and com- munity	<ul style="list-style-type: none"> • Little attention on training HCWs to work in integrated health networks • Need training for team-based care
Rosenberg & Mullin, 2018/United States/Psychiatry & Family Medicine	Review/ synthesis	Behavioural health, pri- mary care/MDs, nurses, clinical and administra- tive support	Biomedical and be- havioural health	<ul style="list-style-type: none"> • Lack of training programs to prepare clinicians for working in a collaborative and integrative setting. • Need for IPE between behavioural and primary care clinicians
Rozenky et al., 2018/Psychology	Program description	Primary care/All health- care professions	Integrated primary care	<ul style="list-style-type: none"> • IS-IPC is appropriate for post licensure – tailored to the setting/context • Include key topics relevant to working together in integrated primary care.
Schapmire et al., 2018/United States/ Social work	Quantitative	Community-based integrated geriatric care/Health profession students, (nursing NP, medical students, internal medicine and fam- ily medicine residents, master's level social work students, pharmacy, pharmacy residents, dental & dental hygiene students), community- based organization professionals, practicing community organizers, and community health navigators	Academic and community-based agencies	<ul style="list-style-type: none"> • IPE essential for effective teamwork and community-based, holistic, person-centered care of older adults. • IPE settings, members of the team are able to become better informed regarding the expertise of professional teammates.
Shell et al., 2019/ United States/Nurs- ing	Position paper	Various settings with complex populations	Behavioural health integration	<ul style="list-style-type: none"> • Need to prepare nurses across all specialties to function in an integrated behavioral healthcare setting
Solman, 2016/Aus- tralia/Nursing	Short report	Continuum of care	Integrated person- centred care	<ul style="list-style-type: none"> • Existing staff require IPE and experiences that reflect everyday practice and patient journeys • Little robust research linking IPE with changes in collaborative behaviours that improve healthcare and system outcomes • Need to build links between the different agencies that support healthcare, and the creation of patient-centred healthcare systems within and across traditional healthcare boundaries

Table 1 (cont'd). Overview of included articles

Author, year/ country/ first author discipline	Type of publication	Setting/healthcare workers	Description of type of integration	Key Findings
Sykes et al., 2017/ United Kingdom/ Health and Social Care	Mixed methods	Social work, pharmacy, dietetics, medicine (a consultant and a physician associate), nursing, occupational therapy and social work, unregistered assistants in nursing, occupational therapy and physiotherapy, and allied health professional students		<ul style="list-style-type: none"> Through IPE primary care and behavioral health providers need to develop specific skills to function effectively in integrated care settings.
van Dongen et al., 2018/The Netherlands/Public Health	Mixed methods	Primary care/Nurses, occupational therapists, physiotherapists, MD, case managers, district nurses, social workers	Biomedical and Psychosocial	<ul style="list-style-type: none"> IPE supports team functioning in primary care Need for IPE content & format to be flexible and adapted to the specific team context
Walker & Gillies, 2014/United Kingdom/Health & Social Science	Case study	Elderly/Staff from across social services and health settings, including private and voluntary sector providers	Health and social care	<ul style="list-style-type: none"> Health and social care integration require staff from both sectors to change their way of thinking to work differently Positive outcomes of IPE included IPC, partnership-working and person-centred care
Weil et al., 2018/ United States/Sociology	Case study	Elderly/Community/ Nursing, gerontology, public health	Gerontology-public health	<ul style="list-style-type: none"> Interdisciplinary training of gerontological practitioners broadens the scope of care and improves health-care services to older persons in rural areas
Willison, 2008/ Canada/Sociology	Literature Review	Integrative medicine	Biomedical-complementary and alternative medicine (CAM)	<ul style="list-style-type: none"> IPE can provide the groundwork for biomedical & CAM collaboration IPE acts as a catalyst for integrative medicine, changes practices and health service delivery

Table 1 (cont'd). *Overview of included articles*

Key emergent themes

Four key themes emerged following the qualitative thematic analysis: (1) IPE is needed as a foundation for working in integrated care; (2) IPE builds competencies for integrated care; (3) IPE acts as a catalyst for improving team functioning and patient care; and (4) IPE generates practice change among disciplines and agencies. Table 2 summarizes the themes and sub-themes.

Theme 1: IPE is needed as a foundation for working in integrated care. This theme was reflected in two sub-themes: (1) recognizing the need for interprofessional training and (2) the need for academic and workplace IPE. Several authors highlighted the paucity

of IPE training programs for integrated care. Chegade et al. (2016) examined current trends to understand how workforce capacity can be increased to support the implementation of care models to ensure that people with MSK conditions receive optimal care. They concluded that despite growing evidence supporting IPE, there remains a dearth of IPE programs that involve fully integrated clinical co-training of different health care workers (HCWs). Similarly, in an Australian qualitative study, Lucas et al. (2016) explored the experiences of general practice staff in managing clients with chronic and complex care issues, and their perceptions of the contribution of the Connecting Care in the Community (CCC) program. Their findings highlight

Theme	Sub-Themes
IPE is needed as a foundation for working in integrated care	Recognizing the need for interprofessional training Need for academic and workplace IPE
IPE builds competencies for integrated care	Building competencies for integrated care Gaining knowledge and skills
IPE acts as a catalyst for improving team functioning and patient care	Improved team functioning Better working relationships Improving patient care
IPE generates practice change among disciplines and agencies	Changes in team practices Changing practices across agencies

Table 2. *Themes and sub-themes*

the lack of IPE opportunities and information sharing among general practice and community care staff. Participants identified the need for ongoing staff education to understand all provider roles and services available to fully implement the new model of integrated care. Schapmire et al. (2018) further recognize that team approaches are needed in geriatric care because the complexity of care is beyond the training of any one professional yet there is an unmet need for geriatric IPE, especially as it relates to community-dwelling older adults and caregivers in medically underserved areas.

Several authors noted the need for both academic IPE (formal education in university or college program) and workplace IPE (within clinical practice settings) to support integrated care. In a review of current models of training offered to integrate behavioural and biomedical perspectives to care in the United States, Rosenberg & Mullin (2018) note that few health professional education programs have offered training in integrated care models resulting in clinicians not being adequately prepared to work in collaborative and integrative settings. They suggest two distinct time periods for training: during the period of professionalization and after it. Miller et al. (2014) report the benefits of a workplace IPE initiative (integrated care development program) in the form of continuing professional development for health and social care managers as supporting collaboration across professional and agency boundaries. Dubus and Howard (2016), Chegade et al. (2016), and Lapidus and Ruffolo (2017) underscore the need for targeted IPE for health care workers in practice settings where health professionals from different disciplines can learn about integrated care policy, practice, and implementation together. Likewise Cubic et al. (2012)

emphasize the importance of ensuring that IPE training includes integrated care experiences at levels that fit the level and context of the practitioner. Minniti (2019) advocates for the continuum of IPE, interprofessional collaborative practice and interprofessional continuing education across organizations and settings.

Theme 2: IPE builds competencies for integrated care. IPE as a building block emerged through two sub-themes: (1) building competencies for integrated care and (2) gaining knowledge and skills. IPE is recognized as a key component in implementing integrated care by supporting the development of competencies for IPC (Chegade et al., 2016). For example, Oeseburg et al. (2013) note the pivotal role of IPE in enhancing professional competencies in providing elderly care that is both effective, integrated, and well-coordinated. Likewise, Prasad et al (2019) identify IPE and IPC as key elements of integration of oral and primary health care at micro and meso levels of integration. Based on a case study in the Netherlands, Lette et al. (2019) concluded that the foundations of integrated care derive from competencies for IPC such as establishing relationships, building trust and communication among stakeholders noting these should not be overlooked. Cubic et al. (2012) assert that IPE experiences between psychology and other healthcare providers are necessary to ensure professionals value one another's knowledge and contributions within integrated models of care. In this study, physician residents and psychology trainees viewed IPE positively for improving communication, team dynamics and strengthening the ability to work with other professionals.

IPE enables healthcare professionals to gain knowl-

edge and skills necessary for integrated care. Lapidos and Ruffolo (2017) found the interprofessional nature of the Integrated Behavioral Health and Primary Care (IBHPC) web-based IPE program allowed working professionals from numerous disciplines to learn and problem-solve together - an expectation for integrated care. Cubic et al. (2012) found IPE training among family medicine residents and psychology trainees enhanced cooperation in team-based care delivery and advanced the trainees' skills in managing unique ethical dilemmas specific to interprofessional patient-centered care situations. With patients increasingly seeking mental health services in primary care settings, Cubic and colleagues emphasize interdisciplinary training will become more essential.

Miller et al. (2014) used a mixed methods design to evaluate the integrated care development program (ICDP) a continuing IPE program for health and social care managers and commissioners to develop an integrated business plan. The evaluation assessed achievement of expected impacts on the participants, their organizations and partnerships, and patient/service user outcomes. Participants' self-assessment of their behaviour competences increased by 10% by the end of the program with the greatest increase in relation to implementing complex change and overcoming organizational and people-based barriers.

A longitudinal mixed methods study by Lennox and Anderson (2012) reported that HCWs participating in the theoretically based Leicester Model of Interprofessional Education (LMIPE) program gained valuable insights into how teams balance task and patient related issues, offer clarity about the team's effectiveness and new insights into collaborative opportunities to address patients' needs. Of the 214 participants in their study, the pre and post scores showed a significant self-perceived knowledge gain for all nine learning outcomes, for all professional groups.

Several studies indicate that IPE improves healthcare professionals' confidence and capabilities to work in integrated care. An Australian qualitative study found pharmacists participating in training on interprofessional communication skills increased their perceived capability and confidence to proactively communicate with other clinicians noting they felt the training added value to their professional contribution in health care teams when addressing increasing complex patient

and health care situations (Luetch & Rowell, 2015). American healthcare professionals, in a family practice setting, who participated in a multicomponent interprofessional collaborative practice education program expressed feeling more secure sharing their ideas and more confident that their suggestions for patient care were being heard (Nagelkerk et al. 2018). Health and social care managers who participated in an IPE program for integrated care reported personal impacts which included increased confidence and a raised profile in their organization (Miller et al. 2014).

Other knowledge-related outcomes included: learning from other professionals (Lapidos & Ruffolo, 2017); learning about integrated care models and levels of integrated care (Lapidos & Ruffolo, 2017); intervention skills such as motivational enhancement (Lapidos & Ruffolo, 2017); learning about one another's roles, responsibilities and expertise (Lette et al. 2019; Miller et al. 2014; Schapmire et al. 2018; Sykes et al. 2017); increased awareness of the importance of interprofessional working (Miller et al. 2014); improved knowledge related to interprofessional competencies (Lennox & Anderson, 2012; Schapmire et al. 2018); increased knowledge regarding developing and evaluating integrated business cases (Miller et al. 2014); greater understanding of the multidisciplinary team and the roles and difficulties faced by other professionals (Sykes et al. 2017); learning about service provision and resources across hospital and community settings (Sykes et al. 2017); improved knowledge of clinical conditions such as dementia and outcomes focused practice (Walker & Gillies, 2014).

Theme 3: IPE acts as a catalyst for improving team functioning and patient care. IPE as a catalyst was revealed through three sub-themes: (1) improved team functioning; (2) better working relationships; and (3) improving patient care. Improved team functioning was described more specifically in four papers. Results from a large cross-sectional study (n=558) in the Netherlands, Cramm and Nieboer (2011) reported that IPE for health professionals on integrated stroke care teams in hospitals, nursing homes, and rehabilitation centers including communication and role understanding significantly contributed to stroke team functioning. Similarly, Lennox & Anderson (2012) showed that the theoretically based Leicester Model of IPE as part of primary care integration, robustly demonstrates improvements in outcome-based team working and

prepared recently graduated professionals for collaborative team-based practice. Cubic et al. (2012) found IPE among psychology and other health care providers, within an integrated academic-patient-centred medical care home, enhanced cooperation in team-based patient care delivery. A Dutch study integrating biomedical and psychosocial care providers in primary care, reported that participants attending an interprofessional, multi-faceted training program, including reflection and on-the-job coaching, experienced enhanced team functioning in terms of improved person-centredness and efficiency of meetings van Dongen et al., (2018).

IPE contributes in several ways to better working relationships. Lette et al. (2019) used a participatory and multi-component approach to improve integrated health and social care in the Netherlands. Steering group members in this case study indicated that learning and reflection through interprofessional team meetings enabled participants to experience better working relationships and more trust on a management level Lette et al. (2019). Application of an interprofessional communication framework enhanced pharmacists' perceptions of their ability to build collaborative working relationships with other health professionals (Luetsch & Rowett, 2015). Health and social care providers from hospital and community settings in the United Kingdom, who participated in a mixed modalities interprofessional simulation course to improve care transitions for older adults with complex conditions, perceived it to lead to a more collaborative and integrated way of working in practice (Sykes et al., 2017). Further, an evaluation of a new interprofessional education module to support workforce development for integrated care, Walker and Gillies (2014) found participants reported positive outcomes such as improved collaboration and partnership working and better understanding of practice environments.

Various other examples of how IPE supports better working relationships emerged in the literature. Improved communication among team members was viewed as important for improving the work environment (Nagelkerk et al. 2018) and IPE supports interprofessional communication skills (Luetsch & Rowett, 2015). Taking time for team members to get to know one another (van Dongen et al. 2018) and develop professional relationships (Weil et al. 2018) were noted as critical to better working relationships. IPE also was noted to facilitate the development of stronger networks across professionals and agencies, critical to in-

tegrated care (Miller et al. 2014).

Four papers in this review suggest that IPE in integrated care results in improved patient care. In terms of clinical outcomes, Nagelkerk et al. (2018) reported improved HgbA1c and glucose levels in adult diabetes patients cared for by a team of professionals who had participated in an interprofessional collaborative practice learning program. Van Dongen et al (2018) reported that IPE training activities lead to an increased awareness of person-centredness but also noted that enhanced person-centredness requires additional training/practice and on-the-job coaching. Lennox & Anderson (2012) concluded that the LMIPE provided a valid approach for healthcare professionals to analyze and propose improvements for patient-centred team working noting that IPE acts as a catalyst for healthcare teams to review their practices to improve patient outcomes. Patient participation in this program contributed to developing better services and improvements in their treatment and care. Similarly, Willison (2008) postulated that an IPE approach may serve as a practical strategy to facilitate collaboration between biomedical and CAM professionals and serve as a catalyst for integrative medicine and more wholistic patient care.

Theme 4: IPE generates practice change among disciplines and agencies. This final theme emerged with 2 sub-themes: 1) changes in team practices and 2) changing practices across agencies. IPE enables health professionals to think and work differently within various models of integrated care. For example, an IPE workshop for over 300 Scottish health, social and volunteer services staff facilitated participants' ability to identify how and what they need to do differently, within their roles, to reshape care of older persons and to support each other to make the necessary changes (Walker & Gilles, 2014). Similarly, findings from a pilot study conducted in the United Kingdom, in primary care for the elderly, indicate that IPE changed how different professions can work together to plan and deliver care such as the redefining of tasks and responsibilities among general practitioners (GPs) and practice nurses (Oesburg et al. 2013).

Participating in IPE programs has been reported to lead to increasing referrals. A systematic review of qualitative studies examining the organizational determinants of interprofessional collaboration in integrative health care found that IPE between biomedical MDs and traditional and complementary alternative medicine prac-

tioners (TCAMP) is critical for mutual referrals and teamwork (Chung et al. 2012). Further, prior to starting an integrated health care (IHC) service, a period of familiarization and continuing education between BMD and TCAMP may be beneficial for understanding how practitioners can work together to provide comprehensive care. Lennox and Anderson (2012) also found IPE provided in multiple care settings, for post-graduate learners and licensed HCWs that emphasized skills for effective team working and collaborative practice led to health care teams widening their local referral networks with multiple statutory and volunteer agencies in the community and hospital.

IPE included as part of an IPCP intervention in a family practice clinic led to improvement in practice efficiencies such as improved clinic flow, an increase in the number of patients seen per hour and increased provider productivity (Nagelkerk et al., 2018).

IPE also appears to influence practice changes across agencies such as breaking down silos (Morano & Damiani, 2019) and improving interagency communication (Lennox & Anderson, 2012). Solman (2016) suggested staff development that includes IPE experiences reflecting their daily practice and patient journeys enables building links between agencies that support patient-centred healthcare systems within and across traditional healthcare boundaries. Finally, findings from a scoping review reported IPE that includes dentists along with other health professionals such as paediatricians, and primary care professionals has led to increased willingness to include oral care and preventative dental services into their practices (Harnagea et al. 2017).

Discussion

This scoping review explored the literature related to the role of IPE in training current HCWS to work in integrated care systems. The emergent themes have identified a number of findings which help to illuminate the need for and outcomes of IPE within integrated care.

Although numerous international reports have identified IPE as a fundamental component to support teamwork and integrated care (Stein, 2016, WHO, 2010), this review indicates there remains a lack of IPE and co-training opportunities for HCWs within and across various practice settings (Chehade et al., 2016; Lucas et al. 2016). However, clients living with complex and multiple chronic conditions including community-

dwelling older adults require team-based, collaborative approaches to care in which providers understand each other's roles, share information, and engage patients and family caregivers in their care (Bookey-Bassett et al., 2017). Further, individuals living with complex health and social care needs require care from skilled, experienced practitioners which is consistent among providers over time (Kuipers et al., 2013). IPE is recognized as a key precursor to collaborative practice which supports integrated care (IOM, 2015).

Findings in this review emphasize the need for academic and workplace IPE as ongoing professional development for health and social care providers working in integrated care (Minitti, 2019). In this review, IPE included mainly traditional health professional roles (e.g., nurses, doctors, physiotherapists). However, IPE training in integrated care should consider including non-clinical and management staff to support broader understanding of integrated care and collaboration across professional, agency, and sectoral boundaries (Miller et al., 2014; Stein et al., 2021, Sykes et al., 2017)

Approaches to IPE in integrated care should be context-specific yet adaptive in keeping with the changing roles of health and social care providers within and across practice settings (Anderson et al., 2021; Fraher & Brandt, 2019). This is particularly relevant given many HCWs have been redeployed or taken on new roles and responsibilities during the COVID-19 pandemic and these may challenge previous assumptions about various provider roles. The literature further recommends workplace IPE include developing collaborations among workforce planners and interprofessional educators/academics to ensure content is aligned with current integrated care practices in real-world settings (Anderson et al., 2021; Fraher & Brandt, 2019).

The findings from this review provide further evidence that workplace IPE supports developing competencies (e.g., understanding team member roles, communicating effectively, establishing relationships, building trust among key stakeholders) for interprofessional collaboration which underpins the delivery of integrated care (Stein et al., 2021; WHO, 2015). Specifically, IPE within various integrated care programs supports HCWs capacity to work with other professionals by increasing their knowledge, skills, and confidence necessary for integrated care such as learning and problem-solving together. IPE can also enable HCWs to gain further knowledge regarding models of integrated care, ser-

vice provision across hospital and community settings, developing business cases, clinical intervention skills, and specific clinical conditions. This is particularly important when providing care to patient populations in any setting with complex care needs, ethical dilemmas, or with increasing demands for mental health services in primary care settings (Shell et al., 2019; Sykes et al., 2017; Walker & Gillies, 2014).

Our findings indicate IPE serves as a catalyst to improve team functioning and better working relationships. In this review, IPE training for HCWS combined a variety of teaching and learning activities such as simulation, didactic sessions, online modules, on-the-job coaching, reflection, and team meetings. Multi-component IPE interventions based on theory and evidence that combine educational strategies to reinforce learning in the practice setting are required for effective team functioning (Reeves et al., 2016). Investing time in training and allowing HCWs to get to know one another and develop professional relationships is recognized as a strategy to build trust among team members but is often forgotten – assuming professionals know how to work together (Stein, 2016). IPE for integrated care should include relevant disciplines such as HCWs within and across agencies and sectors to facilitate effective team functioning.

Consistent with other literature evaluating the outcomes of IPE (Reeves et al., 2016), most papers in this review focus on outcomes at the provider level (e.g., learner attitudes, knowledge, skills) with only a few studies describing outcomes at the patient level. IPE for HCWs working in integrated care may contribute to improved patient care identified as improved clinical outcomes, increased patient involvement in their care, and the provision of more person-centred, holistic care. Although, the focus of this review was not to determine specific patient outcomes, additional research is required to further understand the impact of various forms of IPE in integrated care on provider, patient, and population health outcomes (Chehade et al., 2016; Rozensky et al., 2018).

Integrated care models aim to address the increasingly complex and diverse needs of a global aging population. IPE within such models of care generates practice change among disciplines and agencies. Several studies in this review indicate IPE allows HCWs to identify new ways to work together in planning and deliv-

ering efficient care. Key to successful integrated care is understanding one's own role and that of others to make effective referrals within and across programs. As patients transition through various health sectors, IPE can facilitate HCWs' understanding of patient care needs and develop new models of care to support them.

Limitations

A potential limitation is that all relevant literature might not have been captured in the search strategy given that only peer-reviewed papers written in English were included. Like other scoping reviews the focus is on understanding the breadth and nature of the literature to answer a specific question. Although the scoping review methodology allows the analysis of a broad range of publications, it does not necessitate the quality assessment of publications and grading of evidence. However, scoping reviews provide an avenue for identifying gaps and areas for future research.

Conclusion

This review offers important and timely information about the role of IPE in integrated care and was conducted in accordance with guidelines for scoping reviews to ensure rigor and transparent results. Our findings suggest that IPE plays a unique and important role in training health and social care providers to work in various models of integrated care.

Health care providers need opportunities for continuing IPE to enable their ability to work in integrated care systems. IPE can serve as a foundation for HCWs to learn about teamwork necessary for working in integrated care. Ongoing learning in the form of continuing IPE can serve as a basis to further develop the competencies for integrated care. Further formal and informal IPE in the workplace can support better team functioning and improvements in patient care and patient experiences as they transition through health and social care systems. Finally, IPE can lead to the generation of new practices within and across health and social care teams ideally leading to positive outcomes for patients, family caregivers and health and social care providers. These findings may inform the design, implementation, and evaluation of new models of IPE for integrated care.

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