

Author	Year	Author origins	Countries involved	Study type	Healthcare professions involved	Educational intervention	Pedagogical approaches and delivery methods	Outcome measures
Barchi	2014	1st = HIC 2nd = HIC	USA; Botswana	Pre-/Post-	Educator = not stated Learner = 'faculty members.' (n=32)	32-hour programme. Developing and piloting an innovative and locally relevant ethics curriculum for qualified Botswanan nurses. Piloted on teaching faculty who generally felt uncomfortable teaching ethics.	Paedagogical: facilitated; enquiry-based; reflective; collaborative.  Delivery: student-focussed activities	Faculty members' comfort levels re. teaching ethics; ability to identify ethical issues in practice; likelihood of using the International Council of Nurses' (ICN) Code of Ethics in practice, classroom instruction and mentoring after the workshop.
Blignault	2010	1st = HIC 2nd = HIC	Australia; Pacific Islands incl. Cook Islands, the Federated States of Micronesia, Fiji, Palau, Papua New Guinea, the Solomon Islands and Vanuatu,	Survey (qualitative)	Educators = 'institute staff' who have specialist mental health skills/knowledge.  Learner = doctor, nurse (n=13).	Builds on 2008 pilot.  2 week programme in Australia: organized into five streams designed to provide information about the diagnosis and treatment of mood disorders; training in the development and implementation of community information, engagement and destigmatization programs; examples of train-the-trainer models for professional education; practical suggestions for influencing public policy and advocacy; experience in conducting clinical interviews with patients with mood disorders. An additional 1-day workshop on dealing with mood disorders in adolescents also included. Train-the-trainer model included.	Paedagogical: experiential; reflective; collaborative; integrated, peer teaching; traditional.  Delivery: in-person to group; distance (with and without personal student contact). Clinical practice and professional development activities were discussed via email on a fortnightly basis, while new information and resources (including those generated by the trainees) were shared via the online forum.	Personal evaluations from participants; benefits and changes in practice (individual and institutional reports); desire for continuing collaboration.

						In-country follow-up afterwards whilst working in mood disorders (3 months extended to 4 months).		
Blignault	2012	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	Australia; Sri Lanka	Pre-/Post-	<p><b>Phase 1</b> Educator = not stated Learner = doctor</p> <p><b>Phase 2</b> Educator = doctor Learner = Medical Officer of Mental Health (MOMH); GP; general counsellors; mental health support workers</p> <p>(n=13)</p>	<p>As Blignault 2010.</p> <p><b>Phase 1</b> 8 participants: 2 week educational programme in Australia. In-country follow-up afterwards whilst working in mood disorders (3 months).</p> <p><b>Phase 2</b> Train-the-trainer programme.</p> <p>1.5 day programme for Medical Officer of Mental Health (48 attended plus 42 mental health support workers and general counsellors)</p> <p>CBT workshop for GPs (35 attended). Duration not stated.</p>	<p>Paedagogical: experiential; reflective; collaborative; integrated, peer teaching; traditional.</p> <p><b>Phase 1</b> Delivery: in-person to group; distance (with and without personal student contact). Clinical issues and professional development activities were discussed via email and new information and resources shared via the online forum.</p> <p>Training events conducted included presentations to doctors and nurses, talks to hospital volunteers and community members, and a Sri Lanka Medical Association symposium on mood disorders.</p> <p><b>Phase 2</b> Activities in Sri Lanka to raise awareness of mood disorders among a wider group of health</p>	Personal evaluations from participants; benefits and changes in practice.

							<p>professionals and to involve the media in educating the general public and policy makers about the need to scale-up services.</p> <p>Inauguration of the National Programme for Community Based Mental Health Care: Capacity Building in Management of Mood Disorders in Sri Lanka.</p>	
Bould	2015	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	Canada; UK; Zambia	Interview (qualitative)	Educator = doctor Learner = doctor (n=14)	4 year MMed Anaesthesia programme for doctors in Zambia. Focus in paper on experiences of consultant anaesthetists from Canada and the UK working in Zambia to deliver the programme.	N/A	The individuals' experiences of working with and educating their Zambian colleagues. 14 consultants were interviewed.
Cameron	2010	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	Canada; Guyana	Survey	Educators = doctor Learners = doctor (n=14)	2 year Diploma in Surgery (plus 6 months' practical assessment in practice) in Guyana developed through collaboration between Guyanan and Canadian medical faculty. 14 participants (5 completed, 9 in training). Qualified Guyanan doctors with 3 years' experience as house officers following MBBS graduation in Guyana.	<p>Paedagogical: not stated.</p> <p>Delivery: 1:1 and group delivery in-person; electronic distance learning including individual learner support.</p> <p>All learners completed advanced trauma life support, advanced cardiac life support and basic laparoscopy training courses. 24 modules developed and delivered. Delivered by</p>	1.Outputs and outcomes of the program after 2 years 2.Impact of the program through a quantitative/ qualitative questionnaire administered to all program participants.

							both local and visiting faculty.	
Carlos	2015	1st = HIC 2nd = HIC	USA; Philippines	Pre-/Post-	Educators = not stated Learners = doctor, nurse, medical technologists (n=364) (35% doctors, 40% nurses, 20.1% medical technologists, 4.5% 'other').	3-day Ebola management workshop. For 364 participants (35% doctors, 40% nurses, 20.1% medical technologists, 4.5% 'other') from different Philippine hospitals.	<p>Paedagogical: experiential; traditional</p> <p>Delivery: In-person delivery to large and small groups. 18 lectures and 10 practical or small group sessions, including three practical sessions to don and doff personal protective equipment (PPE). Everyone participated in at least two PPE sessions.</p> <p>A specialized series of three lectures and a practical session were run separately for medical technologists - equivalent to laboratory scientists in other countries. Medical technologists' sessions included opportunities to practise venepuncture and use laboratory equipment while wearing EVD PPE.</p>	Knowledge of Ebola and confidence in managing it safely.
Cunningham	2017	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	USA; Kenya	Interview; survey	Educators = physiotherapist Learner = physiotherapist (n=15)	18-month Higher Diploma programme for Kenyan physiotherapists. Content consistent with the	Paedagogical = facilitated; traditional; enquiry-based; experiential.	Knowledge and skills of programme graduates and ability to advance clinical care and education in physiotherapy.

						<p>orthopedic curriculum provided by professional doctorate in physical therapy programs in the US. 90 participants over 6 cohorts.</p>	<p>Delivery: 6 study modules over 18 months. Each module takes place during 10 days of onsite education and mentoring provided by physical therapy instructors from the US. In addition to onsite modules and online resources, residents receive clinical mentoring focused on integrating the knowledge and skills learned during the Residency program into clinical practice. Residents also practice as students within local facilities. Following completion of the 18-month Residency program, residents must successfully pass a comprehensive written examination and a live patient practical examination to earn the Higher Diploma.</p>	
Dunleavy	2017	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	USA; Rwanda	Survey; interview	Educators = physiotherapist Learners = physiotherapist (n=168)	<p>CPD programme for qualified Rwanda physiotherapists. Several courses (modules) with different duration of delivery available: -spinal orthopaedic conditions (7 months, 5 sessions)</p>	<p>Paedagogical: facilitated; experiential; integrated.</p> <p>Delivery: In-person to group. The courses were offered over multiple weekends.</p>	Self-reported changes in skills, knowledge and practice.

						<p>-extremity orthopedic conditions (5 months, 4 sessions)</p> <p>-neurological conditions (4 months, 4 sessions)</p> <p>-paediatric (3 months, 4 sessions)</p> <p>-respiratory conditions (1 session)</p> <p>-professional leadership and advocacy.</p> <p>Four common threads were reinforced across all courses: clinical decision making, active treatment techniques, clinical skills building and treatment planning and evaluation using functional outcomes. All courses used a clinical reasoning model based on the World Health Organization International Classification of Function, Disability and Health framework.</p>		
Erwin	2016	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	UK; Sweden; Kenya	Survey	<p>Educators = doctor (and patients)</p> <p>Learners = Clinical Officers, Medical Officers, Nurses, Physiotherapists, Occupational Therapists and Pharmacists.</p> <p>(n=535)</p>	<p>Note: the BEME review focusses on the healthcare staff who were educated through the programme whose development is discussed in the paper.</p> <p>Education on musculoskeletal issues was delivered to over 500 participants at 11 locations in Kenya. Educational delivery was by a patient educator and a doctor. Its purpose was to improve knowledge and skills relating</p>	<p>Pedagogical: facilitated; experiential; integrated.</p> <p>Delivery: by a doctor and a patient educator (no further details provided).</p>	<p>Learners' enjoyment of the education and its perceived impact on their knowledge, skills and practice re. musculoskeletal conditions.</p>

						to musculoskeletal conditions and their management in the healthcare practitioners attending.		
Evans	2009	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	USA; India	Interview; observation; survey	Educators = doctor; Learners = doctor (n=17)	16 week educational program for rural medical officers in basic obstetric care. 17 took part in the pilot.	Paedagogical: facilitated; experiential; collaborative; traditional  Delivery: in-person group and individual delivery. The 16 week program was delivered in two parts: -6 weeks' classroom- based instruction -10 weeks' practice observed by an obstetrician in a district hospital.	Whether facilities where the learners were based provided more comprehensive obstetric care after learners undertook the program.
Gordon	2006	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = LMIC	USA; Laos; Thailand	Pre-/Post-; interview	Educators = doctor Learners = doctor (n=6)	3 year post-graduate program in internal medicine for Laos doctors. 6 participants per year.	Paedagogical: facilitated; experiential; peer teaching; traditional.  Delivery: in-person 1:1 and group delivery.  Participants complete clinical rotations in three hospitals in Vientiane, Laos, plus one clinical site in Thailand. Each month, the participants rotate to one of seven wards spread over four clinical training sites. Responsibilities	MCQ exam and an OSCE four times during their time in the program: once prior to admittance, and once more at the end of each year of training.  Changes in knowledge, skills and practice following the educational program.

							<p>towards patients and teaching juniors increase throughout the programme. Workshops on bedside and didactic teaching, evaluating trainees, writing examination questions, and giving constructive feedback included as teacher preparation.</p> <p>Volunteer American-trained internists and pediatricians, live in Laos for at least a year and work with the Lao participants on a daily basis.</p> <p>English language classes and instruction in using computers and the Internet included.</p>	
Gower	2016	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	Australia; Tanzania	Interview	Educators = nurse; midwife Learners = nurse; midwife (n=15)	1 – 2 week courses for Tanzanian nurses and midwives adapted from Australian curricula. The courses were tailored to Tanzanian needs, specifically infection prevention and control, care of the deteriorating patient, obstetric emergencies, normal birth care, wound and ostomy care and pre-hospital care. Number of participants not stated.	<p>Paedagogical: experiential; traditional; peer teaching</p> <p>Delivery: In-person to group (theory) and through practice in the work environment. Australian materials and approaches were adapted to meet the local context and identified needs. Train-the-trainer element</p>	<p>Educators: thematic analysis of interviews.</p> <p>Learners: at the completion of the courses, assessments were conducted to determine knowledge gain (no further information given).</p>

						Also assessed experiences of Australian staff delivering the education (n = 13).	included for sustainability.	
Gunathilake	2009	1 <sup>st</sup> =LMIC 2 <sup>nd</sup> = LMIC	UK; Sri Lanka	Audit	Educators = doctor Learners = doctor; nurse (n=not stated)	<p>Education to train medical and nursing specialists in diabetes and endocrinology.</p> <p>Partnership between UK and Sri Lanka universities. Sri Lankan staff travel to the UK for training and to work in hospitals. UK staff make quarterly visits to Sri Lanka for educational meetings and supportive research.</p> <p>Sri Lankan staff developed educational programs when they returned home using the WHO Innovative Care for Chronic Conditions Framework. Training workshops were conducted for doctors and nurses in three major cities and a rural district. A patient education programme was implemented through a national media campaign. Advocacy meetings were held with local opinion leaders from school authorities, health authorities, industry and the mayors and councils.</p>	<p>Paedagogical: unclear</p> <p>Delivery: 1:1 in person (UK hospital); workshops; national media (for patients).</p>	Care audit after 12 months.
Holm	2015	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	USA; Haiti	Survey; Pre-/Post-	Educators = doctor Learners = doctor, nurse, pharmacist (n = 150)	Phase 1: USA staff travelling to Haiti to work alongside Haitian colleagues in delivering patient care. Undertook continuous needs assessment	Paedagogical: inquiry-based; traditional; experiential	Levels of confidence, knowledge and changes in practice demonstrated through self-report and evaluation.

						<p>to determine which areas of education Haitian colleagues deemed most valuable to them.</p> <p>Phase 2: USA staff delivering educational sessions using e.g. targeted lectures, clinical vignettes, and multimodal techniques. Focus on patient-case-based presentations, rather than traditional didactic lecture.</p> <p>Phase 3: The train-the-trainer approach to make education sustainable through delivery by Haitian staff.</p>	<p>Delivery: in-person 1:1 and group; electronic distance learning; recorded lectures</p>	
Khanna	2018	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = LMIC	Bhutan; USA	Pre/post	Educator = doctor Learner = doctor (n=15)	Advanced paediatric life support (APLS) simulation train-the-trainer curriculum tailored for implementation in Bhutan.	Paedagogical approaches and delivery methods unclear.	Study objectives were to evaluate knowledge translation, pilot a clinical utilization tool to assess use of APLS-structured thinking, and identify course content needing revision
Kisa and Grabski	2019	HIC and LMIC joint 1 <sup>st</sup> authors	Uganda; Scotland; Canada; Italy; Sweden; UK; USA	Interview, progress reports	Educators = doctor Learners = doctor (n=not stated)	Forum developed for international stakeholders working in Uganda who were working independently, not collaboratively. Rationale was to improve standards and outcomes for children's surgery. Organised a one-day stakeholders' meeting. Identified challenges and unmet needs re. children's surgery. Breakout groups then addressed four key thematic	Paedagogical and delivery approaches unclear.	Analysis of the impact on quality and capacity of children's surgery in Uganda by thematic areas: infrastructure, service delivery, training (including subspecialties) and research. Done using progress reports and in-person interviews.

						<p>areas: infrastructure, training and workforce retention, service delivery, and research and advocacy. Specific short- and medium-term action plans were developed. These included the creation of a foundation for children's surgery in Uganda to help coordinate children's surgical care.</p> <p>Other key aspects were: 1. The stakeholders' meeting was a Ugandan-led initiative; 2. there was a shared vision to improve surgical care for children in the absence of personal or institutional agendas; 3. most of the NGOs invested in children's surgery and represented at the meeting had 10–20 years of engagement in Uganda; and 4. crosscutting clinical areas such as paediatric anaesthesia and peri-operative care, neonatology, oncology and nursing were emphasized.</p>		
O'Heir	1997	HIC (only one author)	Australia; Ethiopia; Lesotho; Nepal; Fiji; Mozambique	Survey; focus groups	Educators = midwife Learners = midwife; (n = 36 teachers and 142 learners)	<p>Field-testing of new safe motherhood midwifery education modules.</p> <p>Phase 1: upgrading or updating the clinical skills of the midwife teachers who were to participate in field testing. Conducted over a two-week period in tertiary-level</p>	<p>Paedagogical: facilitated; traditional; collaborative; experiential</p> <p>Delivery: in-person to group; distance; lectures; group work; feedback and discussion; learning</p>	Educators = assessing the usability of the modules Learners = improved knowledge and skills; changes in practice.

						<p>clinical facilities with a history of complicated maternity admissions.</p> <p>Phase 2: Orientation for using the modules. 8 day workshop after completing phase 1. The workshop introduced participants to the structure and content of the modules, the teaching/learning methods, and the methods for assessing the clinical competence of students.</p> <p>Phase 3: using the modules for either in-service or post-nursing midwifery education.</p> <p>Phase 4: evaluation of teachers' experiences (focus groups and questionnaires) and impact on learners (questionnaires).</p>	<p>games and puzzles; practical exercises; demonstrations</p>	
Peter	2016	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	UK; Ethiopia; Kenya; Malawi; Mozambique; Rwanda and Tanzania; Uganda; Zambia; Zimbabwe	Survey; Pre-/Post-	<p>Educators = 'UK NHS instructors' Learners = doctor; nurse; clinical officers (also medical students).</p> <p>Total number of participants not specified. Feedback on training from</p> <p>(n = 1030)</p>	<p>The COSECSA Oxford Orthopaedic Link (COOL) delivered training in primary trauma care.</p> <p>Delivery uses "2:1:2" format.</p> <p>1. standard two day provider training course, 2. followed by a one day instructor's course and finally 3. ending with a further two day provider training course. The first PTC course ("primary") in each country is delivered by a team</p>	<p>Paedagogical: reflective; experiential; traditional</p> <p>Delivery: in-person to group</p>	<p>Increased knowledge and confidence in participants; changes to practice.</p>

					(119 - Clinical Officers, 540 - doctors, 260 - nurses, 111 -medical students) over 28 courses.	of four UK National Health Service (NHS)instructors. On completion of the first PTC course (“primary”) in the country, subsequent “2:1:2” PTC (“cascading”) courses are led by a team of local instructors with a UK instructor present to offer mentorship to the new instructors.		
Prashad	2017	1st = HIC 2nd = HIC	Guyana; USA	Interview; reflective journals; presentations (qualitative analysis)	Educators = doctor Learners = doctor (n=16)	Focus on participants’ and other’ experiences of the University of Guyana Diploma in Surgery program (see Cameron 2015 and Cameron 2017). Data were analyzed from constructivist and interpretivist perspectives, and compared against the benefits and concerns described by Eyal and Hurst’s (2008) Framework for Locally Relevant Training.	Paedagogical: facilitated, collaborative and experiential learning.  Delivery: in-person to group; in-person 1:1	Retention rates for medical professionals in Guyana.
Raney	2019	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	UK; India	Interview; Pre-/Post-	Educators = nurse Learners = nurse; midwife; auxiliary nurse midwife (n=120)	Incorporated 1 week of simulation/debrief training into the 4 week AMANAT mentoring program for 120 mentors, plus 4 day advanced simulation facilitation 4 months later.  3422 mentees participated in the 8 weeks of training (1 week per month over 8 months), including key aspects of PE/E diagnosis and management through lectures, skills stations, and 31 simulations.	Paedagogical: facilitated; experiential; reflective; <b>traditional</b>  Delivery: in-person 1:1 and <b>to group</b> .	Changes in nurse mentees’ use of EBPs during simulated PE/E cases across all phases of the AMANAT program.

Raven	2010	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	UK; Bangladesh; India	Interview; focus groups; survey; pre- /post-	Educators = “international and national experts”, ‘mostly’ doctors and midwives Learners = doctor; nurse; midwife; trained birth assistant.  (n = 423 in Bangladesh - incl 60 master trainers)  plus  (n = 510 in India - incl 48 master trainers)	WHO/LSTM/RCOG collaboration but tailored to meet local needs.  Bangladesh: 3 days program. Covers all 9 signal functions of comprehensive Emergency/Essential Obstetric and Newborn Care (EOC).  India: 2-day program. Includes 5 signal functions.  Complements other short training packages and the 6- and 12-month programmes supported by the UN Children’s Fund (UNICEF) and the UN Population Fund (UNFPA), which aim to train general medical officers to conduct caesarean sections and manage women with obstetric complications in settings where there is no fully trained obstetrician/gynaecologist.	Paedagogical: facilitated; experiential  Delivery: in-person to group; short Lectures; scenarios; skills teaching; practical demonstrations; role play.	Monitoring and evaluation framework based on Kirkpatrick’s four key levels of learning, incorporating the UN process indicators for maternal and newborn health.
Spiwak	2014	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	Canada; Tanzania	Survey; pre-/post-	Educators = ‘three international and one local instructor’ (professions not specified). Learners = doctor; nurse; physiotherapist;	3 day Essential Burn Management (EBM) program comprising: (1)seminar instruction with slides; (2) group seminars for case discussion; (3) skill stations using models and simulation;(4) intraoperative modules on the final day to	Paedagogical: experiential; traditional  Delivery: in-person to group	(1) To evaluate the ability of a standardized burn course for LIC to meet the needs of the participants. (2) To explore characteristics of burn care and needs related to delivery of burn care in LIC

					<p>occupational therapist; dietician (n = 21) (11 nurses, 6 doctors, 1 physio, 1 Occupational Therapist, 1 dietician, 1 “care giver”).</p>	<p>discuss blood conservation, surgical excision, and grafting techniques.</p> <p>Instructor course also planned.</p>		
Strother	2012	<p>1<sup>st</sup> = HIC 2<sup>nd</sup> = HIC</p>	USA; Canada; Kenya	Pre-/Post-	<p>Educators = nurse Learners = nurse (n = 22); pharmacists and doctors (n = 8) (the latter two groups practiced in ways analogous to nurses in the USA).</p>	<p>4 day ‘safe chemotherapy administration’ program (part of the Academic Model Providing Access to Healthcare (AMPATH) program). Designed for nurses. Topics included cancer biology, cancer epidemiology, cancer pharmacology, cancer nursing concepts, and cancer nursing application.</p> <p>Assessment of short-term retention of knowledge via daily written evaluations, and pre- and postintervention surveys and knowledge assessment tools, which were administered on days 1 and 5, respectively. Competence in skill-based components was assessed through a series of workshops. Finally, a series of standard operating procedures for common nursing emergencies was collaboratively developed between the participants and the expert (Canadian) nurses.</p>	<p>Pedagogical: facilitated; experiential; reflective; traditional</p> <p>Delivery: in-person to group - didactic lectures, question-and-answer sessions, small group expert-facilitated discussion, facilitated self-reflection, sharing of experiences, hands-on competency exercises.</p>	Knowledge and skills of learners following the program.

Vargas	2012	1 <sup>st</sup> = HIC 2 <sup>nd</sup> = HIC	USA; Mongolia	Survey	<p>Educators = doctor; nurse; scrub technician; bio-technician Learners = doctor; nurse; Mongolian equivalents of other USA professions above  (n=unclear)</p>	<p>Two-week laparoscopic cholecystectomy training course comprising: 1.Eight hours of didactic education 2.practical training (pre-, intra- and post-operative patient management). Five days practical laparoscopic training focussed on laparoscopic cholecystectomy, with a few appendicectomies.</p> <p>Each course included a multidisciplinary education team consisting of 2 surgeons, an anesthesiologist, an operating room nurse, an operating room scrub technician, and a bio-technician who trained their Mongolian counterpart about the specifics of laparoscopic surgery from their perspective</p> <p>Educational context determined through the HIC/LMIC collaboration. WHO (2008) surgical safety checklist included. Teaching materials provided in Mongolian.</p>	<p>Paedagogical: experiential; traditional; peer teaching</p> <p>Delivery: in-person delivery to group and 1:1.</p>	<p>Increased use of safe laparoscopic cholecystectomy in Mongolia, rather than open procedures.</p>
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Author	Year	Results	Conclusions	Perceived barriers	Perceived enablers	Quality indices*						Level of collaboration (DeSantis)	Level of outcome (Kirkpatrick)	Strength of conclusions
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Barchi	2014	Thirty-three per cent of the faculty members indicated they would be more comfortable teaching ethics. A substantial number of faculty members were more likely to introduce the ICN Code of Ethics in teaching,	The ICN Code of Ethics for Nursing is a valuable teaching tool in developing countries when taught using locally relevant case materials and problem-based teaching methods.	Tailoring materials to be culturally and socially appropriate without losing their 'essence' e.g. ethical issues; programs not directly transferring to other cultures; contextualising materials to make them relevant to learners; curriculum design, content and delivery e.g. emphasis on didactic approach not problem solving, collaboration and lack of ethics and professionalism; lack of teaching staff comfort/experience with topics and techniques.	Compatible with existing paedagogical approaches, developed over several years;							1,2,3	1	1/5
Blignault	2010	The evaluation was very positive. Individual and organizational reports documented immediate and expected ongoing benefits and expressed a desire for continuing collaboration.	The programme boosted regional expertise and leadership in mood disorders. It has made an important contribution to the implementation of individual	Lack of technology and technological expertise e.g. on-line information, computers; lack of other resources e.g. mental health assessment tools; lack of finances.	Collaborative approach; high levels of institutional and individual commitment; careful attention to content and process issues; sustainable due to ongoing collaborative in-country and							1,2	1, 2a, 2b, 3, 4a	4/5

			country mental health policies, one which strengthens the regional mental health network and builds new connections with Australian institutions. Success was based on a collaborative approach, high levels of institutional and individual commitment, and careful attention to both content and process issues. Sustainability will be enhanced through ongoing collaborative in-country and regional activities.		regional activities.								
Blignault	2012	Positive evaluation. Changes in practice and numerous innovations. Development of the National Programme for Community Based	This project has built capacity in mood disorders among mental health clinicians in Sri Lanka, including those working in	Cultural attitudes e.g. stigmatization of mental health issues; current treatment approaches e.g. hospital-based care, emphasis on drug treatment; resources e.g. funding, lack of	Collaborative; systematic and systemic approaches; including a cultural broker; working with an appropriately						1,2,3	2a, 2b, 3	4/5

		Mental Health Care: Capacity Building in Management of Mood Disorders in Sri Lanka.	primary care. It has contributed to the implementation of national mental health policy, strengthened local networks and established new connections with Australian institutions.	staff, time for staff to attend training; lack of patient health literacy; time constraints and lack of hands-on experience for putting learning into practice; language barriers; ownership – vital the program is adopted, tailored and delivered by the LMIC.	experienced LMIC partner;								
Bould	2015	Themes which emerged: 1. Teaching and learning resources and lack of consistency at times re. what was delivered. 2. Assessment of trainees. 3. Experience of clinical practice. 4. Logistics and communication. 5. Challenges of teamworking within a different culture.	Findings highlight challenges and opportunities for faculty as part of a partnership for postgraduate medical education. Since maintaining an effective faculty is essential to ensure the sustainability of any teaching program, this work may help other similar programs to anticipate and overcome potential challenges.	Staff shortages resulting in lack of capacity to train more; challenges of international collaboration e.g. language, costs, cultural differences, distance, healthcare systems, patient pathology; educational approaches e.g. heavily didactic, lack of independent study skills; lack of 'expected' knowledge in LMIC staff; teaching materials not relevant to the LMIC e.g. text books re. treatment approaches and pathology; lack of NTS emphasis e.g. communication, teamwork, leadership; 'old' practices e.g. surgical techniques, anaesthetic drugs, equipment; cultural	Good communication with key visiting faculty; co-learning.						2	1	4/5

				differences in practice e.g. co-morbidities and illness, teamwork and communication, how to navigate the system; limited resources and inconsistent supplies e.g. drugs, equipment; ethical issues re. HIC staff undertaking procedures not familiar with.								
Cameron	2010	<p>1.The 5 residents who successfully completed the program are working in regional hospitals.</p> <p>2.Twenty-four modules have been facilitated, alternating Guyanese with visiting Canadian surgical faculty members.</p> <p>3.A postgraduate Structure has been developed at the Georgetown Public Hospital Corporation (GPHC). 4.An examination structure similar to Canada's has been established.</p> <p>5.Hospital staff morale is greater, surgical care is</p>	Guyana has proven that, with visiting faculty assistance, it can mount its own postgraduate training suitable to national needs and will provide a career path to encourage its own doctors to remain and serve their country.	Limited local resources and expertise in LMIC in post-graduate education; meetings LMIC needs within available resources e.g. minimum program length to deliver necessary skills and knowledge; transferability of programs between countries; importance of locally-based and relevant training e.g. pathology, available resources, staff retention, locally relevant curricula; low staff morale in LMIC; collaborative skills; support from HIC for staff who want to help; challenge of developing internationally recognised/transferrable qualifications with	Local solution to a national crisis; enthusiasm and engagement of participants; willingness of local hospitals to accept programme graduates					1,2,3	1	3/5

		<p>more standardized and academic opportunities have been enhanced in Guyana.</p> <p>6. Surgical services have improved where programme graduates are employed.</p> <p>7. Canadian surgeons have a greater understanding of and commitment to surgical development in low-income countries.</p>		<p>limited resources and 'old' practices.</p>								
Carlos	2015	<p>1. Levels of self-reported confidence in managing Ebola increased significantly following the workshop.</p> <p>2. Pre- and post-tests questions indicate that knowledge re. Ebola and its management improved significantly as a result of the programme, though knowledge of transmission remain suboptimal.</p>	<p>The workshop was effective at increasing the level of knowledge about Ebola and the level of confidence in managing it safely. This workshop could be adapted for use as baseline training in Ebola in other developing countries to prepare large numbers of hospital staff to</p>	<p>Lack of resources e.g. hand hygiene when sinks, soap and water are absent; adapting the local context e.g. train-the-trainer approach at local facilities in the LMIC; will the program adapt to other countries?</p>	<p>Developed to meet a specific local need.</p>					2	2a, 2b	4/5

			rapidly detect, isolate and safely manage cases.										
Cunningham	2017	1. Self-reported increase in knowledge and skills from participant surveyed 2. Increased number of patient referrals and the number of professionals referring patients to program graduates. 3. Instigation of train-the-trainer programme involving 6 program graduates.	The program has improved orthopaedic clinical standards in Kenya.	Geographical location of learners and access to facilities; developing and integrating knowledge and skills into practice; making the program self-sustaining; resources and costs e.g. equipment, space to work, educational costs and who pays; programs meeting learners' expectations; improving job prospects for participants after training.	Developed to meet a specific local need; positive career impact.						1	2b	2/5
Dunleavy	2017	1. Participants reported improved levels of skill in all domains 2. They also believed that rehabilitation services for individuals with disabilities had improved as a result of the courses.	The contextual factors (environment, healthcare service organization, need for rehabilitation and status and history of the physiotherapy profession) were essential for project and instructional choices.	Geography and location of healthcare resources and further training – difficult for rurally-based staff; physiotherapy is a relatively new profession; lack of time, resources and training e.g. documentation is not used consistently and outcome measures are often not completed as e.g. translations of tools and copying facilities not available, concepts unfamiliar, lack of time to complete.	Devised to address identified local needs; developed and delivered in partnership with LMIC staff; establishing a professional degree and association; meeting CPD requirements; core group of active professionals;						1,2	2b,4b	3/5

					existing foundation from previous projects; offering programmes in both rural and urban areas, multiple locations; weekend delivery.							
Erwin	2016	1. Healthcare staff reported increased levels of knowledge and skills relating to musculo-skeletal conditions (MSC) issues and assessment following the training programme. 2. Self-reported changes in practice from healthcare staff following the MSC education programme.3. Most learners rated the course content as 'good' to 'very good'.	One of the main challenges of the programme is obtaining robust evidence on the impact of the training on clinician's knowledge and competencies in relation to the assessment, diagnosis and management of MSCs and data on patient outcomes. The teams are currently devising different methods of measuring changes in community health providers' knowledge and	Under-resourced service e.g. lack of staff and specialist training, lack of knowledge about MSC in staff, lack of knowledge in patients leading to 'traditional' treatments and consequent problems; obtaining robust evidence of the program's impact on staff practice and patient outcomes e.g. record keeping not always accurate, lack of appropriate audit tools.	Delivered at multiple locations; adaptability of the programme; paedagogical approach; sustainability through train-the-trainer programme; developing good working relationships; ongoing support for staff.					1,2,3	1, 2b, 3	3/5

			competencies pre- and 6-month post-training.											
Evans	2009	Although there were some improvements, a number of barriers limited the development of skills and expertise in some learners.	Although medical officers can be trained to provide obstetric care (including Cesarean delivery), without proper selection of facilities and trainees, adequate training, and support, this strategy will not substantially improve the availability of comprehensive obstetric care in India.	Staff shortages and existing roles; infrastructure, equipment and services e.g. lack of change and opportunities to use new skills; politics e.g. way staff are selected for training, hierarchy and attitudes; lack of staff and capacity; existing management and evaluation systems; lack of staff co-operation and collaboration, including with the trainees..	Developed slowly with government support and appropriate research; pilot the national roll-out; health service issues addressed alongside developing the programme.							2	3	3/5
Gordon	2006	Only one program cohort evaluated. 1. Participants felt more confident as physicians and that they had a better understanding of the uses and limitations of both diagnostic tests and medications at the end of the program. 2. MCQ and OSCE results	The goal of the program is to prepare a core group of local physicians to deliver healthcare, and train others according to an international standard of care.	Current educational practices e.g.lack of continuity from medical training to practice, lack of specialist training, no teaching facilities in hospitals (medical teaching unit established); poverty e.g. patients with advanced disease present locally, at less resourced centres, as cannot afford travel to	In-country delivery to avoid 'brain drain; designed to be compatible with available equipment and facilities; long-term partnership; HIC partners are volunteers; locally sustainable.							1, 2, 3	2b, 3	3/5

		<p>also showed improved knowledge as a result of the programme. 3. Participants reported changes they would make re. e.g. making a diagnosis before prescribing treatment (had done the opposite before) and considering side effects of medications.</p>	<p>As more Lao physicians receive this level of training, the program will become locally sustainable and help break a cycle of dependency on foreign expertise within the Lao health care sector. Preliminary results suggest that the program is succeeding, and could be replicated elsewhere.</p>	<p>larger centres; challenges of evaluating effectiveness of interventions e.g. validating locally devised assessment, changes in knowledge (as lack of resources may impede application through changes in practice); costs e.g. sending overseas staff as educators – even if volunteers - vs. local sustainability, training ‘traditional’ staff vs. ‘substitute’ roles (lower training costs and duration of programmes for latter vs. in-depth knowledge and ability of former to disseminate and influence); sustainability e.g. making training locally relevant re. equipment, facilities, personnel, technology; avoiding ‘brain drain’; English language teaching; technology teaching (computers and internet); training learners to teach, write assessment, evaluate and feed back to learners; making the program locally relevant whilst meeting international standards; paying salary, keeping</p>										
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				post and money for books whilst training; use of neighbouring LMIC for placements and input as well as HIC input.									
Gower	2016	Educators: themes which emerged were determination to learn, assessing needs, communication skills and greater understanding in order to help their Tanzanian colleagues. There were changes in self-reported attitudes and perceptions, skills, knowledge and methods of teaching delivery resulting from these.	This study demonstrates the importance of cultural competence in effective transfer of evidence-based education to a developing country context.	Non-transferrability of curricula which western-centric e.g. emphasis on self-reliance and individualism may not be culturally relevant; tailoring education to local context e.g. equipment, teaching styles, local language, appropriately dressed mannikins; making assumptions re. knowledge and resources; sustainability of program e.g. economic appropriateness, cultural competence in design and delivery, lack of evidence re. cost-effectiveness of LMIC programs; Impact of staffing levels on practice e.g. frequency of observations, type of care; problems evaluating program impact.	Cultural competence in design and delivery staff from HIC;						1, 2, 3	2a, 2b, 3	2/5
Gunathilake	2009	1. Formal patient education coverage increased from 0% to 35%. 2. Staff compliance	1. Interventions through adaptation of Sri Lanka's primary care	Politics e.g. importance of bottom-up pressure from staff and patients to change top-down decisions affecting	Influencing policy makers through training and education of healthcare						1,2	3	2/5

		with benchmarks set by the Ministry of Health improved for screening for blood pressure, foot examination, eye examination, checking and treatment of lipids and microalbumin testing, glycaemic control and blood pressure.	infrastructure and establishment of innovative partnerships enable the effective implementation of care with existing resources in the short term. 2. Media can be used for educating the public, promoting new attitudes, providing skills for improving health status and influencing both planners and health care professionals. 3. Training and education of health care workers and research collaborations can influence policy makers.	policy; lack of knowledge in patients; limited resources e.g. examination supplies, diagnostic tests; lack of staff skills.	workers and research collaborations; influencing planners and professionals through using the media to educate the public on health matters; engaging political leaders:									
Holm	2015	1. Increased levels of staff confidence 2. Increased levels of knowledge 3. Changes in staff practice to apply	A phased educational approach can improve healthcare workers' knowledge	Lack of research into long-term HIC/LMIC partnership education; developing cultural awareness and understanding of local issues; technology e.g.	Cultural awareness; having leadership and other skills or working in partnership;						1,2	2b, 3	3/5	

		the new knowledge.	through partnership in a developing country. Educating local providers is one way of ensuring that in-country healthcare staff will improve their medical knowledge and expertise.	computers, on-line resources; time for developments e.g. developing new teaching methods in local staff, time for staff teaching and learning due to large patient workload.	focus on Global Health Training Guidelines recommendation e.g. simultaneously developing long-term partnership, clarifying goals, expectations, and responsibilities through agreements and developing, implementing, and improving regular training; invited outside knowledge; buy-in from colleagues; trusting relationships; proven education and evaluation methods; phased approach; performance-based recognition e.g. certificates for achievements.															
Khanna	2018	Pre- and post-test identified knowledge gaps and improvement	The APLS course prepared participants to	Remoteness and limited resources; ensuring sustainability	Locally relevant issue and curriculum; sustainability –							1,2	2b	1						

		in APLS key concepts.	practice using APLS structured thinking and to facilitate a regional rollout of the training course. Next steps include developing a program for the monitoring and evaluation of regional hospital rollout trainings and a mechanism for mentoring the growth and sustainability of the training network.		train-the-trainer; longer-term, staged plans.								
Kisa and Grabski	2019	The Paediatric Surgical Foundation was developed following the meeting to formalize coordination between institutions. Through international collaborations, operating room capacity has increased. A pediatric general surgery	Collaborations between disciplines, both within LMICs and with international partners, are required to advance children's surgery. The unification of stakeholders across clinical disciplines and institutional partnerships can facilitate increased	1.Developing multidisciplinary collaborative working between stakeholders e.g. NGOs. 2. Lack of funding, resources and time 3.Lack of international training opportunities 4.Lack of research skills and opportunities. 5. Job opportunities for Ugandan staff	Sharing skills and resources between stakeholders; strengthening links between different LMIC institutions and clinical disciplines by consensus; building and maintaining relationships between local and international stakeholders.						1,2,4	2b,4a	4

		fellowship has expanded at Mulago and Mbarara hospitals supplemented by an international fellowship in multiple disciplines. Coordinated outreach camps have continued to assist with training and service delivery in rural regional hospitals.	children's surgical capacity. Such a process may prove useful in other LMICs with a wide range of children's surgery stakeholders.									
O'Heir	1997	1.The modules were appropriate and adaptable locally 2.Learners' knowledge improved 3.Concerns raised re. likelihood of learners being able to apply the skills 4.Learners felt time in clinical areas to learn and practice skills was too short.	The modules have the potential to strengthen and support the education of midwives in developing countries, enabling them to make motherhood safer and contribute to a reduction in maternal mortality by providing better midwifery care.	Applying new learning in practice e.g. lack of opportunity/appropriate cases/time/lack of transport for community visits, weak infrastructure and lack of regulatory measures resulting in lack of legislation to support practice of new skills, lack of support resources in practice; cultural relevance of materials e.g. topics; language issues; attrition due to outside pressures e.g. work and family commitments; lack of copies of educational materials for reference.	Easy to use and understand materials; appropriate support and encouragement for teachers and learners.					1,2,3	1, 2a, 2b	4/5
Peter	2016	1.significant improvement in	Cascading PTC courses may be	Resource limitations e.g. skilled staff, funding,	Appropriate paedagogical/					1	2a, 2b	3/5

		<p>knowledge and clinical confidence post-course. 2. "Non-doctors" demonstrated a greater improvement in knowledge and confidence. 3. The degree of improvement of MCQ scores differed significantly, with the cascading courses outperforming primary courses.</p>	<p>an effective model in delivering trauma training in low-resource settings, however further studies are required to determine its efficacy in improving clinical competence and retention of knowledge and skills in the long term.</p>	<p>medical resources, technology to support treatment protocols; financial e.g. addressed through cascading/local delivery (cheaper than overseas staff), free access materials; maintaining standards e.g. may reduce with cascading; translating improved knowledge and confidence into improved performance; creating effective learning environments e.g. making materials culturally relevant, local ownership and delivery to overcome language issues, teaching approaches and making materials relevant (note improved learning on cascaded programs).</p>	<p>delivery approaches; affordability - free teaching and learning materials; sustainability.</p>					
Prashad	2017	<p>1. Improved retention rates. 2. Participants felt that the program prepared them appropriately for working in resource-limited settings in Guyana. 3. 'Benefits' and 'Concerns' emerged as themes from the data.</p>	<p>The training program provides the necessary skills for doctors to work safely and reduces the number of doctors seeking overseas employment.</p>	<p>This paper is a review and evaluation of a style of training and does not focus on the content and delivery of the training in the same way as other papers.</p>	<p>Financial support for learners; programme addresses local needs; offering programmes in rural locations; mutual respect and trust between partners; promotes staff retention; recognition of</p>			2,3	1, 2a, 2b	4/5

					training by local employers;								
Raney	2019	1. Mentees showed some improvements but still struggled to understand diagnostic criteria. 2. Key barriers to high quality PE/E care included knowledge gaps, resource shortages, staff hierarchy between physicians and nurses, and poor relationships with patients. 3. Enablers included case-based and simulation learning, promotion of teamwork and communication, and effective leadership.	Simulation training improved the use of evidence-based practices in PE/E simulated cases and has the potential to increase nurse competency in diagnosing and managing complex maternal complications such as PE/E. However, knowledge gaps, resource limitations, and interpersonal barriers must be addressed in order to improve care. Teamwork, communication, and leadership are key mechanisms to facilitate high quality PE/E care.	Knowledge gaps in staff e.g. diagnostic criteria, drug calculations, trainers over-estimating staff knowledge; resource limitations e.g. staff, medications, equipment; interpersonal barriers e.g. doctor:nurse hierarchy, risk of violence from family members to staff.	Appropriate paedology/delivery; interdisciplinary communication; good leadership.						1	1, 2a, 2b, 3	4/5
Raven	2010	1. Enthusiastic response from participants. 2. statistically	Preliminary results indicate that the training package has	Political e.g. impact of local customs regulations on getting materials and	Contextualising programme; addresses a local need.						2	1, 2a, 2b, 3, 4a	4/5

		significant improvement in their knowledge and skills measured before and after training. 3. New knowledge and skills are generally put to good use.	improved knowledge and skills of trained health care providers and staff have applied these to make changes in practice.	equipment to some educational sites; professional hierarchies; language; lack of staff e.g. impact on course attendance, trainers delivering courses in own time; lack of reimbursement for local trainers; lack of training resources e.g. mannikins; lack of facilities for applying new knowledge and skills in practice; internal rotation of staff to non-relevant areas and subsequent skill loss and lack of continuity.									
Spiwak	2014	1.Improved knowledge and understanding of burns and their management 2.Increased confidence in managing patients 3.Learners would like a longer program with more hands-on experience	It is possible to create a course that translates knowledge from a HIC setting to meet the needs of the end-user in a LIC setting.	Program length e.g.more formal teaching (incl. nutritional skills) and hand-on practice; language barriers; lack of resources – including in practice e.g. medical supplies; poverty e.g. malnourishes patients, food shortages; poor NTS e.g. teamwork, patient involvement; teaching techniques used; staff shortages.	Designed to meet local needs; contextualised; adjustments made in response to feedback; sustainability – instructor course planned.						2	2a, 2b	3/5
Strother	2012	1.Improved knowledge of the fundamental biology and pharmacology behind cancer medicine.	To redress the minimal impact this short-term intervention had on these critical areas of nursing	Lack of resources; lack of formal education for staff; lack of professional recognition for staff skills and knowledge; making the curriculum local relevant and	Tailored to local needs; collaborative, multi-professional development between HIC and						2	2b	4/5

		2.improved knowledge of cancer nursing theory 3.practical cancer nursing skills remained less than ideal.	practice, AMPATH-Oncology is working to develop a resource appropriate competency-based certification program to reinforce the classroom-based learning of this workshop.	applicable e.g. needs, realities, resources, more time needed for practical skills and competencies.	LMIC; developed slowly following discussion and observations of current practice; flexibility – relevant to a variety of healthcare settings.								
Vargas	2012	1.Increased use of laparoscopic cholecystectomy in Mongolia 2.Self-sustaining training as Mongolian staff take on teaching roles.	The traditional surgical approach to gallbladder disease in Mongolia has been challenged and has, in turn, been a stimulus for improvement in the medical community.	Making the education sustainable and locally relevant e.g. train the trainer, local delivery, support from local leaders, avoiding ‘brain drain’; language barriers; infrastructure e.g. stability of electricity supply, surgical and anaesthetic equipment, beds, autoclaves, medicines, sustainable supply and repair chain; public acceptance of new innovations e.g. education by medical staff,	Developed in collaboration with Ministry of Health and university; included local cultural/political expert; infrastructure development so have equipment etc. to use with new skills; sustainability through local surgeons becoming teaching faculty for the programme; navigating culture and political nuances;						1	2b, 3	4/5

					changing public views so new surgical approaches become acceptable – culture change; MDT approach, including experts from industry.	Yellow	Green	Yellow	Yellow	Green			
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**\*Quality Indices**

E– Educational underpinning   **Cu** – Curriculum   **S**– Setting   **P** - Pedagogy   **C**– Content   **S** – Strength of conclusion

Green = low risk of bias   Yellow = unclear risk of bias   Red = high risk of bias