

Introduction to Environmental Engineering and Science

The contemporary physician assistant/associate (PA) movement began in North America and Africa in the mid-1960s.

As of 2022, the adoption of PAs has spread globally across a variety of health systems and at least sixteen countries have been in various stages of expansion of PA-like medical workers (nonphysician clinicians) that function under the supervision of a doctor:

This post examines countries where advances are being made or the PA model is evolving.

You can absolutely apply as an international medical graduate (IMG), but you will need to have your degree evaluated by a service such as WES, then have a US degree granted, if eligible. All prereqs must be completed in the US as well. All applicants, regardless of their previous degree, will matriculate through the entire program. - Elissa Love, BCM PA Program in Houston

PAs in Canada

Canadian PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in Canada: Yes

Canadian PA Salary: \$115,090 (CAD) / yr and \$55 (CAD)/ hr (\$86,180/yr and \$41/hr USD)

Number of PA programs: 4

Number of PAs practicing in Canada: 500

Prescription rights: Yes. PAs cannot prescribe narcotics or controlled substances under any circumstance.

Canadian Professional PA Association: Canadian Association of Physician Assistants (CAPA)

Canadian PA certification exam: PA Cert Exam - The PA Cert Exam is 4 hours in duration and consists of 250 multiple choice questions (PA Cert Exam Blueprint)

Canadian Certification Maintenance: Maintain certification by completing 40 credits annually and must also complete at least 25 credits in each section of the Maintenance of Certification Program before their cycle ends.

Canadian PA Day: November 27'th

U.S. PAs are eligible to take the Canadian Certification Exam, but Canadian-trained PAs, unfortunately, are not allowed to sit for the PANCE exam.

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The Canadian PA model began in the Canadian Armed forces approximately 40 years ago during the Korean war and transitioned to the present PA concept in 1984. It was further revised in 2002.

There are approximately 500 PAs practicing in Canada, roughly 300 of which are practicing in Ontario.

There are three non-military university PA programs in Canada located at the University of Manitoba in Winnipeg, McMaster University in Ontario, and the Consortium of PA Education in Toronto. Alberta's University of Calgary has a program in development.

The Canadian forces program is taught at the Canadian Forces Health Services Training Centre Program

All programs are 24 to 25 months in duration and deliver curricula that support the Canadian Association of Physician Assistants' (CAPA) scope of practice statement and Canadian Medical Education Directives for Specialists (CanMEDS) PA competencies.

Certification is administered by the Physician Assistant Certification Council of Canada (PACCC) which established an independent national certification examination and registry. The first national exam was held in 2005.

It is estimated that 38% of Canadian PA serve in primary care settings, 13% in internal medicine, 18% in surgical practice, and 19% in emergency medicine.

American certified Physician Assistants may work in Canada.

They do not need to complete a PA school in Canada to practice.

Once a PA graduate has completed an accredited PA program (In Canada or the United States), they may challenge the PA Entry to Certification Exam (which is overseen by PACCC). If they successfully pass they are designated "CCPA", Canadian Certified Physician Assistant.

American PAs who have successfully completed an accredited American Physician Assistant Program, and challenged and passed the NCCPA's Certification Exam can practice in Canada.

PAs in the United Kingdom

UK PA Quick Facts:

Name: Physician Associate

Can US PAs practice in the UK: Yes

UK PA Salary: Â£33,222 (\$43,000 US) and Â£49,969 (\$64,000 US)

Number of PA programs in the UK: 31 (see list)

Number of PAs practicing in the UK: 350 practicing in both primary and secondary care and another 550 in training, with numbers in training predicted to rise.

Do UK PAs have prescription rights: No

UK Professional PA Association: Faculty of Physician Associates (FPA) of the Royal College of Physicians

UK PA certification exam: Physician Associate National Certification and Recertification exam

UK Certification Maintenance: In order to remain on the Physician Associate Managed Voluntary Register (PAMVR) physician associates have to sit the recertification examination every six years. Physician associates have three attempts to sit and pass the certification examination.

UK PA Day:?

The first PAs to work in the UK were Americans. In 2003 two PAs were recruited to primary care posts in economically distressed Wes Midlands followed by 20 experienced PAs working in Scotland from 2006 - 2008.

Despite more than a decade of scores of PAs working in the NHS, there is still no official recognition by the U.K.

government or by the nongovernmental medical licensing bodies such as the General Medical Council.

Until officially recognized, U.K. PAs are able to work under the supervision of a doctor but are unable to prescribe medicines or refer patients for an x-ray or CT scan. In practice, this means physician associates in the UK have to ask a GP colleague to sign a prescription or x-ray referral form on his or her behalf.

There are about 300 PAs in the United Kingdom, including about 20 Americans.

The United Kingdom's version is a two-part process, a 200-question multiple-choice examination and a 12-station Objective Structured Clinical Examination (OSCE).

The Faculty of Physician Associates (FPA) runs the Physician Associate National Certification and Recertification exam. The certification exam is a 14 station OSCE and 200 single best answer (SBA) exam sat by students who have qualified from UK physician associate programs. They are then required to pass their National Certification exam before they can be declared fit to practice in the UK. Once they have passed their exam, providing they are a member of the FPA, they can then be registered on the Physician Associate Managed Voluntary Register (PAMVR).

American PAs is that at present, PAs who are already currently NCCPA certified are able to apply to become a member of the Managed Voluntary Register (MVR) without first having to undergo the UK examination process.

Resources:

PAs in the Netherlands

Netherlands PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in the Netherlands Yes

Netherlands PA Salary: € 82,402 (EUR)/yr / € 40 (EUR)/hr (\$106,000 /yr and \$51 /hr US)

Number of PA programs: 5

Number of PAs practicing in the Netherlands: 1,000 +

Prescription rights: Yes! PAs are enabled by law to practice medicine autonomously, albeit at all times in collaboration with a medical doctor

Netherland Professional PA Association: Dutch Association of Physician Assistants (NAPA)

Netherland PA certification exam: None - must complete eligible PA program to be able to practice

Netherland Certification Maintenance: minimum of 16 hours per working week and have followed CME totaling 200 hours (40 hours per year) in the last registration period of 5 years are considered for re-registration.

Netherland PA Day: Coming soon

The PA role was first introduced to the Netherlands in 2000 using extensive experience from the US.

After a five-year experiment, the Dutch parliament and Dutch Senate agreed to give PAs and NPs full independence in diagnosing, initiating treatment and performing medical procedures. These medical tasks are mostly non-complex procedures that can be executed autonomously by an NP or PA; This also includes prescribing medication.

There are now five Master of Physician Assistant (MPA programs) in the Netherlands

While students on campus (1 day per week) are learning the core knowledge and skills required for all PAs, each student simultaneously receives additional clinical expertise in a designated medical specialty by actually learning in that area the rest of the working week. Students are contracted through a "training and employment contract" with a minimum of 32 hours per working week. On top of this, students are expected to engage in self-study.

As a result, PA students have both didactic (to acquire generic competencies, modeled of the medical curriculum) and clinical days (to acquire specialty competencies, analogous to that of training medical residents) interspersed

throughout the duration of their training. Fully qualified PAs are known as MPAs. Dutch PAs work across all areas of medicine, including general practice, and because of their unique approach to their training, they are found in subspecialty areas in greater numbers than PAs elsewhere.

At the time of graduation, PAs can voluntarily enroll in NAPA's Quality Register. The Quality Register contributes to ensuring the quality of professional practice by keeping track of developments in the profession (i.e., by means of continuing medical education [CME]).

Being enlisted into the Quality Register indicates the PA to be a graduate of a Dutch-Flemish Accreditation Organization's accredited MPA program and is clinically active at the time of registration.

The registration period covers a term of 5 years after which a re-registration is required.

Only those who have been practicing as PAs with a minimum of 16 hours per working week and have followed CME totaling 200 hours (40 hours per year) in the last registration period of 5 years are considered for re-registration.

Resources:

PAs in Liberia

Liberia PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in Liberia: Yes

Liberia PA Salary: 169,000 LRD/yr

Number of PA programs: One

Number of PAs practicing in Liberia: ~1000+

Prescription rights: Yes! PAs in Liberia are allowed to do all medical activities with the exception of surgery

Liberia Professional PA Association: Liberia national Physician Assistant Association (LINPAA)

Liberia PA certification exam: State Board Exams administered by the Physician Assistant Association Board of Examiners and licensure

Liberia PA Certification Maintenance: Unkown

Physician assistant training in Liberia started in the 1960s with the first batch of PAs graduating from 1966-1970

PA graduates in Liberia train for three years in both theoretical and clinical activities and are allowed to perform all medical activities with the exception of surgery.

Physician Assistant programs must be fully accredited by the Liberia national Physician Assistant Association (LINPAA) and the Liberia medical & dental Association Board (LMDA).

To legally practice medicine as a physician assistant in Liberia, the PA must pass the State Board Exams administered by the Physician Assistant Association Board of Examiners & licensure

PA programs in Liberia:

The first program was at the Tubman National Institute of the Medical Arts starts at the John F. Kennedy Memorial Hospital in Monrovia

at the John F. Kennedy Memorial Hospital in Monrovia A second program (Baptist Missionary PA Program) has recently started with one graduated group

Cuttington University is starting a third program in Suakoko

The Mother Pattern College of Health started a Bachelor's Degree program for PAs since 2012 and the first batch of BSC

PAs should have graduated August of this year but due to the Ebola outbreak, it is suspended. The program is expected to continue.

Resources:

Liberia- where physician assistants are vital in the care of the country

New PA Graduate working in Liberia

Liberia medical dental

PAs in India

India PA Quick Facts

Name: Physician Assistant

Can US PAs practice in India; Yes

India PA Salary: $\hat{a},^1 15,794.09$ (INR)/ month / $\hat{a},^1 189,528$ (INR)/yr (\$200 / month and 2,623.07 / yr USD)

Number of PA programs: 47

Number of PAs practicing in Indian: 1,100 +

Prescription rights: Yes but limited that is in specified areas and under specified conditions

India Professional PA Association: Indian Association of Physician Assistants (IAPA)

India PA certification exam: Developing

India Certification Maintenance: Developing

India PA Day: No

Physician assistants came on board in India in 1992 under the supervision of United States trained cardiac surgeon Dr.K.M Cherian who graduated the first PAs under the auspices of the Madras Medical Mission, Chennai.

Today, 47 PA programs exist in India with collaboration from ten universities. The vast majority of these (46 programs) are located in southern India (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu)

The Indian programs are hosted by training institutes and facilitated by affiliated universities granting the degrees. Having prior health care experience as a nurse or other allied health profession is mandatory on all Indian PA school candidates.

Programs range in length from 2 to 4 years. They also vary from baccalaureate to postgraduate diploma (as per the U.K. approach). Master's degree level programs were in existence in the earlier days but were downgraded because there were few applicants.

There is still no formal accreditation process for PA programs in India but under the purview of the Indian Ministry of Health and Family Welfare, the National Initiative for Allied Health Sciences (NIAHS) task force has been primarily created to bring in regulation in the education and practice of all allied health care programs with a long-term vision of creating a governance council.

In addition, a PA task force was initiated in 2015 with the purpose of defining and establishing a nationally standardized curriculum. The result is the Model Curriculum Handbook "Physician Associate, which is currently in the final stage of development and will soon be presented to the government.

India now has over 300 PA graduates in India, employed in various hospitals across the world.

Resources:

PAs in Ghana

Ghana PA Quick Facts:

Name: Medical Assistant

Can US PAs practice in Ghana:?

Ghana PA Salary: 1800 Ghana Cedis/month (\$362 USD / month)

Number of PA programs: 7

Number of PAs practicing in Ghana: 2000+

Prescription rights Ghana: Yes, but according to rules established by GHS, PAs are not allowed to administer certain first-line medications, as this responsibility is reserved for physicians.

Ghana Professional PA Association: The Ghana Physician Assistants Association [GPAA]

Ghana PA certification exam: Licentiate Examination

Ghana Certification Maintenance: Developing

Ghana PA Day: no

In Ghana, physician assistant (PA) refers to three distinct groups of healthcare professionals trained in the medical model to practice medicine and dentistry:

PAâ€™Medical, also known as medical assistants

PAâ€™Dental, also known as community oral health officers

PA's Anesthesia, also known as nurse anesthetists

The physician assistant profession started in 1969 in Ghana at the Kintampo Rural Health Training School now known as the College of Health and Well-Being.

Initially, the program was designed for nurses as an advanced study lasting 18 months. Enrollment was open for nurses who had at least three years of work experience. Because of increasing demand for MAs, the program was redesigned in 2007, also enabling high school graduates and other health workers to enter MA training, parallel to the existing program.

This new direct admission program is a 4-year curriculum that includes intensive clinical internships in the last year. Seven schools now train PAs in Ghana, and seven schools are applying for accreditation to start programs.

The first two inaugural bachelor PA programs were started at Cape Coast University and Central University College. Universities in Ghana offer a PA program often referred to as a B.Sc. Physician Assistantship.

After graduation, PAs can obtain a license to practice through the Medical and Dental Council of Ghana, designated by the Ministry of Health as the regulatory body to regulate PA training and practice in Ghana. To get licensed, PAs have to sit for the "Licentiate Examination."

One will only be allowed to work as a physician assistant if they have the following qualifications:

If they have completed their study as a Physician Assistant and graduated from a recognized institution.

They have passed the Licentiate Examination

If after their studies, they have been registered by the Medical and Dental Council. This body has been tasked to set the standards of medical practitioners in Ghana.

The PAs Medical are predominantly stationed in primary care settings, with the majority serving communities in the rural and remote parts of Ghana. Initially, PAs in Ghana were predominately male, but now women make up 50% of the

Ghana PA workforce.

Ghana has only 3,500 physicians and dentists, and 2,500 Medical Assistants (MAs) (PA analog) for the care of its 24.2 million people. Because of this, PAs are referred to as the bedrock of primary healthcare in Ghana as they serve the primary care needs of 70% of the population seeing on average 90 - 150 patients per working day!.

Resources:

PAs in South Africa

South Africa Clin-A Quick Facts:

Name: Clinical Associate

Can US PAs practice in South Africa? Yes

South Africa Clin-A Salary: 69 (US\$4.53)/hour, R122,084 (US\$ 9,416)/Year

Number of Clin-A programs: 3

Number of Clin-As practicing in South Africa: 920

Prescription rights in South Africa: Yes

South Africa Professional Clin-A Association: The Professional Association of Clinical Associates in South Africa (PACASA)

South Africa Clin-A certification exam: Not required

South Africa Certification Maintenance: Unknown

South Africa Clin-A Day: not yet

In South Africa, physician assistants are referred to as clinical Associates and are equivalent to PAs. Clinical Associates were established by The National Department of Health in South Africa in 2002 when there was a need for so-called mid level medical workers thus a group of healthcare providers was invited to work with them in developing the program of study.

They trained to provide emergency care, conduct rounds, carry out and assist with diagnostic and therapeutic procedures, and offer holistic care to patients with a range of common acute and chronic conditions.

The first 23 students began the program in 2008 and entered the profession in 2011 after graduation and, as of 2017, there were 920 graduates, primarily in hospital settings in all nine provinces of South Africa.

Programs at Johannesburg's University of the Witwatersrand, the University of Pretoria, and Walter Sisulu University in the Eastern Cape Province are all offered in partnership with national and provincial departments of health, as well as the South Africa Military Health Service (SAMHS).

All Clinical Associate programs follow a 3-year curriculum, which is competency-based and delivered in a variety of formats. The curriculum adopted for training associates was set up jointly by the national bodies, based on the conditions and normal activities carried out in district hospitals. This leads to a bachelor of clinical medical practice degree. Qualified CAs are registered with the Health Professions Council of South Africa.

Almost all the graduates are offered jobs in several district hospitals in the country, mainly in rural areas, with a few in urban areas.

The Professional Association of Clinical Associates in South Africa (PACASA) was founded in 2012. The board provides guidance on the cases that are to be handled by the Clinical Associates, requirements for professional progression and licensing issues.

Resources:

PAs in Australia

Australia PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in Australia: Yes

Australia PA Salary: AU\$43.27 (US\$32.87)/hour and AU\$167,101/month, AU\$90,000 (US\$ 68,363)/annum

Number of PA programs: There is a single educational program at James Cook University (JCU) offering a 3-year bachelor of health science (PA) degree

Number of PAs practicing in Australia: In 2016, there were approximately 40 Australian-trained physician assistants

Prescription rights Australia: Physician assistants are not allowed to prescribe drugs in Australia

Australia Professional PA Association: The Australian Society of Physician Assistants (ASPA)

Australia PA certification exam: None

Australia Certification Maintenance: None

Australia PA Day: Not yet

Compared to the United States, the Australian healthcare system has a unique structure. Based on extensive evaluations and benchmark measures, it functions remarkably well. So the need for physician assistants in Australian health care has been debated.

The first physician assistant program started at the University Of Queensland (UQ) in Brisbane in 2009. The 2-year master's degree program graduated two cohorts totaling 34 students before it closed in 2012.

The reasons for closure included a lack of support from the institution and competing priorities within the School of Medicine.

Queensland is the only state that has allowed physician assistants to work in the public health system.

There is now a single educational program at James Cook University (JCU) College of Medicine & Dentistry in Townsville, Queensland offering a 3-year bachelor of health science (PA) degree.

JCU has two active cohorts totaling 15 students. An additional cohort of 18 students started the course in February 2016. The JCU course is a fully integrated component of the College of Medicine & Dentistry.

PA graduates work in underserved populations; in particular, rural, remote, tropical, and indigenous Australia. Diverse segments of the medical profession have been advocates for the development of PA programs in Australia. These include:

The Australian College of Rural and Remote Medicine (ACRRM)

The Rural Doctors Association of Australia (RDAA) has endorsed the ACRRM policy

The Grattan Institute

The Australian Society of Physician Assistants (ASPA) started in 2010 and is now the official representative professional body of Australian PAs.

Resources

PAs in the Kingdom of Saudi Arabia

Kingdom of Saudi Arabia PA Quick Facts:

**Pilot project in Saudi Arabia has ended

Name: Assistant Physician

Can US PAs practice in Saudi Arabia: ?

Saudi Arabia PA Salary: SAR 132,000/year

Number of PA programs: ?

Number of PAs practicing in Saudi Arabia:

Prescription rights Saudi Arabia: Yes, but not in all situations

Saudi Arabia Professional PA Association: NONE

Saudi Arabia PA certification exam: Comprehensive Certifying Examination

Saudi Arabia Certification Maintenance: -

Saudi Arabia PA Day: No

The first PA program in the Middle East, offered by the Medical Services Directorate of the Ministry of Defense and Aviation in the Kingdom of Saudi Arabia, was launched in September 2010 at the Prince Sultan Military College of Health Professions in Dhahran, Saudi Arabia.

The program was established with aid from George Washington University Medical Faculty and Associates. The government has now created a keen interest in developing the growth of this profession to address the growing need for primary care providers in the Kingdom.

Physician Assistants (PA) in Saudi Arabia are trained at the Prince Sultan Military College of Health Sciences Al Dhahran.

The program is 28-month long with didactic and clinical training; it started with 46 students and grants a master's degree in applied health science.

With collaboration with the Prince Sultan Military College of Health Sciences and the George Washington University Medical Faculty Associates in the Department of Emergency Medicine, 40 PAs are trained per year.

The first set of students graduated in 2013, Saudi PAs will be known as assistant physicians (APs) because of an issue with how the original PA title is translated into Arabic

A graduate PA works as a military medical officer (first lieutenant) in the Ministry of Defense's medical service division after completing a 6-month internship in emergency medicine under physician supervision

Upon successful completion of the program, graduates qualify to sit for a comprehensive examination, which includes an objective structured clinical examination and an oral examination.

Currently, the Ministry of Health Specialist (licensing body) and the Ministry of Higher Education (accrediting) do not recognize PAs formally.

Resources

PAs in Germany

German PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in Germany:?

Germany PA Salary: 3,600 EUR per month (\$4,076 / month US)

Number of PA programs: 7

Number of PAs practicing in Germany: 100+

Prescription rights in Germany: No prescription right

Germany Professional PA Association: None

Germany PA certification exam: Yes, state certification permits

Germany Certification Maintenance: None

Germany PA Day: None

The first physician assistant (PA) program in Germany opened its doors at Steinbeis University Berlin (SUB) in 2005. The university is a private German university, which was established in 1998, based in Berlin but also has institutions in Baden-Württemberg.

PA programs in Germany are offered through universities of applied science and offer a bachelor's degree. There are currently eight universities in Germany that offer this type of education and professional development. The duration of each program is 36 months.

Physician Assistant Programs in Germany:

Physician Assistant salaries in Germany range between 1,800 EUR per month (minimum salary) to 5,400 EUR per month (maximum salary), strictly based on experience, skills, gender, or location.

Currently, German PAs have a relatively limited scope of practice, requiring direct supervision by the attending medical doctor. Germany's medical hierarchy has been generally reluctant to entrust any significant aspects of medical practice to non-physicians. Despite this barrier, the German PA profession is steadily growing because of access and efficiency pressures within the medical system.

The nationwide recognition of the PA as a profession will not be complete until all the 16 states in Germany signed

on.

Resources:

PAs in New Zealand

New Zealand PA Quick Facts

Name: Physician Associate

Can US PAs practice in New Zealand: Yes

New Zealand PA Salary: NZ \$67/hr and Average of NZ \$140,061/yr (\$46 USD/hr and \$96,000 USD/yr)

Number of PA programs: None

Number of PAs practicing in New Zealand: 6

Prescription rights New Zealand: No, physician assistants can't prescribe

New Zealand Professional PA Association: New Zealand Physician Associate Society (NZPAS)

New Zealand PA certification exam: Developing

New Zealand Certification Maintenance: Developing

New Zealand PA Day: None

Interest in using PAs in New Zealand began in 2000 with the first pilot study on PAs and the adoption of their roles in New Zealand taking place in 2010.

These pilot studies were carried out by four District Health Boards in the Northern Region of New Zealand with collaboration with The University of Auckland Faculty of Medical and Health Sciences namely:

Two US-trained PAs by CMDHB worked for twelve months, beginning in 2010. The result of their work and commitment to patient care lead to the birth of the New Zealand PA Pilot Project which began in late 2012.

The second project recruited seven U.S.-trained PAs for a two-year commitment from 2013 to 2015.

In 2014, there were six physician assistants working in family practice settings on the North Island, four in the Hamilton area, and two in Tokoroa (rural area).

As of 2019, there are six US-trained PAs working in New Zealand.

Limitations

No prescription rights

No full approval as a profession by the New Zealand Ministry of Health

Resources:

PAs in Afghanistan

Afghanistan PA Quick Facts

Name: Physician Assistant

Can US PAs practice in Afghanistan: No

Afghanistan PA Salary: Not reported

Number of PA programs: 1

Number of PAs practicing in Afghanistan: 65+

Prescription rights Afghanistan: No prescription rights

Afghanistan Professional PA Association: None

Afghanistan PA certification exam: Developing

Afghanistan Certification Maintenance: None

Afghanistan PA Day: None

Physician Assistants are a new concept in Afghanistan.

Afghanistan has one of the most under-resourced health systems in the world. In an urgent effort to increase the overall size of the health workforce in the country a NATO training mission in Afghanistan developed and launched a PA course in 2010.

The primary goal of this program is to increase the overall number of practicing clinicians and to graduate PAs that will be ready to face the challenges of providing medical care in a war zone.

In correlation with the U.S and Canadian military medical course, the Afghan PA program located at the National Military Hospital compound in Kabul offers a 12-month academic curriculum and a month-long pharmacology course. In addition, there is a 16-week clinical phase, which includes training in emergency medicine and trauma.

The program has both male and female students and 65 PAs are expected to graduate per cohort. Females PAs work at the district military hospitals while male PAs will provide care in active military combat units.

The Afghanistan PA profession currently only exists as part of the military system but plans are underway to expand it

into the civilian medical system as well.

Afghan PA programs

Resources:

PAs in Israel

Israel PA Quick Facts:

Name: Physician Assistant

Can US PAs practice in Israel: Yes

Israel PA Salary: \$ 139 (ILS)/hr /288,644 (ILS)/yr

Number of PA programs: 1

Number of PAs practicing in Israel:50+

Prescription rights Israel: Yes, they have prescribing rights though not in all cases

Israel Professional PA Association: Ministry of Health (MOH)

Israel PA certification exam: Normal Training course

Israel Certification Maintenance: None

Israel PA Day: None

The development of physician assistants in Israel arose from the need for increased access to emergency medicine,

surgery, internal medicine, and pathology. Overcrowding of hospitals and the urgent demand for services have resulted in strong support of the PA role in Israel.

The first program for Israeli PAs began in 2016 at Tel Hashomer Sheba Medical Center with 35 students, mostly experienced paramedics who also hold a bachelor's degree. The program is run by the Ministry of Health Training and Development Department and is focused on emergency medicine (approximately nine months) with a mix of didactic and clinical training at their respective site of employment.

The courses in anesthesiology and pathology are still under development.

In order to be licensed as an Israeli PA, all applicants are required to complete a MOH-approved training program. The following professionals are eligible to apply to the Israeli PA course in Emergency Medicine:

Israeli-trained paramedics

Certified PAs from other countries

MDs, whose degrees have been approved to take the licensing exam by the Israeli Ministry of Health.

The first class of urgent care physician assistants graduated in July 2017 with a total number of 31 students now working in urgent care centers all over Israel.

Resources:

PAs in Bulgaria

Bulgaria PA Quick Facts:

Name: (PQ) Physician Assistant

Can US PAs practice in Bulgaria: Yes

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Bulgaria PA Salary: 14 Б»Б². (BGN)/hr and 28 261 Б»Б². (BGN)/yr (\$8.17 and \$16,482 US)

Number of PA programs: 1

Number of PAs practicing in Bulgaria: 30 +

Prescription rights Bulgaria: None

Bulgaria Professional PA Association: Developing

Bulgaria PA certification exam: Developing

Bulgaria Certification Maintenance: Developing

Bulgaria PA Day: Developing

The physician assistant (PA) profession was established in Bulgaria in 2014 before the existence of PAs in Bulgaria feldschers provided a similar role from 1878 to 1999 but feldscher training was later discontinued in 1999 because of a physician surplus.

In 2014 the first two formal university-based, four-year bachelorâ€™s level PA training programs were based on the American PA curriculum.

Since January 2016, PAs are now included in the register of regulated professions.

PA programs in Bulgaria:

Resources:

PAs in Ireland

Republic of Ireland PA Quick Facts:

Name: Physician Associate

Can US PAs practice in Ireland: Not since pilot project ended

Ireland PA Salary: â,-36 (EUR)/hr andâ,-75,148 (EUR)/yr (\$41 US /hr and \$85,702 /yr)

Number of PA programs: one

Number of PAs practicing in Ireland: 25+

Prescription rights Ireland: No prescription rights

Ireland Professional PA Association: Irish Association of Healthcare Assistants (IAHA)

Ireland PA certification exam: Developing

Ireland PA Certification Maintenance: None

Ireland PA Day: None

The PA profession in Ireland began when the Royal College of Surgeons in Ireland carried out a two-year pilot project in 2015 recruiting four PAs from North America, three from Canada, and one American PA in surgical subspecialties in Dublin.

Although still at the embryologic stage of the profession the first program started in 2016 with a class of seven and the second class in 2017 with fourteen students. The first cohort of six graduates is pioneering the profession in Ireland.

With the goal of achieving improved service delivery and better continuity of care, the first Irish PA training

program offers a 24-month Master of Science in Physician Associate Studies degree.

By the autumn of 2016, the Irish Society of Physician Associates was established.

Drivers for exploring the PA role in the Irish hospital setting included the clinical teams'™ over-dependence on non-training doctors compared to international norms.

PA programs in Ireland:

Resources:

PAs in Kenya

Kenya Clinical Officers (CO) Quick Facts:

Name: Clinical Officers (COs)

Can US PAs practice in Kenya: Yes - must achieve designation as clinical officer

Kenya CO Salary: KES 60K/ month (\$542 US/mo and \$6,504 US/yr)

Number of CO training programs: ~12

Number of registered COs: ~24,106

Prescription rights in Kenya: Yes

Kenya Professional CO Association: Clinical Officer's Council (COC)

Kenya CO certification exam: COC pre-internship examination

Kenya CO Certification Maintenance: No further examination outside of the pre-internship COC exam is required to practice.

The birth of Clinical Officers (CO) began in 1928 when Kenya, then occupied by the British, decided to train a select group of residents to practice medicine and provide care to the local population.

Without official Kenyan doctors present inside its own borders, the goal was to fill the gaps in provision of healthcare to the constituents of the country.

In 1989, a council was created as a regulating body for the CO. Currently there are 66 training institutions for Clinical Officers including Government, faith-based, private, and 12 universities. So far 2656 Clinical Officers with higher national diploma have been trained, and 715 degree Clinical Officers have also been trained. There are 23,000 Clinical Officers registered by the Clinical Officers' Council (COC) today.

Clinical Officers training:

Is a four or five-year professional diploma or degree programme accredited by the Clinical Officers Council involving

One year of pre-clinical training in medical sciences followed by

Three or four years of training in clinical medicine, surgery and community health including a mandatory one-year internship and

Registration, licensing and gazettement by the Clinical Officers Council giving

Unlimited practice rights with

Specialisation and private practice allowed and eligible for full professional membership of the Kenya Clinical Officers Association (KCOA)

The current training follows international guidelines and the two qualifications are awarded jointly on successful

completion of a comprehensive nine trimester programme of full-time study, practicals and examinations which are covered over three years leading to a fourth mandatory year of internship in a teaching hospital.

A fifth and sixth residency specialisation years are undertaken after registration by the Clinical Officers Council and three years of work experience in general medicine which leads to the award of a general degree in clinical medicine or a specialist diploma in pediatrics, orthopedics, psychiatry, anaesthesia, reproductive health and other specialties.

A clinical officer is therefore able to graduate and join the workforce in a minimum of four calendar years and provides medical services within the full scope of family and emergency medicine or within a narrower scope depending on their area of specialisation.

The work of a CO is important in providing physician type services in district hospitals and rural areas in Kenya.

Even though COs are important service providers their role is not clearly understood (or defined), which has resulted in role conflict. It is suggested that their role be redefined, moving from that of "substitute clinician" to professional "primary care clinician", with this being supported by the health system.

For a graphical breakdown visit: Wordmatch Kenya

The Future of International PAs

The introduction of PAs into health systems occurs because their education is less expensive and time-intensive than physicians. In addition, graduates are more likely to occupy roles where there is a scarcity of doctors such as in rural and underserved areas.

In most instances, a physician-dependent role permits their introduction into health systems in a non-threatening manner to doctors and their practices. The utilization of PAs, particularly in primary healthcare roles, increases access to services, is cost-beneficial, and shows a physician-equivalent quality of care.

Conclusion: The PA has been a remarkable health workforce policy development that has spread among countries' health

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systems and is likely to continue!

Articles and books worth reading

Download the Infographic: Countries Where Physician Assistants Can Work Around the World

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Reference

[Value Engineering: Practical Applications...for Design, Construction, Maintenance and Operations](#)

[Electrochemical Engineering](#)