Sonography Education in Australia, Canada, and The United States

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Introduction

- Sonographers perform medical diagnostic procedures that use high frequency sound waves to produce visual images of human organs, tissues or blood flow inside the body (Misericordia University, 2021). In Australia, Canada, and the United States, sonographers must pass registration or certification examinations to become professionals in the field. The educational systems to become a sonographer are very different in each of these three countries depending on the length of schooling required to obtain their sonography degree or the requirements that students must complete. Some commonalities between the educational systems include the ability for students to receive financial aid. In this Literature Review, a comparison of the secondary and post-secondary educational process will be discussed.

Overall Education

- Each of the three countries requires students to attend primary and secondary schools.
- In **Australia**, secondary school consists of Years 7 to 10. In certain territories, students can earn a "Year 10 Certificate" upon completion of Year 10 (Australian Government, 2021).
- In **Canada**, there is no centralized ministry of education causing the education to be governed by each province individually (Chen, 2017).
- After high school is complete, students have the opportunity to continue their education, join the workforce, or enlist in the military.
- In **Australia**, students can receive scholarships or federal student loans like the US. This assistance is called HECS-HELP. This is a loan that is given to students that attend university in Australia (Australian Government, 2018).
- In **Canada**, students who qualify for student loans will be given 60% of their loan amount as a Canada Student Loan (Canadian Universities, 2019). The rest of the 40% comes from local organizations and private lenders.
- In **The United States**, a student may be eligible for a scholarship or they can receive federal student loans through the government. In the United States, the loans are provided through Federal Student Aid and these loans will need to be paid back by the student.

Australia

- Sonography in Australia began in 1959. The first images of a late pregnancy were taken at Royal Hospital for Women in 1962. Many first generation clinical sonographers used to attend a course that had a speaker from the United States and taught them new knowledge and techniques (Gill, 2018).
- In Australia, the student must complete an undergraduate degree first in order to be considered for the postgraduate sonography program. The undergraduate degree must be in Applied Sciences (ASA, 2021).
- In this postgraduate program, the student must complete clinical hours. The amount of training hours is around 2200 hours; this is equivalent to three days per week over the span of two years (ASA, 2021).
- In Australia, sonographers may practice across a range of ultrasound imaging disciplines, including: abdomen and chest, breast, cardiac, musculoskeletal, obstetric and gynaecological, paediatric, small parts, and vascular (Seek, 2021).
- The annual accreditation is the Australian Sonographer Accreditation Registry (ASAR).
- A sonographer must be an AMS (Accredited Medical Sonographer) to deliver medical ultrasound services under Medicare.
- According to the ASAR website, some of their objectives as an accrediting body are as follows: to set uniform, minimum standards of sonographer training and education in Australia, to assess and to accredit programs of sonographer training and education, to accredit medical sonographers, and to advise education, government and statutory bodies and professional and scientific societies on any aspect of accreditation of medical sonography (ASAR, 2021).

ASAR
Australian Sonographer Accreditation Registry

(ASAR, 2021)

- Once a sonographer is ASAR accredited, to maintain on the register, they must pay their annual fee and complete at least 60 hours of Continuing Professional Development every three years (Sonographer.org).

Canada

- The Canadian Society of Diagnostic Medical Sonographers was founded in 1981. This society has a conference every year similar to the Society of Diagnostic Medical Sonography in the US. National registries in Canada began in the early 1980's and began to take shape in 1993 (Sonography Canada).
- According to Nancy Chouinard, a retired Canadian sonographer and sonography program director, programs in Canada vary greatly depending on the region and university (N. Chouinard, personal communication, March 30, 2021).
- Some programs are post graduate diploma programs, which students are able to attend after having other health care training. Other diploma programs are 2-3 years in length and students are able to attend these programs without having previous healthcare experience (N. Chouinard, personal communication, March 30, 2021).
- Currently, there are only two four-year degree programs for sonography (N. Chouinard, personal communication, March 30, 2021).
- Accreditation Canada produces organization-specific, sector-specific, national and jurisdictional reports, as well as joint reports with other national healthcare organizations on emerging trends, quality and safety risks, and best practices (Mitchell, 2014).
- The programmatic-level accrediting body in Canada is EQual™ Accreditation. This is a service for professional, entry to practice, and education programs (Accreditation Canada, 2021).

Sonography Canada / Échographie Canada

(Sonography Canada, 2021)

- The credentialing is quite consistent across country. Sonographers had historically been registered with ARDMS, but most new sonographers are now registered with Sonography Canada.
- Sonography Canada registry requires completion of a standardized clinical performance assessment, the Canadian Clinical Skills Assessment (N. Chouinard, personal communication, March 30, 2021).

The United States

- When sonography became more frequently utilized, the need for specialized sonographers became apparent. At first, aspiring ultrasound technologists were trained through on the job training which "consisted of combining didactic information with a scanning apprenticeship using clinical application to determine findings" (Taylor-Fujikawa & Andrist, 2019).
- Eventually, associate and bachelor degree programs were developed where ultrasound students were able to choose the specialty that they would like to pursue. These specialties may include cardiovascular, general (abdomen and OB/GYN), vascular, pediatric, neurosonology, musculoskeletal, and breast (ARDMS, 2021).
- The most common educational path that students take is a two-year degree through an accredited training program. Each program has a different level of prerequisites that are required to begin the program. Applicants to a one-year program require qualifications in a related health profession. Prerequisites for a two-year program include a high school diploma and must have taken basic science, physics, and algebra courses (CAAHEP, 2021).
- CAAHEP is the largest programmatic accrediting body of health science professions. "CAAHEP reviews programs to see if they comply with a set of Standards and Guidelines which have been developed and approved for a particular field of study by the major professional organization(s) and the CAAHEP Board of Directors" (CAAHEP, 2021).

ARDMS™
American Registry for Diagnostic Medical Sonography

(ARDMS, 2019)

- Independent credentialing organizations, such as the American Registry for Diagnostic Medical Sonography, the American Registry of Radiologic Technologists, or Cardiovascular Credentialing International, test an individual's specific use of sonography and award credentials that document established knowledge, skills, and abilities in the practice of sonography (Cyr, 2017).

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