INMED Scholarly Project
Quality Improvement Project Report

Ultrasound in Resource-Limited Settings: A Case Based, Open Access Text

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Ultrasound is particularly positioned to help fill this gap as the most portable, inexpensive, and versatile form of diagnostic imaging. While caring for patients and teaching ultrasound in the most low resourced health settings in the world, I routinely diagnose illnesses such as rheumatic heart disease and extra-pulmonary tuberculosis. Many conditions encountered when using ultrasound in these settings are considered 'neglected' and rare in high income countries, but are becoming increasingly relevant with global travel, migration, and population displacement. When I tried to learn more about the ultrasound diagnostics of these diseases and find high quality images and videos for teaching our global trainees, I noticed a lack of available resources. Standard texts offer ample education about diseases that are common throughout the world. However, they fall short in building the expertise that is needed by those who practice in limited-resourced and tropical regions. This new online resource aims to provide an open access clinical resource for radiologists and clinicians who practice ultrasound in low and limited resourced healthcare settings.

The goal was to create an up-to-date and useful resource for those who use ultrasound to take care of vulnerable patients around the globe. I envisioned a text that was concise and clinically relevant, with high quality images and discussion that could be easily accessed, shared and downloaded in areas with limited internet bandwidth — a living text that would be translated into multiple languages and continue to grow as future impactful cases were identified and new techniques were discovered. This resource will help not only clinicians, but be a resource of health educators as well.

The project is a collaborative effort by health care practitioners worldwide who use point-of-care and comprehensive ultrasound. Each chapter is authored by experts with case-based knowledge of both ultrasound and the highlighted disease. Over 35 chapters are 100% case based and provide important insight into how experts practice medicine and apply ultrasound in the limited resourced healthcare setting. As you scroll through chapters, high quality videos (in bandwidth-efficient GIF format) play automatically, and full-resolution video files are available for download and sharing.

I consulted with Blaisdell Medical Library about publishing options for this unique work, health sciences librarian staff saw the opportunity to connect them with California Digital Library

(CDL) to investigate the possibility of hosting their work on an open access publishing platform. The publication, by virtue of its intended audience and goals, is particularly concerned with issues of accessibility and discoverability, and CDL's eScholarship publishing program shares that commitment. We regard this publication as an important step forward in redesigning medical publications for the specific needs of users in the field.

Because of the large number of videos and images needed to illustrate the concepts in the text, CDL identified the Manifold platform as the best system for building and displaying the work. Foundational to the Manifold platform is the ability to harness dynamic web content as an integral component of a publication, layering text and media alongside one another in an intuitive reader that encourages thoughtful engagement. Manifold's open-source, open-access ethos is also specifically aimed at the public good — values that align strongly with the goals of the project.

This publication also represents the first project completed under the eScholarship Labs program at California Digital Library. Launched in 2019, the Scholarship Labs program with the aim of fostering innovation in scholarly publishing by piloting new publishing technologies to support experimental forms of scholarship.

In the coming months, *Ultrasound in Resource-Limited Settings* will be released in several different languages including Spanish and Farci, initially, with many others to follow. Spanish translation is already underway and will likely be completed in three months' time.

Ultrasound in Resource-Limited Settings: A Case Based, Open Access Text is available now at: https://manifold.escholarship.org/projects/ultrasound-in-resource-limited-settings. Google analytics has been incorporated into the site and will provide usage and geographical data. Web traffic, chapter usage, sharing statistics will be tracked longitudinally. Additionally, since this is an open access resource experts from around the world can continue to share, add and critique the resource as another measure of performance.