

# Feedback overview from Second Year Undergraduate Physician Assistants on the introduction of hands-on Ultrasound Curriculum

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## INTRODUCTION

With the technological progress of different types of portable Ultrasound machines, there is a growing demand by all health care providers to perform bedside Ultrasonography, also known as Point of Care Ultrasound (POCUS). This technique is becoming extremely useful as part of the Clinical Skills/Anatomy teaching in the undergraduate Medical field curriculum.

Teaching/training health care providers how to use these portable Ultrasound machines can complement their physical examination findings and help in a more accurate diagnosis, which leads to a faster and better improvement in patient outcomes. In addition, using portable Ultrasound machines can add more safety measurements to every therapeutic/diagnostic procedure when it is done under an Ultrasound guide. It is also considered as an extra tool in teaching clinical anatomy to Physician Assistant students. Using an Ultrasound is one of the different imaging modalities that health care providers depend on to reach their diagnosis, while also being the least invasive method.

Physician Assistants are now playing a very important role in Canada's health care system. We thought investing in training them on basic Ultrasound scanning skills as part of their second year curriculum will help build up the foundation for their future career.

## RESULT

A questionnaire was handed to the second year Physician Assistant students to evaluate their hands-on ultrasound session experience. Answers were collected and data was analyzed into multiple graphs (as illustrated on this poster). The comments that we got from this survey were mainly positive - here are a few of the constructive comments that we received:

- "This was a great learning experience"
- "It was a great learning opportunity"
- "Very useful, learned a lot"

We also received some comments about recommendations to improve the sessions( listed below):

- "I wish we had a longer session time"
- "Should be earlier in the curriculum"
- "Add some procedures to this learning experience like Thoracocentesis"
- "Presentations should start with more anatomy, such as the Liver/Spleen, as they are relative to the diaphragm"

## PURPOSE

Incorporating POCUS as part of the Clinical Skills/Anatomy teaching within the second year Physician Assistant curriculum will provide students with a very unique experience in utilizing this increasingly used imaging modality in their career. This will not only help them in reaching more accurate diagnosis along with their Clinical Skills training, but will also help them in performing safer tests with less complications associated with different ultrasound guided therapeutic, and or, diagnostic procedures - some examples include Paracentesis and drainage of Abscesses.

## MATERIAL

A series of 3 figures are provided; the ultrasound machine that is used to train the Physician Assistant students, students scanning each other, and the actual tutorial room. The idea was to train the learner how to use the ultrasound probe, how to integrate shape, location, size, orientation, and dimensionality of the image that they create by them scanning a warm body, and overall familiarity and feeling of comfort with scanning. The mission of discriminating between normal and abnormal features is less frightening when students have a solid understanding of normal structure

## METHOD

The research we report in this manuscript is a preliminary qualitative study, and provides the template for future models for teaching a hands-on ultrasound methodology for all health care providers in different learning institutions.

The McMaster Physician Assistant program is a two-year course, in which we introduced POCUS to the second year Physician Assistant curriculum. We have a total of 24 Physician Assistant students in the second year of their program, where we divide them in to three equal groups. One tutor will supervise each group, where they will have one General Electric portable Ultrasound machine, which is projected onto a large plasma screen. We then dim the room lights to get better quality screen images. Our session lasts for a total of 90 minutes, where the first 20 minutes will be an introduction of how to use the machine and probe orientation, as well as some anatomy landmarks. Every student will have the chance to scan their peers at least one time during our session.

Our objective is a pure hands-on scanning of the neck and abdomen performed by the students. With the correlations to their anatomy background, they were able to identify normal Thyroid Glands and major neck vessels, the Liver, abdominal Aorta, inferior Vena Cava, Gall Bladder and the Kidneys.

## CONCLUSION

In conclusion, POCUS has shown to be an extremely important diagnostic/therapeutic tool for different medical specialities. Allowing Physician Assistant students to scan their peers as part of their hands-on experience provides a more interactive learning environment. The introduction of POCUS was very successful, as students were strongly engaged in our training sessions.

Students valued their experience when scanning each other that they even requested for more scanning/teaching time added into their curriculum in the future. As a result, all students were able to enhance their basic Ultrasound and scanning knowledge. They appreciate the integration of Anatomy/Clinical Skills teaching value of this session, as it is a helpful tool to teach Clinical Anatomy.

Students always find the interpreting Sonogram images as a difficult task, especially with changing probe positions. Sometimes, ultrasound interpretation is extremely challenging for some learners.

As previously mentioned, adding hands-on Ultrasound scanning sessions as part of the Physician Assistant Clinical Skills/Anatomy curriculum will complement their medical/anatomical knowledge, which will definitely change the future of the medical world.

## References

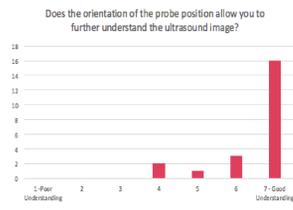
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## Questionnaire's Result

Question 1



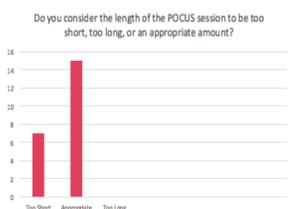
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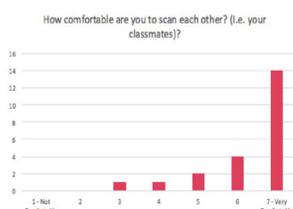
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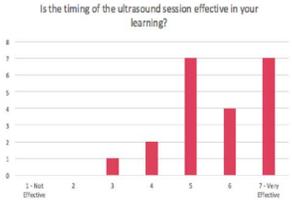
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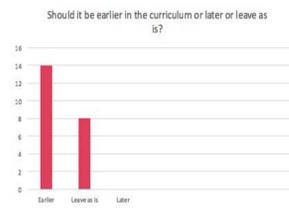
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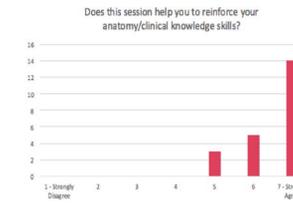
Question 6



Question 7



Question 8



Question 9

