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Barriers to Implementation of Point-of-Care Ultrasound in Primary Care

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Authors	Dubuque, Jack
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The University of Vermont

LARNER COLLEGE OF MEDICINE

Barriers to Implementation of Point-of-Care Ultrasound in Primary Care

South Burlington, VT March-April 2019

Jack Dubuque, Class of 2021
Mentor: Aaron Reiter, MD

Problem Identification

Point-of-care ultrasound (POCUS) is a safe and rapidly evolving diagnostic tool that has changed the practice of many hospital based specialties and has been introduced into Family Medicine residencies over the last few years.

POCUS enables a provider to ask a simple yes or no question and after a brief examination get an answer immediately thus helping narrow the differential diagnosis.

POCUS has the potential to bring significant value to the providers and patients in the outpatient setting, and even more so to rural practices.

This technology has the potential to reduce health care costs by evaluating the need for more comprehensive imaging and increasing the rates of screening as recommended by the USPSTF.

While the UVMC Family Medicine residency has introduced POCUS into the curriculum, many practicing physicians have limited knowledge about the technology. This study aims to document the views and concerns of primary care providers about use and implementation of POCUS.



Public Health Cost

In adopting POCUS there is a cost in purchasing the ultrasound machine, the cost to train and teach the provider the new skill, and the cost to maintain the technology.

Ultrasound machines range from \$2,000 to \$100,000 depending on the size and quality of the model. Smaller handheld devices can be more accessible and have shown to be useful in evaluating simple questions or providing screenings, but do require the provider to know the limitations of the device.

As POCUS is a newer technology, many practicing physicians have never been trained in ultrasound use and interpretation. The current cost to train physicians is highly variable and dependent on the requirements set forth by each hospital's credentialing service.

Despite the large start up costs, the benefits have been proven to be cost effective.

Community Perspective

"Providing longitudinal care to patients has many components. At its core, we strive to provide care that results in improved outcomes for our patients as well making that care high quality, accessible and convenient. Point of care ultrasound has the potential to contribute to the attainment of these goals. When applied correctly, it can confirm a diagnosis or narrow a differential diagnosis, decrease time to treatment and improve the patient experience by being performed in the office as opposed to an off site location."

Dr. John Miller, Adult Primary Care Internal Medicine
Physician, Assistant Professor Larner College of Medicine

"Point-of-Care Ultrasound has the potential to bring immense benefit to primary care. Having the ability to ask a diagnostic question and immediately get an answer in the office could save patients days of waiting and the hassle of scheduling multiple appointments. It could decrease the number of emergency room and urgent care visits too.

While the benefits to both patients and providers are incredible, it is a new technology and precautions must be taken to make sure patient safety and good outcomes are maintained. However, once the system has been setup for providers I would enthusiastically adopt POCUS into my practice."

Tim Schad, APRN, South Burlington Family Practice



Intervention and Methodology

An electronic survey was developed with the aid of Dr. Aaron Reiter and Dr. John Miller.

The survey was distributed via REDcap to the health care providers at University of Vermont Medical Center Family Medicine offices in South Burlington, Colchester, Milton, Hinesburg, and Berlin as well as Outpatient Adult Internal Medicine offices in Burlington, South Burlington, Essex, and Williston.

The survey was open for 10 days.



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Barriers to Implementation of Point of Care Ultrasound in Primary Care

Please complete the survey below.

Thank you!

What is your age group?

< 30

41-50

>60

31-40

51-60

reset

What is your gender?

Male

Other

Female

reset

What type of primary care do you practice?

Family Medicine

Internal Medicine

reset

What is your health care provider license?

MD

DO

NP

PA

reset

How many years have you worked in primary care?

< 2

2-5

6-10

11-20

>20

reset

How much of your time is dedicated to clinical practice?

< 25%

26-50%

51-75%

>75%

reset

Do you currently utilize point of care ultrasound in your practice?

Yes

No

reset

Do you believe point of care ultrasound can be used to increase patient satisfaction?

Yes

No

Unsure

reset

Do you believe point of care ultrasound can expedite patient care?

Yes

No

Unsure

reset

Do you believe that point of care ultrasound use will increase the number of patients that receive screening recommended by the USPSTF?

Yes

No

Unsure

reset

In your opinion, what are the potential issues in adopting point of care ultrasound in your primary care office? (Select all that apply)

None

Lack of awareness

Lack of training

Lack of equipment

Lack of evidence for any patient benefit

Lack of time

Lack of respect from other specialties (radiology, emergency medicine, OB/Gyn, etc)

Legal concerns for practice

Non-billable services

Other

In your opinion, what are the prerequisites to adopt point of care ultrasound in primary care practice? (Select all that apply)

None

Training guidelines

Credentialing arrangement

Acquisition of equipment

Collaboration with other specialties (radiology, emergency medicine, OB/Gyn, etc)

Approval by risk management

Recommendation by a professional body (like AAFP, ACP, etc)

Other

After appropriate training, credentialing, and collaboration with radiology, would you be willing to introduce point of care ultrasound into your practice?

Yes

No

Not sure

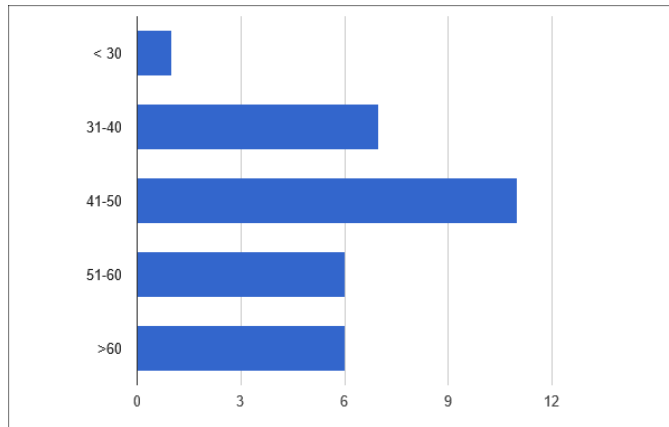
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Submit

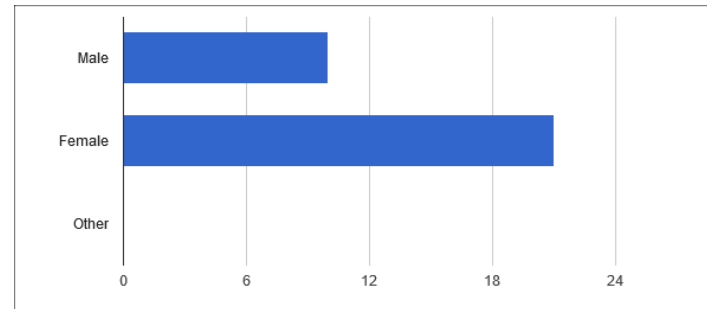


Results - Demographics

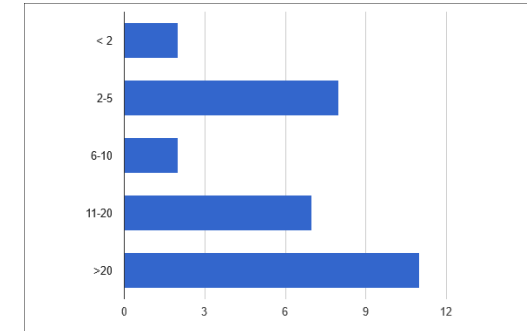
Age



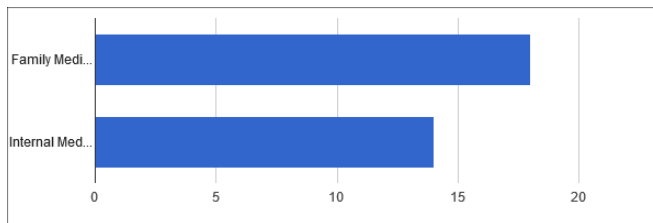
Gender



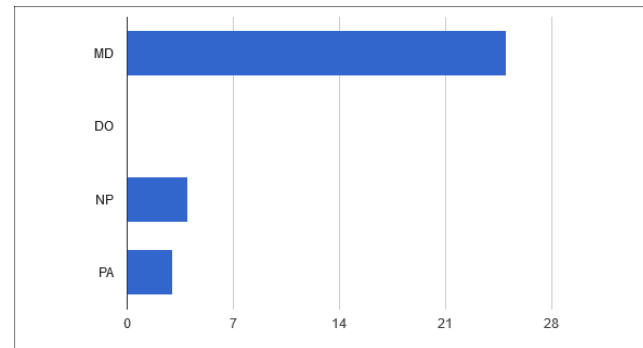
Years in Primary Care



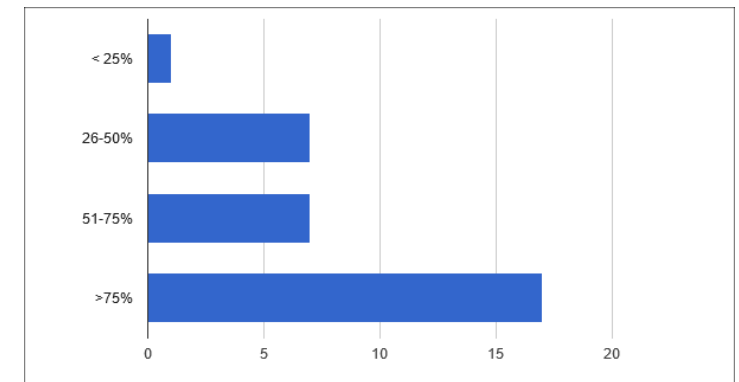
Specialty



License

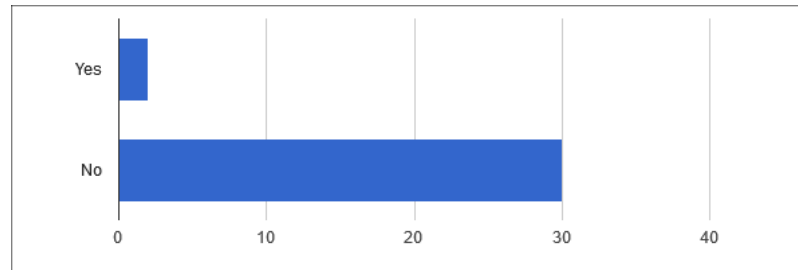


Percent of time clinical



Results – Current Use

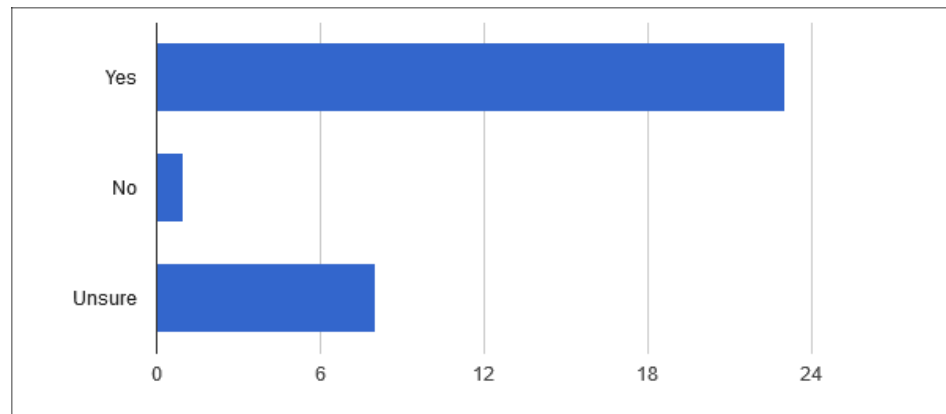
Do you use point of care ultrasound for procedures?



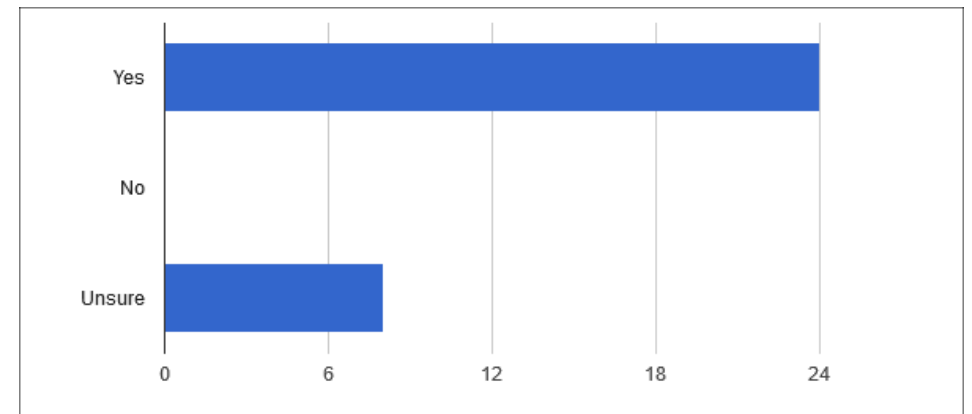
Of those surveyed, POCUS is currently used by one provider for OB/Gyn and one provider for musculoskeletal exams and for joint injections. One trained in fellowship and one through an ultrasound certification course.

Results - Perceptions

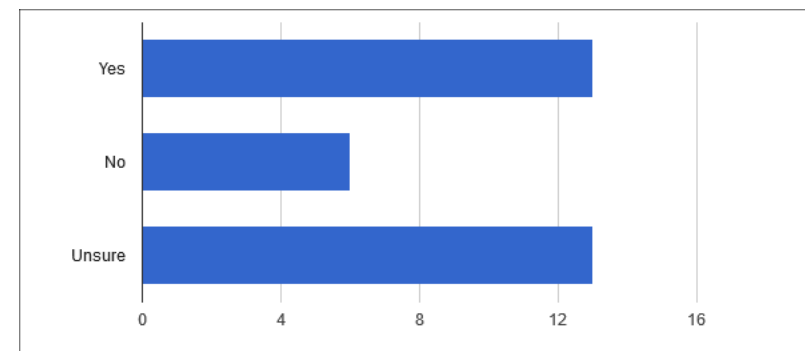
Do you believe point of care ultrasound can be used to increase patient satisfaction?



Do you believe point of care ultrasound can expedite patient care?

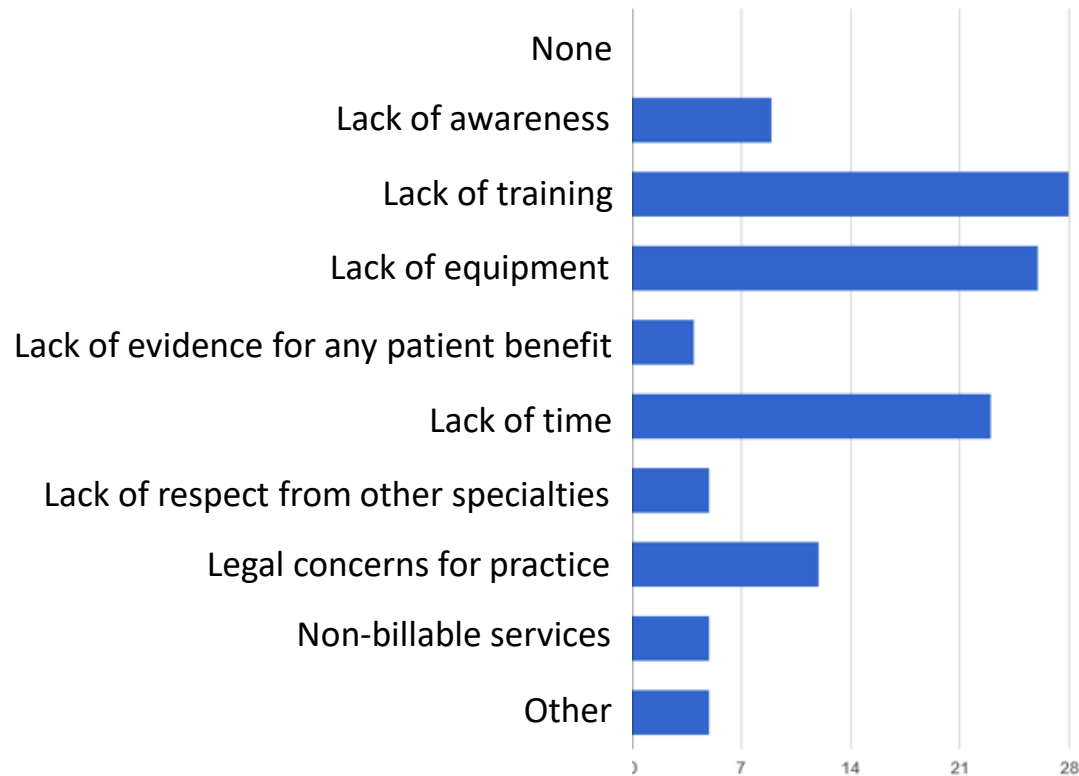


Do you believe that point of care ultrasound use will increase the number of patients that receive screening recommended by the USPSTF?



Results – Barriers

In your opinion, what are the potential issues in adopting point of care ultrasound in your primary care office? (Select all that apply)

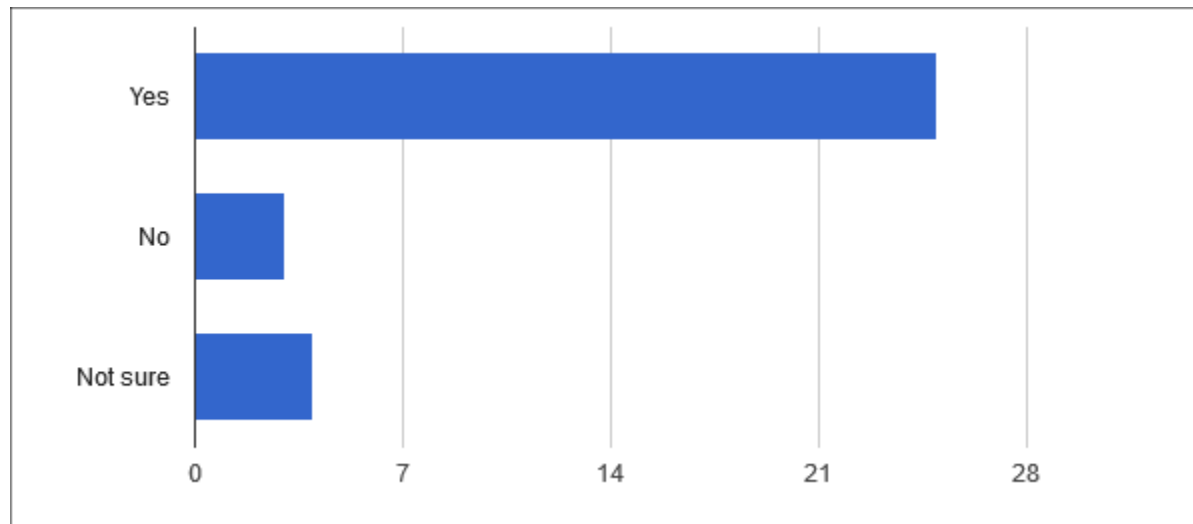


In your opinion, what are the prerequisites to adopt point of care ultrasound in primary care practice? (Select all that apply)



Results - Implementation

After appropriate training, credentialing, and collaboration with radiology, would you be willing to introduce point of care ultrasound into your practice?



Effectiveness and Limitations

Effectiveness

Identifies 5% of providers are currently using POCUS in their practice but 78% would like to use it.

Greater than 70% of providers believe POCUS will increase the rate of health care delivery and increase patient satisfaction.

Providers are split about how POCUS can be used in screening exams and this provides a nidus for further education.

Over 50% of providers are concerned about risk management and greater than 30% are concerned about the legal aspects of POCUS.

Limitations

Survey was only available for a period of 10 days

Small sample population of UVMMC family medicine and outpatient internal medicine (approximately 80 people)

Response rate of approximately 43%

Despite testing the survey the “other” category did not propagate with write in data

Not all surveys were filled out completely



Future Direction

Expand the survey to all primary care providers throughout the state of Vermont.

Distribute an educational document with POCUS FAQ and concerns to providers.

Evaluate interest in handheld ultrasound devices compared to classic larger and more expensive machines.

References

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