

Single Sheet Form for Baseline Assessment of Learning Needs as well as Formative and Summative Assessment of Ultrasound Skills of Radiology Residents

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Introduction

Ultrasound training for Radiology Residents in KK Women's and Children's Hospital, Radiology Department comprises of both theoretical and practical ultrasound sessions.

For practical ultrasound sessions, Residents are assessed at the beginning of their posting, followed by mid and end posting assessment.

Single sheet assessment form is used for baseline, mid and end posting of Residents.

The three main areas assessed are scan competency where Residents are assessed on their scanning technique and image documentation; image interpretation where Residents are assessed on their recognition of normal structures, normal variants and ability to identify pathology and finally in patient communication, Residents are assessed on their ability to interact with patients and answer their basic queries.

Aim

We aim to evaluate if a single assessment form can determine Residents ultrasound skills and monitor progress

Methods

All Radiology Residents who did their posting between July 2019 – June 2020 were assessed in the areas of scan competency, ultrasound image interpretation and patient communication for both gynaecological and pediatric ultrasound scans at 3 time points during their posting (start, mid and end). For each component, they were scored from 0 to 5 with 5 being the best score and 3 indicating adequacy.

Results

Eighteen Residents were assessed (12 male and 6 female).

For gynecological ultrasound, Residents scored on average of 1.9 (scan competency), 2.0 (image interpretation) and 2.7 (patient communication) at the start of posting. The scores improved to 2.9, 2.9 and 3.5 at mid posting and 3.5, 3.5 and 3.8 respectively at the end of posting.

For pediatric ultrasound, Residents scored on average 2.4 (scan competency), 2.7 (image interpretation) and 3.1 (patient communication) at the start of posting. The scores improved to 3.1, 3.1 and 3.4 at mid posting and were 3.6, 3.4 and 3.6 respectively at end of posting.

All Residents showed improvement from baseline across the 3 components assessed, obtaining an adequate score of 3 in each component assessed by the end of posting ($p < 0.01$).

Conclusion

Single sheet assessment form can be used to perform baseline assessment to highlight learning needs, monitor Residents progress and capture their achievements at the end of posting.

Figure A. Single Sheet Form for Baseline, Mid and End Posting Assessment

Doctor's name: _____ GYN//PAEDS: baseline /mid/ end
 KKH, Department of Diagnostic & Interventional Imaging

Residents Evaluation Checklist For Ultrasound

	ITEM – circle score for each section-
Competency in scanning technique	0. Improper probe handling and manipulation 1. Correct probe selection/ probe insertion(gynae) 2. Able to manipulate probe correctly, demonstrate correct scanning planes and correct measurements most of the time. 3. Able to perform scan systematically by following protocol with adequate 2D optimization most of the time 4. The above, with good 2D optimization and able to investigate further (use Doppler, etc) 5. The above, in under 30 minutes for simple case and under 1 hour for complicated case
Scan Impression	0. Missed important pathology, e.g EP, appendicitis 1. Able to identify at least 1 organ sonographically 2. Able to identify some normal structures sonographically 3. Able to identify normal and normal variant of structures sonographically (corpus luteum, etc) 4. Able to identify pathology 5. Able to come up with diagnosis and differential diagnosis
Customer Service	0. Did not communicate with patient at all 1. Greet patient and introduce self to patient 2. The above + confirm patient's Identification using 2 Identifiers 3. The above + Explanation of procedure and take verbal/written consent of procedure 4. The above + able to show care and concern 5. All of the above plus able to handle difficult patient

- Clinical Indication/Accession number : _____
 - Duration of scan (first image to last image): _____

Evaluator: Name /Signature: _____ Date: _____
 Comments: _____

I have received feedback regarding my ultrasound performance and give consent to have the above information used for education, presentation and publication.
Resident Signature: _____

Figure B. Comparison of gynecological ultrasound scores of scan competency, scan impression and customer service at baseline, mid and end posting

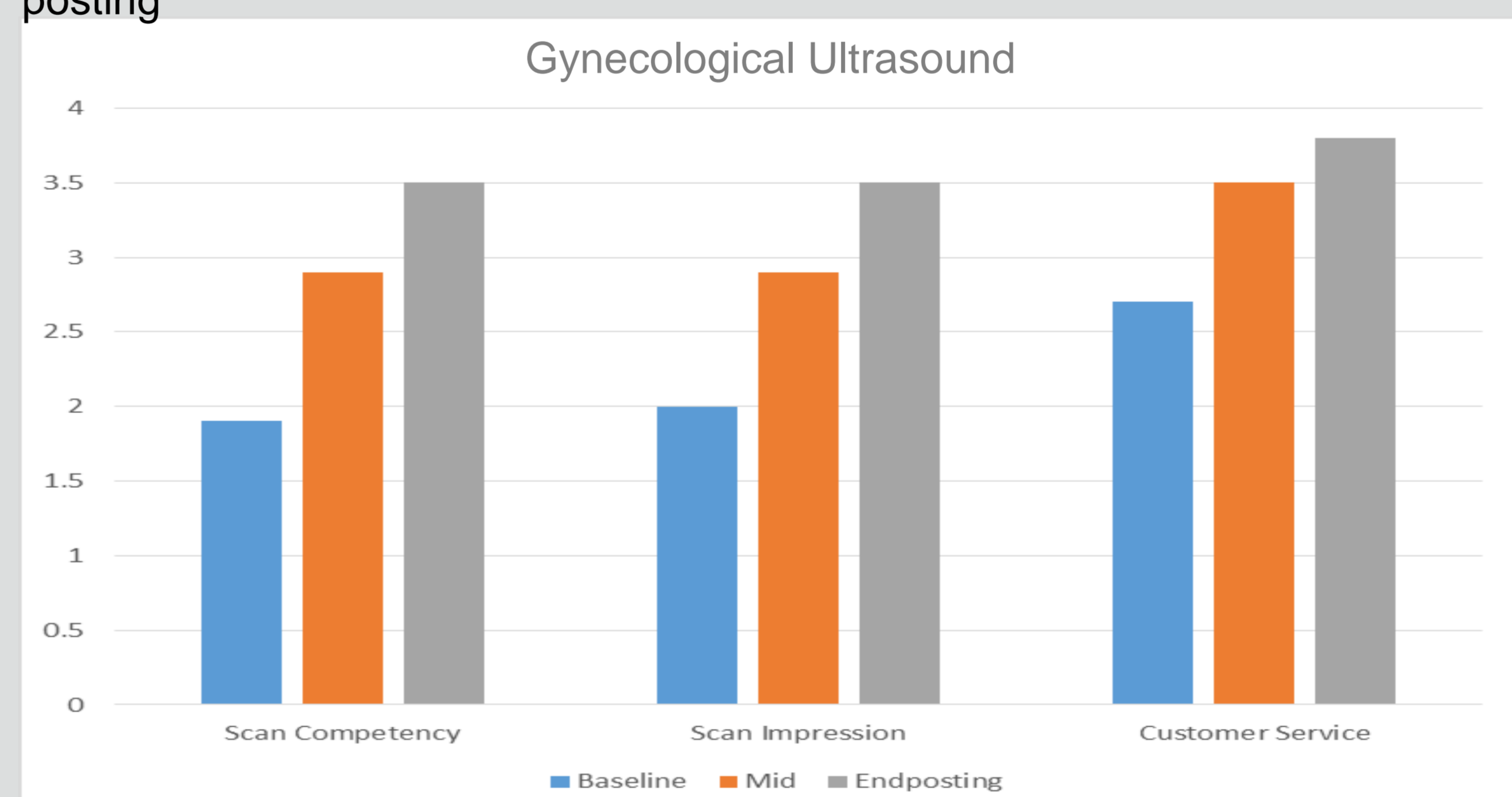


Figure C. Comparison of pediatric ultrasound scores of scan competency, scan impression and customer service at baseline, mid and end posting

