“PEER LEARNING ULTRASOUND”: THE EXPERIENCE IN A TWO-MILLION EXAMS PER YEAR SERVICE

Harley De Nicola: MD, PhD
Luis A. T. Tibana: MD
Luis Felipe Almeida: MD
Simone V. Reis: BA, MBA
Vanessa Carvalho: BA
Mariana Mendieta: BA, MSc
Sérgio Aron Ajzen: MD, PhD
The concept of Peer Review in radiology is a well-established practice for medical quality control.

The concept’s adaptation to ultrasonography practice has been the object of multiple previous papers, however, the use of tele-ultrasonography in real time has never been applied to this purpose.

The aim of our work is to evaluate the use of "Peer Learning" in real time to improve medical performance in a large-scale service.
METHODS

- Expert physicians are physically present at an Ultrasound Support Room, where they monitor the execution of both imaging study and its medical report, which are being performed remotely by local physicians in health units.
METHODS

- The imaging studies and the medical reports are transmitted in real time from the local health unit to the practitioners based at the Support Room.

- The contact between local and remote physicians is done by live chat, at any time and in real time.

It is a two-way mechanism, through which the evaluator uses communication tools to intervene when an error that could compromise clinical conduct is detected, and the evaluated physician requests support at any time if doubts arise.
A comprehensive quality evaluation form was developed, addressing every kind of ultrasound examination, which the evaluator must fill out during the monitored study.

According to the questions marked in the evaluation form, an automated score is provided, which classifies the imaging study into five categories:

1- Excellent; 2- Appropriate; 3- Satisfactory; 4- Unsatisfactory; 5- Unsuitable

The data are automatically loaded into a Business Intelligence dashboard that we review in a regular basis, in order to give support and to evaluate the main errors performed in each type of ultrasound study, by doctor and by location, over time.
METHODS

- We established a quality goal set at 80% in the sum of the percentage of imaging studies evaluated as excellent, appropriate and satisfactory.

- In September 2019, 10 out of the 197 evaluated practitioners in this period performed below the 80% goal.

- We produced 14 short videos ("pills of knowledge"), containing lessons based on frequent errors observed, and made them available to the whole medical team.

- We also introduced medical mentoring, with longitudinal monitoring of these ten physicians, for three months.
### RESULTS

A total of 2,209 evaluations were carried out, between September and December 2019, of the ten practitioners who performed below the 80% goal in the sum ($\Sigma$) of the percentage of excellent, appropriate and satisfactory studies.

- The average score $\Sigma$ excellent, appropriate and satisfactory studies of the ten physicians was at 61.3% in September and raised to 76.6% in December.

<table>
<thead>
<tr>
<th></th>
<th>SEPTEMBER 2019</th>
<th>OCTOBER 2019</th>
<th>NOVEMBER 2019</th>
<th>DECEMBER 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of evaluated US studies:</td>
<td>527</td>
<td>703</td>
<td>514</td>
<td>465</td>
</tr>
<tr>
<td>$\Sigma$ Satisfactory, Appropriate, Excellent</td>
<td>61,29%</td>
<td>78,24%</td>
<td>72,37%</td>
<td>76,56%</td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>20,87%</td>
<td>13,80%</td>
<td>22,37%</td>
<td>19,35%</td>
</tr>
<tr>
<td>Unsuitable</td>
<td>17,84%</td>
<td>7,97%</td>
<td>5,25%</td>
<td>4,99%</td>
</tr>
<tr>
<td>Total of US studies performed by the health units monitored by the service</td>
<td>5,444</td>
<td>5,593</td>
<td>4,545</td>
<td>3,251</td>
</tr>
<tr>
<td>% of evaluated US studies from the total performed</td>
<td>9,68%</td>
<td>12,57%</td>
<td>11,31%</td>
<td>14,30%</td>
</tr>
</tbody>
</table>

Average performance of the 10 physicians evaluated below the goal of 80% in the sum of the percentage of excellent, appropriate and satisfactory imaging studies (total of 10 physicians)
There was a **significant progressive reduction** in the indicator of unsuitable studies, from 17.84% in September to 4.09% in December 2019:
The evolution of “Peer Learning Ultrasound” in real time, with the adoption of medical mentoring to discuss the main reasons for errors, associated with the production of short video content, proved to be an effective methodology to improve medical performance with consequent improvement in the quality of ultrasound reports.
THANK YOU!

For questions or comments, please contact: sajzen@gmail.com