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An audit cycle of compliance to European Society of Gastroenterology Recommendations for Photo-Documentation in Upper Gastrointestinal Endoscopy

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Abstract

Aim

To assess adherence to ESGE photo documentation recommendations and identify areas for improvement in the endoscopy service at Letterkenny University Hospital.

Methods

The criteria for this study were based on ESGE guidelines for image documentation, with the initial audit including patients from May 1 to July 31, 2023, and the re-audit covering patients from January 1 to January 31, 2024; data on photo documentation for specific anatomical landmarks was extracted from the Endoraad system and analyzed using Microsoft Excel.

Results

In the first audit, 804 endoscopy cases were reviewed, while 222 cases were examined in the re-audit, revealing a significant improvement in compliance with ESGE guidelines, which rose from 9% in the initial audit (76 out of 804 cases) to 19% in the re-audit (43 out of 222 cases); these results demonstrate the hospital's commitment to providing high-quality endoscopy services.

Discussion

While the sequential audits show enhanced adherence to ESGE photo documentation guidelines, they also highlight the need for continuous education and improvement. This ongoing effort is crucial to ensuring consistent, high-quality diagnostic outcomes in endoscopy services at Letterkenny University Hospital and keeping pace with the evolving standards and best practices in the field.

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Introduction

Upper GI endoscopy is a widely utilised diagnostic tool for identifying a range of upper gastrointestinal pathologies. These can vary from mild conditions, such as gastroesophageal reflux disease (GERD), peptic ulcer disease, and esophagitis, to more precancerous severe conditions like Barrett's oesophagus and malignancies such as oesophagal and gastric cancers. Additionally, this procedure is frequently employed for interventions such as percutaneous endoscopic gastrostomy, upper GI dilation, biopsy, variceal banding, and managing upper GI bleeding [1,2,3] .

Despite its routine nature, quality control is critical in each procedure to ensure the reliability of findings and minimise the risk of missed diagnoses, which could delay urgent interventions[1, 3]. Quality control also helps standardise procedures, enhancing communication among healthcare professionals involved in patient care[1]. Furthermore, the images captured during endoscopy are valuable for medicolegal purposes, providing essential documentation that can be referenced in disputes[4,5].

As image documentation is widely available, it now plays a vital role in the quality control of endoscopies, as well as for documentation and education purposes[6].

To support these objectives, the ESGE recommends photo documentation of at least eight specific regions during upper GI endoscopy: the upper oesophagus, the area 2 cm above the squamocolumnar junction (Z line), the cardia in inversion, the upper part of the lesser curvature, the angulus in partial inversion, the antrum, the duodenal bulb, and the second part of the duodenum[1]. The ESGE maintains that appropriate photo documentation is a key performance measure in Upper GI endoscopy[7].

These sequential audits aim to evaluate Letterkenny University Hospital's compliance with the European Society of Gastroenterology (ESGE) guidelines regarding photo documentation during upper GI endoscopy. The purpose is to determine if further interventions are necessary to enhance adherence to these guidelines. We can improve overall compliance with ESGE standards by identifying areas of weakness.

Methods

For the initial Audit, patients who underwent upper GI endoscopy at the LUH Endoscopy Unit between May 1, 2023, and July 31, 2023, were identified using the Electronic endoscopic reporting system named Endoraad.

For the re-audit, patients who attended upper GI endoscopy at the LUH Endoscopy Unit between January 1, 2024, and January 31, 2024, were similarly identified through the Endoraad system.

All patients who underwent upper GI endoscopy during the specified periods were included in the study. However, exclusion criteria applied to patients undergoing reassessment, those with technical issues during the procedure, cases involving anatomical or functional anomalies, and procedures conducted primarily for established conditions.

The final number of patient images analyzed for the first Audit, covering the period from May 1, 2023, to July 31, 2023, was 804.

The final number of patient images analyzed for the re-audit, covering the period from January 1, 2024, to January 31, 2024, was 222.

All endoscopy procedures performed at Letterkenny University Hospital had their images saved on the Endoraad server. Patients who underwent upper GI endoscopy during the specified period were identified through this server. Auditors then reviewed the stored images to determine if the following anatomical landmarks were photo-documented: the upper oesophagus, 2 cm above the squamocolumnar junction (Z line), cardia in inversion, the upper part of the lesser curvature, angulus in partial inversion, antrum, duodenal bulb, and the second part of the duodenum. Additionally, details such as the date of the procedure, the indication for the endoscopy, and any reasons for incomplete photo documentation were also recorded for each case.

The data was uploaded to Microsoft Excel and analyzed by the clinical audit administrator to determine the number of endoscopy procedures that complied with the ESGE photo documentation guidelines, both overall and for each specific anatomical location.

The European Society of Gastrointestinal Endoscopy (ESGE) recommends photo documentation of eight critical areas during upper GI endoscopy. In contrast, the World Endoscopy Organization (WEO) provides a more extensive guideline, recommending photo documentation of 28 specific areas during the procedure[3]. The British Society of Gastroenterology (BSG) and the Association of Upper GI Surgeons of Great Britain and Ireland (AUGIS) align with ESGE, also recommending photo documentation of eight areas during upper GI endoscopy[1, 2]. This comparison highlights the variation in recommendations across different international and regional guidelines, with WEO advocating for more comprehensive photo documentation compared to ESGE, BSG, and AUGIS.

We have selected to adopt the ESGE guideline as a tool to measure our standards of practice.

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Results

The sequential Audit of photo documentation demonstrates an improvement in compliance with ESGE guidelines from the first to the second Audit after measures were implemented to enhance adherence during the first audit. During the first Audit, conducted over three months from May 1, 2023, to July 31, 2023, 804 patient endoscopy images were reviewed. The second Audit, conducted over one month in January 2024, reviewed 222 endoscopy images.

The results of our sequential Audit indicate an overall improvement in compliance with ESGE guidelines. In the second Audit, 43 out of 222 (19%) upper GI endoscopies included images of all eight prescribed anatomical sites, compared to 76 out of 804 (9%) in the initial Audit. Table 1 provides a detailed breakdown of the compliance rates for each specific anatomical site as ESGE prescribes. Figure 1 shows Number of Images of Anatomical Locations Taken in the Audit and Re-Audit in percentage.

Table 1: Number & Percentage of Patients Where Images Taken At Individual Anatomical Sites – Audit & Re-Audit

Anatomical Site	Original Audit - Number (and %) of Patients Where Image Taken	Re-Audit - Number (and %) of Patients Where Image Taken
Angulus in Partial Inversion	140/804 (17%)	59/222 (27%) ↑
Upper Part of the Lesser Curvature	252/804 (31%)	160/222 (72%) ↑
Upper Oesophagus	290/804 (36%)	102/222 (46%) ↑
Duodenal Bulb	324/804 (40%)	106/222 (48%) ↑
Antrum	413/804 (51%)	161/222 (73%) ↑
Cardia In Inversion	683/804 (85%)	177/222 (80%) ↓

2cm above the Squamocolumnar Junction (Z Line)	**693/804 (86%)**	**201/222 (91%) ↑**
Second Part of the Duodenum	**705/804 (88%)**	**192/222 (86%) ↓**

Fig. 1: Number of Images of Anatomical Locations Taken in the Audit and Re-Audit (in %)

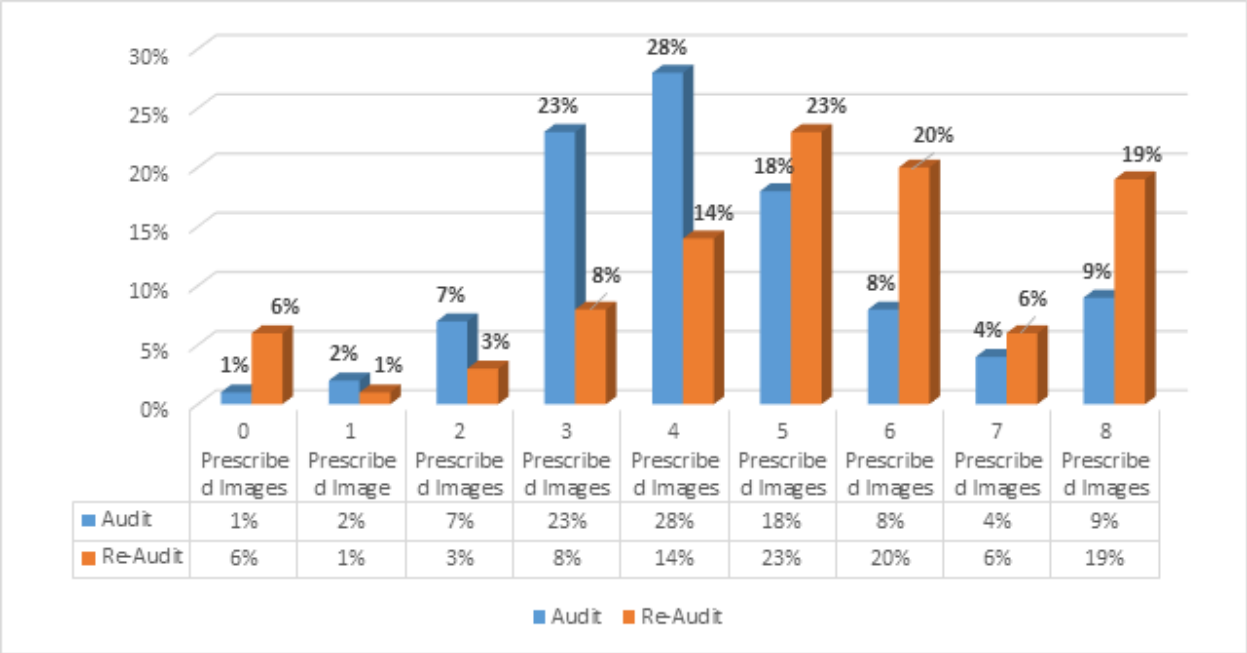
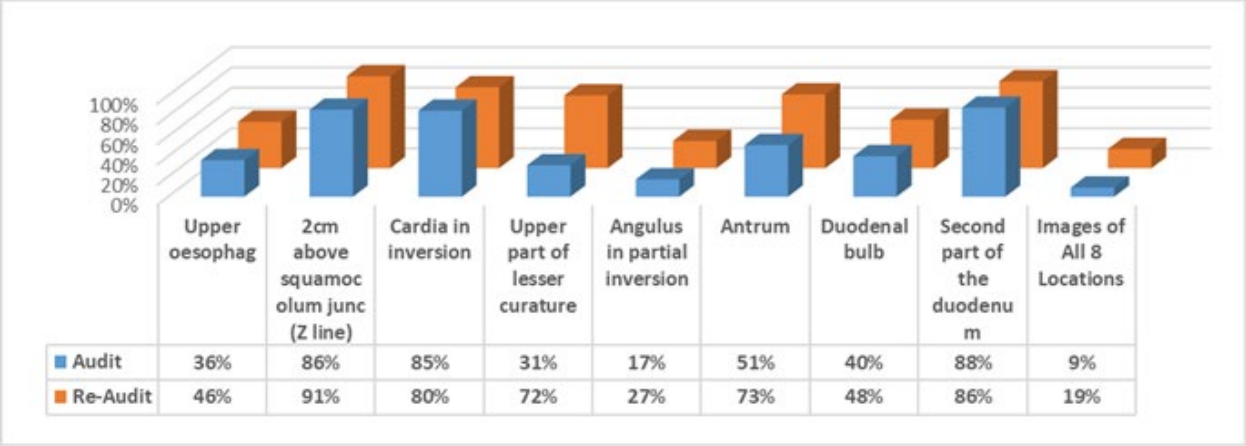


Fig. 2 shows the percentage of occasions that each particular location's image was taken for the Audit (804 patients) and re-audit (222 patients).

Fig. 2: Percentage of Occasions Images Taken of Each Anatomical Location



	Upper oesophag	2cm above squamocolum junc (Z line)	Cardia in inversion	Upper part of lesser curature	Angulus in partial inversion	Antrum	Duodenal bulb	Second part of the duodenum	Images of All 8 Locations
Audit	36%	86%	85%	31%	17%	51%	40%	88%	9%
Re-Audit	46%	91%	80%	72%	27%	73%	48%	86%	19%

We attribute the improvement in compliance with ESGE guidelines to the completion of the first Audit, followed by the educational intervention of presentation of the ESGE guidelines and the subsequent dissemination of this information.

Discussion

Despite improvements in compliance with ESGE guidelines, there remains room for further improvement. Continuous and consistent audits, coupled with ongoing education and information dissemination, should be regularly conducted to drive further improvements in adherence to these guidelines. No statistical significance test was performed in this audit cycle, as such tests are typically not applied to audit findings.

It is important to note that while thorough photo documentation may increase the duration of the procedure, it also enhances the diagnostic yield for detecting gastric cancer[8].

Furthermore, the integration of Artificial Intelligence (AI) in improving quality assurance in Upper Gastrointestinal Endoscopy holds significant promise. However, the current application of AI in this field remains limited. Evidence from the implementation of an intelligent quality-control system across six hospitals in China demonstrates that AI can reduce blind spots and improve mucosal visibility in the stomach without extending inspection time or increasing the biopsy rate[9].

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Declarations of Conflicts of Interest:

None declared.

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