sequences and to explore future-proofing by using algorithms trained on old image processors to locate polyps found using newer endoscopic technologies.

Methods We trained and validated a Convolutional Neuronal Network (CNN) on 18 517 frames created by merging research colonoscopy datasets (CVCCLinic, ASUMayo, ETIS, CVCVideoDB and CVCColon) from the Medical Image Computing and Computer Assisted Intervention Society challenges. 75% of frames contained polyps in both standard and high definition (HD) from older processors including Olympus Exera II (160/165 series) and Pentax EPKi 7000 (90i series). Our test set consisted of 11 HD videos featuring polyps in white light collected using the latest Olympus 290 endoscopes at a UK tertiary centre. Estimated median polyp size was 4 mm (range 2–15) and morphology included (Paris Classification Ila=4, Is=6 and Ila +IIs LST-G=1). Images were manually annotated by drawing bounding boxes around polyps and quality controlled by removing uninformative frames (e.g. blurred). A total of 2611 polyp-containing frames were analysed in the test set. A true positive was scored if the computer-generated segmentation mask prediction overlapped with the bounding box. A false positive indicated a non-overlapping location (more than one can occur per frame).

Results Our network operated at real-time video rate. F1-score accuracy was 92.5%. Sensitivity for polyp localisation was 98.5% and per-frame specificity 75.4%. Positive predictive value was 90.1%. Incorrect segmentation mask locations were predominantly limited to 3 videos and were generated by artefacts not represented during training.

Conclusion We demonstrate through analysis of video frames that a CNN can locate polyps with high accuracy in real-time. The algorithm was trained using multiple endoscopy processors and worked with HD images from a new processor. This suggests that the CNN could remain useful as new endoscopic technologies are introduced. Further work will train our model on larger datasets including complete colonoscopy procedures. This should improve accuracy further. Such a system could be used as a red-flag technique to reduce missed adenomas during colonoscopy.

PTH-005 DYSPEPSIA IN 2017: ARE WE ADHERING TO GUIDELINES?

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Dyspepsia in 2017: are we adhering to guidelines?

Introduction Recent NICE guidance advocates a test-and-treat strategy for *H. pylori* in the management of dyspepsia without red-flag features (simple dyspepsia). In addition, NICE recommends trialling symptomatic management with proton pump inhibitors (PPI) or histamine receptor antagonists (H2RA). Upper gastrointestinal (UGI) endoscopy is recommended only if symptoms persist despite these strategies.

The aim of this study was to assess degrees of adherence to current guidelines across various UGI endoscopy referral pathways (for example, GP direct access and gastroenterology clinics).

Methods A single-centre, retrospective analysis was performed for patients who underwent endoscopy from 2016–2017, at a large district general hospital in North London. Data was obtained from Unisoft Endoscopy Reporting Tool software,

alongside electronic patient records. Patient data was scrutinised for the following features prior to endoscopy:

- Presence of red-flag symptoms
- Endoscopy referral pathway type
- *H. pylori* investigations and treatment
- Management with PPI or H2RA

Results Data was collected for 250 patients who underwent UGI endoscopy for dyspepsia.

53% were simple dyspepsia cases. 15% had clear red-flag symptoms warranting urgent endoscopy. 4% had symptoms warranting non-urgent endoscopy. 28% had no data available regarding red-flag symptoms.

The majority of patients were referred for endoscopy either from gastroenterology clinics (47%) or GP direct access (43%). Other sources included surgical clinics and 1-stop clinics (10%).

60% of patients underwent *H. pylori* investigations prior to endoscopy. 35% had not been tested by the time of endoscopy. 5% had no data available regarding investigations.

33% of patients did not trial management prior to endoscopy. Of simple dyspepsia cases, 21/133 had not trialled management (11 had been referred from gastroenterology clinics, 6 from general surgery clinics, and 4 by GP direct access).

Additionally, 51/133 of simple dyspepsia cases had not undergone *H. pylori* stool testing prior to endoscopy. The majority of these patients had been referred from gastroenterology clinics or GP direct access.

Conclusions The majority of patients (53%) included in the study had no symptoms warranting urgent endoscopy. However, over 33% of patients had no *H. pylori* testing prior to endoscopy – furthermore, 15% had no trial of treatment. Lack of adherence to guidelines was present across all referral pathways.

For an endoscopy service to function effectively, it must not be overloaded with inappropriate referrals; failure to follow guidelines increases this burden. Despite widespread availability of these guidelines, implementation remains poorly practised. Thus, NICE endoscopy referral guidance requires better implementation, by means such as increasing awareness in both primary and secondary care.

PTH-006 SHOULD WE PERFORM COLONIC POLYPECTOMY IN PATIENTS OVER 80?

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Introduction Previous studies highlight the increased risks attendant with colonoscopy in the elderly population¹. Case reports and reviews also suggest avoidance of polypectomy for <2 cm polyps in patients ≥85 years². We aimed to assess the outcomes of polypectomy in patients ≥80 at our trust with five years of follow up.

Methods Colonoscopic data was analysed from the endoscopy reporting system for patients aged ≥80 who had colonoscopy and polypectomy performed in 2011 and 2012. Endoscopy reports, histology reports and patient notes were reviewed. Mortality and cause of death within 5 years of the procedure date were also recorded from the patient mortality coding database. Patients with a synchronous cancer at index procedure were excluded from 5 year colorectal cancer (CRC) mortality analysis.