

QUALITY IN ENDOSCOPY

UPPER GI ENDOSCOPY
& NEOPLASIA

Berlin, Germany April 15 - 16, 2016

Key quality measures in upper GI endoscopy. Report of the upper GI working group

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in association with
UNITED EUROPEAN
GASTROENTEROLOGY
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UPPER GI QM WORKING GROUP

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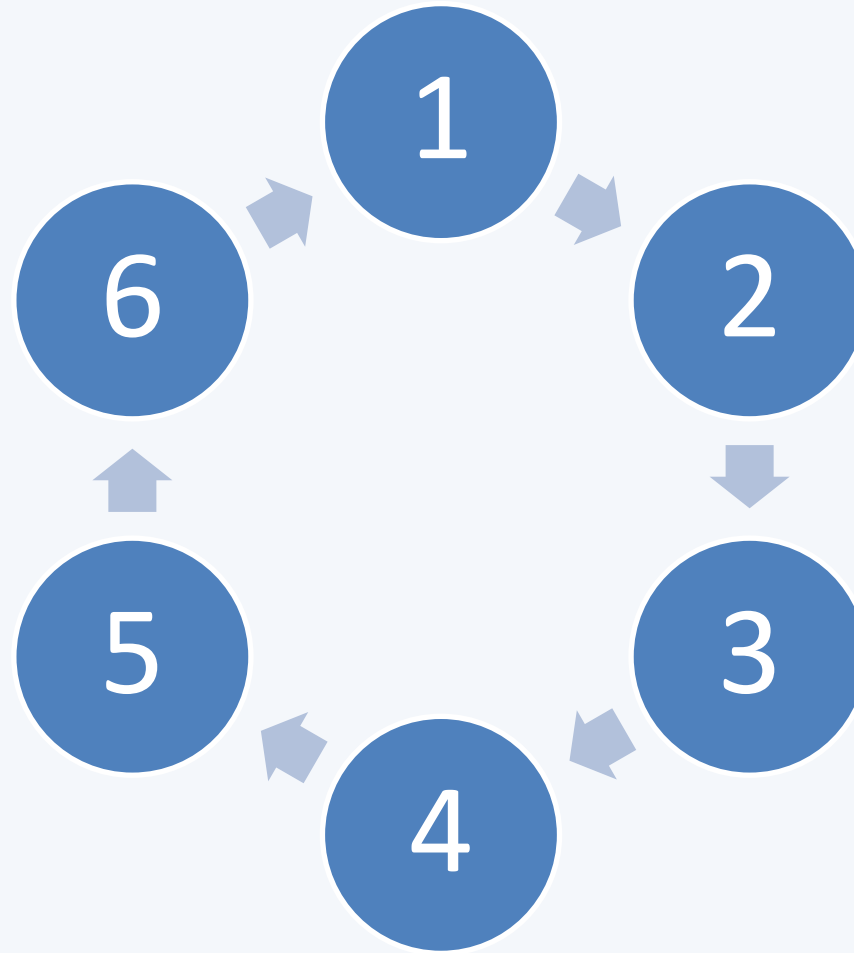
Methodology

- 8 September 2014 : start
- **AGENDA**
 - Introduction on the methodology
 - Suggestions from the working group members for quality indicators in Upper GI endoscopy
 - Practical issues
 - Conflicts of Interest form
 - SIGN online critical appraisal course
 - Development of PICO

	A	B	C	D	E	F
1	DOMAIN	QUALITY MEASURES	MINIMUM STANDARD	TARGET STANDARD		
2	completeness of the procedure	duodenum intubation rate	90%	95%		
3		retroflex in the stomach	90%	95%		
4						
5	Accurate reporting					
6	GENERAL	Report all anatomical parts				
7		Report anatomical landmark (Z-line, upper margin of gastric fold)				
8		Report abnormal findings (localisation, Paris classification, Forrest classification,				
9		Picture Documentation of pathological findings				
10		Picture documentation of anatomical landmarks				
11						
12	Reporting Barrett	Z-line				
13		Upper margin of gastric folds				
14		Prague classification				
15		Picture Documentation of pathological findings				
16		Picture documentation of anatomical landmarks				
17						
18	Intestinal metaplasia of the stomach					
19						
20						
24						
25						

A list of 56 predefined possible quality measures was distributed to the WG members for suggestions and considerations

Next tel con 1 October 2014: structured discussion



Comments made available and send out for PICO

DOMAIN		QUALITY MEASURES	
Preprocedural	A	% of examinations according to indications (list in appendix)	
	B	% examinations performed after informed consent	
	C	% of examinations using HR equipment is required to increase accuracy in general? OR high definition equipment to increase accuracy in specific situations?	
	D	% of patients to whom clear instructions were given with regard to fastening for XX hours (6, 8, other?) and sedation (not allowed to do)	Auditable
	E	% of use of pronase OR simethicone OR acetylcysteine to increase accuracy? Which dose?	Auditable
	F	% of prophylactic antibiotics if indicated (bleeding cirrhotics / PEG placement)	
	G	% of patients with proflatic medication in case of bleeding (PPI for ulcers, somatostatin in case of varices) deep sedation in patients with anxiety (propofol) gastric outlet obstruction gastroparesis : different preprocedural fast preprocedural medication	
completeness of the procedure	H	% duodenum intubation rate	
	I	% retroflex view onto the angulus of the stomach	
	J	% retroflex view of the gastro-oesophageal junction	
	K	% of pts to whom standard pictures (at least D2, angle, retroflex, junction) were taken	
	L	% of minutes in stomach? And esophagus reported surrogate markers : papilla insufflate stomach fully	
Accurate reporting			
GENERAL	M	% of report with all anatomical parts (UES, esophagus, cardia, Z-line, upper margin of gastric folds, lever of diaphragmatic indentation)	
	N	% of reports with anatomical landmarks (UES, Z-line, upper margin of gastric fold)	
	O	Report abnormal findings according to standardized terminology (see for details disease specific terminology) and clearly indicate the localisation	
	P	Picture Documentation of pathological findings	
	Q	Picture documentation of anatomical landmarks : tubular esophagus from upper sphincter, distal esophagus, Z-Line, lesser and greater curvature in anteview	
	R	Report surgical constriction after surgery	
	S	After gastrectomy : report Braun anastomosis	
	PATHOL 4	Any dysplasia should be confirmed by an expert pathologist	
	PATHOL 5	Any dysplasia should be investigated in an expert centre with expertise in advanced imaging techniques (chromo-endoscopy, NBI)	
	Reflux disease and Barrett's esophagus	RD1	Z-line (regular/irregular)
RD2		Hernia : Upper margin of gastric folds and diaphragmatic indentation	
RD3		LA classification for esophagitis	
PATHOL 1		% of patients with Barrett's dysplasia in surveillance	
BE1		Report BE according to Prague classification	
BE2		Picture documentation of anatomical landmarks and BE each 2 cm (" pictures according to Seattle protocol")	
BE3		Report visible lesions : Paris classification, Size in mm, location of the lesion (distance from incisors and circular, % of circumference involved)	
Screening of squamous cell cancer	BE4	Picture Documentation of visible lesions	
	BE5	Biopsy protocol according to Seattle protocol for standard surveillance	
	SCC1	Indication : ENT tumors, lung tumors, long standing (>10 years) achalasia	
	SCC2	Use of Lugol chromoendoscopy or virtual chromoendoscopy	
	SCC3	Picture documentation of chromoendoscopy findings (eg every 4 cm ?)	
Intestinal metaplasia of the stomach	SCC4	Report visible lesions : Paris classification, Size in mm, location of the lesion (distance from incisors and circular, % of circumference involved)	
	SCC5	Picture Documentation of visible lesions	
	PATHOL 2	% of patients with dysplasia in ENT tumors, lung tumors and long standing achalasia	
	GIM1	% of patients with OLGA or OLGIM classification	
	GIM2	Screen patients with separate biopsies from antrum and corpus	
Upper GI Bleeding	GIM3	Use of targeted biopsies?	
	GIM4	Extensive conditions detection rate should be between 5% (low incidence countries) and 10% high incidence countries)	
	GIM 3	% of ulcers biopsied	
	BL1	Report site of bleeding	
TREATMENT	BL2	Report hemostatic technique and achievement of hemostasis	
HEMOSTATIS		% of patients with dual hemostatic technique in peptic ulcer bleeding	
		% of successful endoscopic hemostasis	
		% of successful eradication of varices	
EARLY NEOPLASIA IN THE UPPER GI TRACT		% of successful endoscopic resection	

Further development

- Additional tel con's on dec 8 and 18 2014.
- Resulting in
 - 67 possible quality measures
 - 108 PICO's for literature search



"After careful consideration of all 437 charts, graphs, and metrics, I've decided to throw up my hands, hit the liquor store, and get snocked. Who's with me?!"

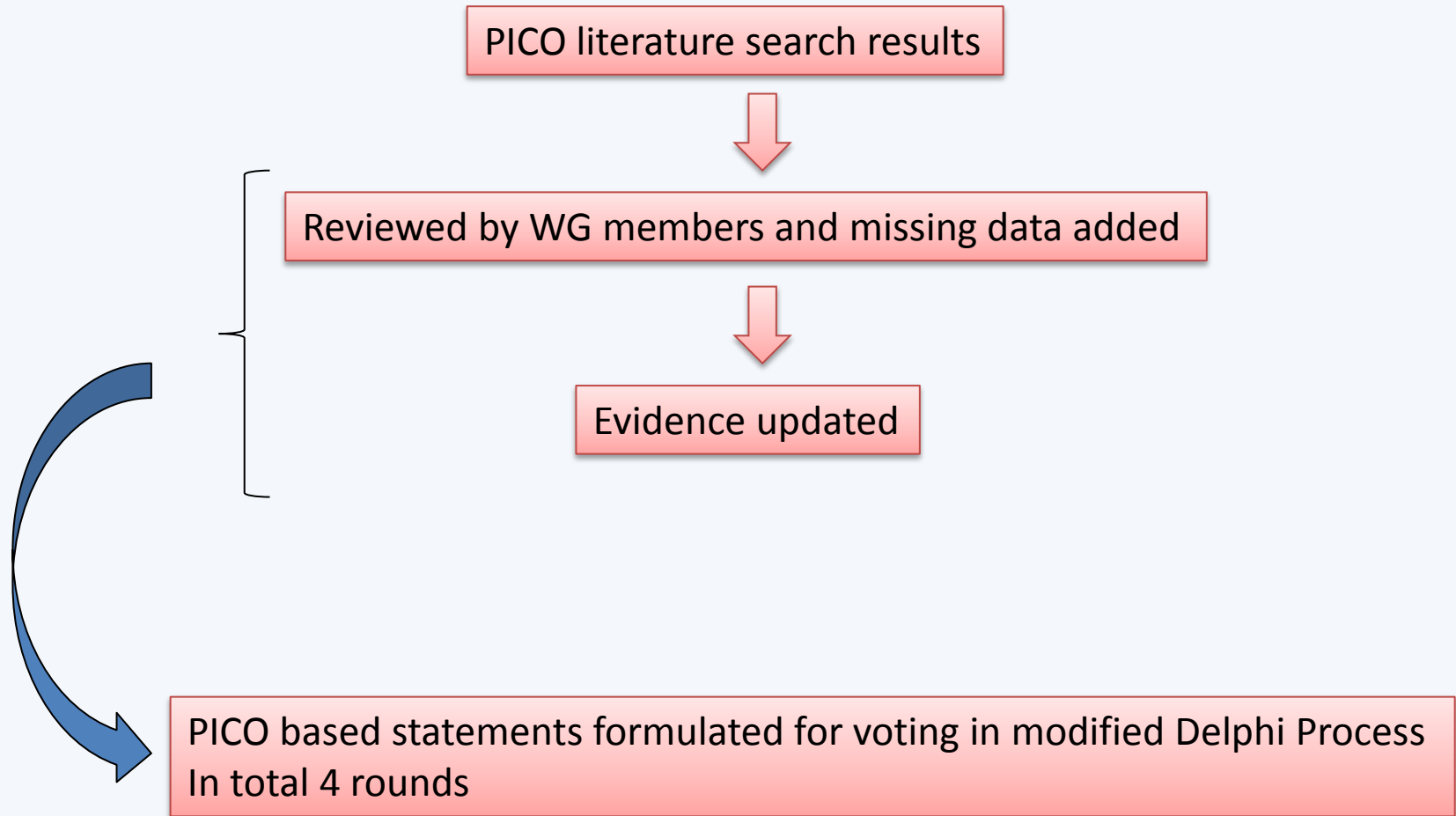
Further development

- February 7 th 2015
- Face to face meeting and discussion
 - Priority list of possible QM and PICOs
 - Focus on the endoscopic procedure rather than the management of diseases (e.g. administration of PPI prior to endotherapy of bleeding ulcer)
 - Service requirements → Service working group (e.g. use of HD equipment)

Final PICOs

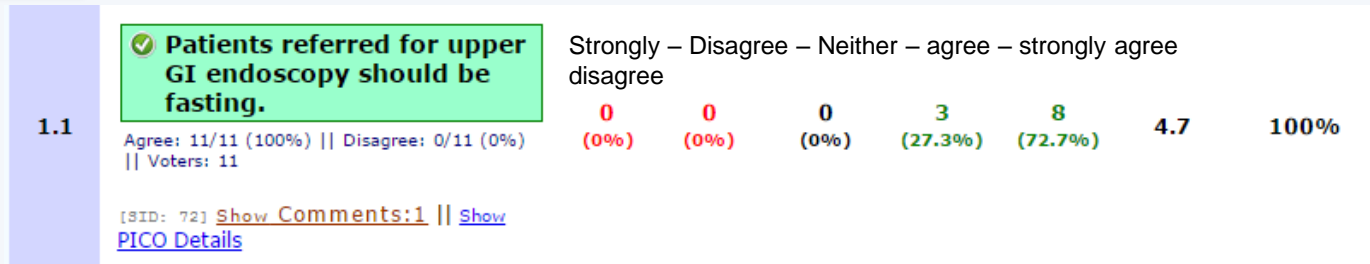
PREPROCEDURAL	
Fasting for liquids and solids	2 PICOs
COMPLETENESS OF PROCEDURE	
By landmarks and manoevers	5 PICOs
By time spent	2 PICOs
ACCURATE REPORTING	
Use of accurate terminology, landmarks, picture documentation	5 PICOs
REFLUX AND BARRETT	
Landmarks, accurate terminology, inspection time, documentation, Seattle protocol	12 PICOs
ENT CANCER PATIENTS AT RISK FOR SCC	
Landmarks, terminology, documentation, chromoendoscopy	7 PICOs
STOMACH : intestinal metaplasia	
Time, biopsies , accurate terminology	5 PICOs
PATIENT SATISFACTION	
Perforation and bleeding after Savary and EMR	6 PICOs
Total	44 PICOs

Development of statements

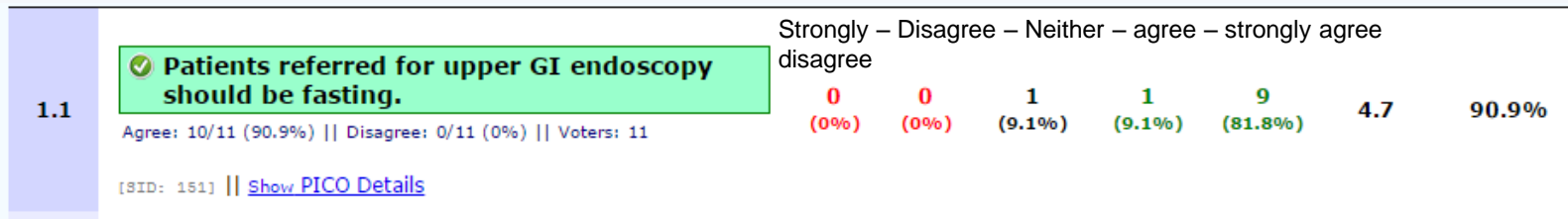


Preprocedural

Round 1



Round 2



1. De Silva, A. Journal of Gastroenterology and Hepatology. 2009; 24(6):1095-7
2. De Silva PA(2011). Evidence Based Guidelines for Preparation Before Upper Gastrointestinal Endoscopy (UGIE), Gastrointestinal Endoscopy, Prof. Oliviu Pascu (Ed.), ISBN: 978-953-307-385-9
3. Koeppel. Comfort, safety and quality of upper gastrointestinal endoscopy after 2 hours fasting: a randomized controlled trial. BMC Gastroenterol. 2013; 13:158

Low quality evidence

Preprocedural

Round 1

1.2

✓ Patients referred for upper GI endoscopy should be fasting for solids at least six hours prior to the procedure

Agree: 10/11 (90.9%) || Disagree: 0/11 (0%)
|| Voters: 11

Strongly – Disagree – Neither – agree – strongly agree
disagree

0	0	1	5	5	4.4	90.9%
(0%)	(0%)	(9.1%)	(45.5%)	(45.5%)		

Round 2

1.2

✓ Patients referred for upper GI endoscopy should be fasting for solids at least six hours prior to the procedure

Agree: 11/11 (100%) || Disagree: 0/11 (0%) || Voters: 11

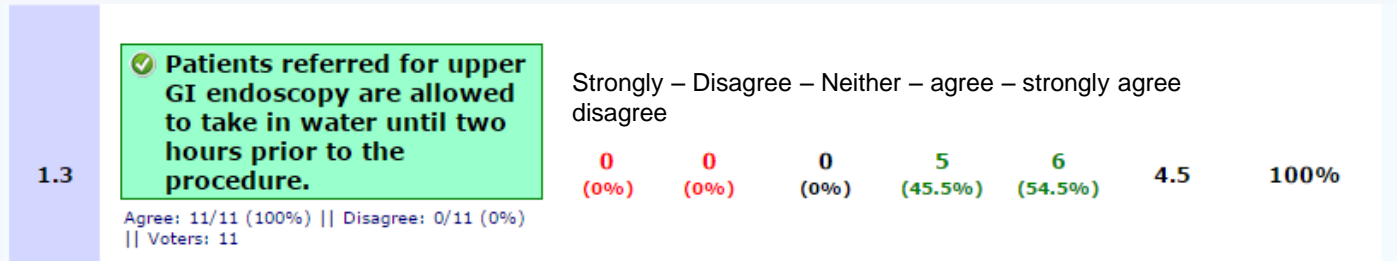
[SID: 152] || [Show PICO Details](#)

Strongly – Disagree – Neither – agree – strongly agree
disagree

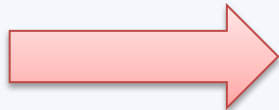
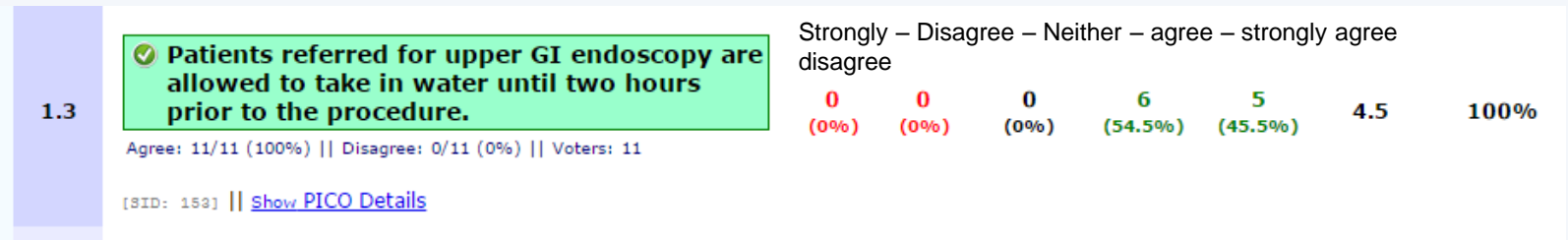
0	0	0	7	4	4.4	100%
(0%)	(0%)	(0%)	(63.6%)	(36.4%)		

Preprocedural

Round 1



Round 2



Quality measure : % of patients with proper instructions for fastening prior to upper GI endoscopy

Completeness of procedure

Round 1

2.1

The papilla major of the duodenum should be visualised and photographed in all upper GI endoscopies when a full examination is intended.

Agree: 6/11 (54.5%) || Disagree: 2/11 (18.2%) || Voters: 11

Strongly disagree – Disagree – Neither – agree – strongly agree

0	2	3	4	2	3.5	54.5%
(0%)	(18.2%)	(27.3%)	(36.4%)	(18.2%)		

Round 2

2.1

Although there is no evidence, the papilla major of the duodenum should be visualised and photographed in all upper GI endoscopies when a full examination is intended in patients with a normal anatomy.

Agree: 8/11 (72.7%) || Disagree: 0/11 (0%) || Voters: 11

[SID: 154] || [show PICO Details](#)

Strongly disagree – Disagree – Neither – agree – strongly agree

0	0	3	7	1	3.8	72.7%
(0%)	(0%)	(27.3%)	(63.6%)	(9.1%)		

No evidence for visualisation of any landmark

What should we measure ?

KEY PERFORMANCE MEASURES	MINOR PERFORMANCE MEASURES
Fasting instructions prior to upper GI endoscopy	More than 7 minutes procedure time for first time UGI endoscopy and follow up of gastric intestinal metaplasia
Reporting duration of the procedure	More than one minute inspection time per centimeter circumferential Barrett
Accurate photo documentation of anatomical landmarks and abnormal findings	Use of lugol chromoendoscopy in patients with a curatively treated ENT or lung cancer to exclude a second primary esophageal cancer
Accurate application of standardized disease related terminology	Application of correct biopsy protocol to detect gastric intestinal metaplasia (MAPS guidelines)
Proper application of Seattle protocol in Barrett's surveillance	Prospective registration of Barrett's patients
Accurate registration of complications after therapeutic UGI endoscopy.	

KPM 1 : Fasting instructions prior to upper GI endoscopy

Description	The percentage of patients with proper instructions for fasting prior to upper GI endoscopy
Domain	Pre-procedure
Category	Process
Rationale	Patient's safety and comfort. Efficacy of upper GI endoscopy.
Construct	<p><u>Denominator</u>: Patients undergoing an upper GI endoscopy</p> <p><u>Numerator</u>: Patients in denominator receiving proper instructions for fasting (2 hours for liquids and 6 hours for solids)</p> <p><u>Exclusions</u>: Emergency endoscopies</p> <p>Calculation: Proportion (%)</p> <p>Level of analysis: Service level</p> <p>Frequency: Yearly for a sample of 300 consecutive upper GI endoscopies</p>
Standards	<p>Minimum standard: 95%</p> <p>Target standard: no current target standard defined</p> <p>If minimum standard is not reached, information channels to patients and health care providers should be reviewed and revised on a service level. After evaluation and adjustment, close monitoring over 6 months with repeat PM measurement should be performed</p>
Consensus Agreement	91%
PICO (see appendix 1)	1
Evidence Grading	Very low quality

KPM 2 : Reporting duration of the procedure

Description	The percentage of endoscopy reports which record the duration of the procedure from intubation to extubation.
Domain	Completeness of Procedure
Category	Outcome
Rationale	Duration of the procedure relates to inspection and diagnostic yield during UGI endoscopy.

KPM 3 : Accurate photo documentation of anatomical landmarks and abnormal findings

Description	Percentage of endoscopy reports with accurate photo documentation of anatomical landmarks and all abnormal findings
Domain	Completeness of Procedure
Category	Outcome
Rationale	Photo documentation of all anatomical landmarks is an indicator for a complete examination. Accurate photo documentation of abnormal findings allows for better communication and follow-up.
Construct	<p>Accurate photo documentation includes :</p> <ul style="list-style-type: none">- at least 1 representative pictures of each of the following anatomical landmarks: duodenum, papilla major, antrum, angulus, corpus, retroflex, diaphragmatic indentation, squamocolumnar junction, esophagus. (at least 10 in total)- pictures of all abnormal findings mentioned in the report

KPM 4 : Accurate application of standardized disease related terminology

Description	Percentage of endoscopy reports with accurate application of standardized disease related terminology.
Domain	Identification of pathology
Category	Outcome/Process
Rationale	Uniformity in communication.
Construct	Record use of: <ul style="list-style-type: none">- L.A classification for erosive esophagitis- Zargar classification for caustic esophagitis- Prague classification for Barrett's oesophagus- Forrest classification for bleeding ulcers- Spigelman classification for duodenal adenomas in patients with FAP- Paris classification for visible lesions in the stomach and oesophagus.- Varices

KPM 5 : Proper application of Seattle protocol in Barrett's surveillance

Description	Percentage of patients undergoing routine Barrett's surveillance with a proper application of the Seattle protocol.
Domain	Management of pathology
Category	Outcome
Rationale	Accurate surveillance with optimal detection of Barrett's neoplasia and allowing interval between surveillance endoscopies according to guidelines.
Construct	<p>Record the Prague classification</p> <p>Record the use of Seattle protocol with 4 biopsies taken every 2 centimetres of the circumferential extend of the Barrett. Biopsies should be collected in separate jars for targeted biopsies and per level for random biopsies.</p> <p>E.g; : A C4M5 Barrett : at least 12 biopsies should be taken, i.e. 4 at level 0, 2 and 4 cm and put in three different jars numbered according to the localisation.</p>

KPM 6 : Accurate registration of complications after therapeutic UGI endoscopy.

Description	Percentage of patients in which complications (adverse events of harms) after therapeutic upper GI endoscopy is monitored.
Domain	Complications.
Category	Outcome/Structural
Rationale	Monitoring the incidence of complications after therapeutic endoscopy is important to assess safety of procedures, identify possible targets for improvement and allows for accurate patient's informed consent.
Construct	<p>Record therapeutic procedures including :</p> <ul style="list-style-type: none">- Savary dilatation- Pneumatic dilatation- Endoscopic resection of lesions in the oesophagus, stomach and duodenum- PEG insertions <p>Record following parameters</p> <ul style="list-style-type: none">- Immediate complications <p>if patient was contacted between 7 and 14 days after the procedure to assess postprocedural complications . Preferably patient is notified beforehand that he will be contacted.</p>

mPM 7 : More than 7 minutes procedure time for first time UGI endoscopy and follow up of gastric intestinal metaplasia

Description	Percentage of first time gastroscopies and follow-up of gastric intestinal metaplasia lasting more than 7 minutes from intubation to extubation.
Domain	Identification of pathology
Category	Outcome
Rationale	Longer inspection time allows for detecting more lesions in the stomach.
Construct	<p>Record time from intubation to extubation of the endoscope.</p> <p><u>Denominator</u>: : diagnostic UGI endoscopies for dyspepsia and reflux symptoms or for follow-up of gastric intestinal metaplasia.</p> <p><u>Numerator</u>: first time diagnostic UGI endoscopies or follow-up of gastric intestinal metaplasia with at least 7 minutes from intubation to extubation.</p> <p><u>Exclusions</u> :</p> <ul style="list-style-type: none">- Therapeutic procedures- Follow-up endoscopy within 36 months of a previous endoscopy for follow-up of gastric intestinal metaplasia- Emergency endoscopy- Endoscopy with a specific diagnostic purpose : evaluation of a fistula, perforation.- Early termination of endoscopy due to patient's intolerance or safety.

mPM 8 : More than one minute inspection time per centimeter circumferential Barrett

Description	Percentage of routine Barrett' surveillance endoscopies with at least one minute inspection time per centimetre circumferential Barrett's epithelium.
Domain	Identification of pathology
Category	Outcome
Rationale	Better detection of Barrett's neoplasia.
Construct	<p>Record inspection time of the oesophagus.</p> <p>Record the Prague classification</p> <p>Calculate inspection time expressed as minutes/ circumferential extend of the Barrett</p> <p><u>Exclusions :</u></p> <p>Presence of severe esophagitis defined as \geq L.A classification gr C.</p> <p>Therapeutic procedures for treatment of Barrett's oesophagus.</p> <p>Work-up endoscopy for known Barrett's neoplasia when a clearly visible lesion is present defined as a type IIc, Is, or more advanced stage according to the Paris classification.</p>

mPM 9 : Use of lugol chromoendoscopy in patients with a curatively treated ENT or lung cancer to exclude a second primary esophageal cancer

Description	Percentage of procedures with accurate application of chromoendoscopy in patients referred for screening for squamous cell cancer after curative treatment of Ear, Nose and Throat (ENT) or lung cancers.
Domain	Identification of pathology
Category	Outcome
Rationale	Better detection of early oesophageal squamous cell cancer in patients with an increased risk.
Construct	Record the use of Lugol chromoendoscopy in patients with a history of ENT or lung cancer treated with a curative intent

mPM 10 : Application of correct biopsy protocol to detect gastric intestinal metaplasia (MAPS guidelines)

Description	Percentage of patients in which MAPS guidelines are followed when applicable.
Domain	Management of pathology
Category	Outcome
Rationale	Accurate application of the MAPS guidelines identifies patients at risk for gastric cancer. Adequate surveillance allows to detect gastric cancer at an early stage.
Construct	<p>Record the procedures with gastritis, screening for HP gastritis, screening for intestinal metaplasia</p> <p>Record if at least 2 biopsies from the antrum and 2 biopsies from the corpus were taken in two different jars for histology.(MAPS guidelines)</p> <p><u>Exclusions :</u> Therapeutic procedures.</p> <p>Upper GI with normal gastric findings.</p> <p>Gastric findings that do not need application of guidelines : i.e other findings than gastritis, HP infection and screening for intestinal metaplasia.</p> <p>Follow-up of intestinal metaplasia needs no additional systematic biopsies but should focus on lesion detection.</p> <p>Work-up endoscopy for known gastric metaplasia.</p> <p>Patient's with contraindications for biopsies, such as coagulopathy or use of anticoagulants.</p>

mPM 11 : Prospective registration of Barrett's patients

Description	Percentage of patients with a confirmed diagnosis of Barrett's oesophagus that are entered in a registry for monitoring dysplasia incidence.
Domain	Post-procedure
Category	Outcome/Structural
Rationale	Better follow-up of Barrett's patients helps to identify risk factors, accurate incidence of neoplasia and adherence to surveillance guidelines.
Construct	<p>Record all patients with a diagnosis of Barrett's oesophagus</p> <p>Cross-match with registration in a Barrett registry.</p> <p><u>Exclusions :</u></p> <p>Absence of intestinal metaplasia in the biopsies.</p> <p>All Barrett's < C1 according to the Prague classification.</p> <p>Patients older than 75 year.</p> <p>Patient's with contraindications for biopsies, such as coagulopathy or use of anticoagulants.</p>

Next steps

- Draft to be finalized
- Feedback from the societies
- Implementation

Discussion

- We realize this is the first step
- Process is not complete ; adjustments will be necessary in the future.
- Some PM will be difficult to implement
- We hope it can serve as a leverage to stimulate management/health care providers to invest in quality

Conclusions

- Upper GI QM workgroup has gone through a thorough and scientifically sound process to try to identify possible quality measures that may help to monitor and improve quality of upper GI endoscopy in Europe
- For most proposed QM a paucity of data exists.
- The process also generated several research topics

Conclusions

- QM focus
 - Adequate inspection time during endoscopy
 - Adequate reporting and documentation
 - Adequate use of available guidelines for biopsies (Seattle protocol, MAPS guidelines)

