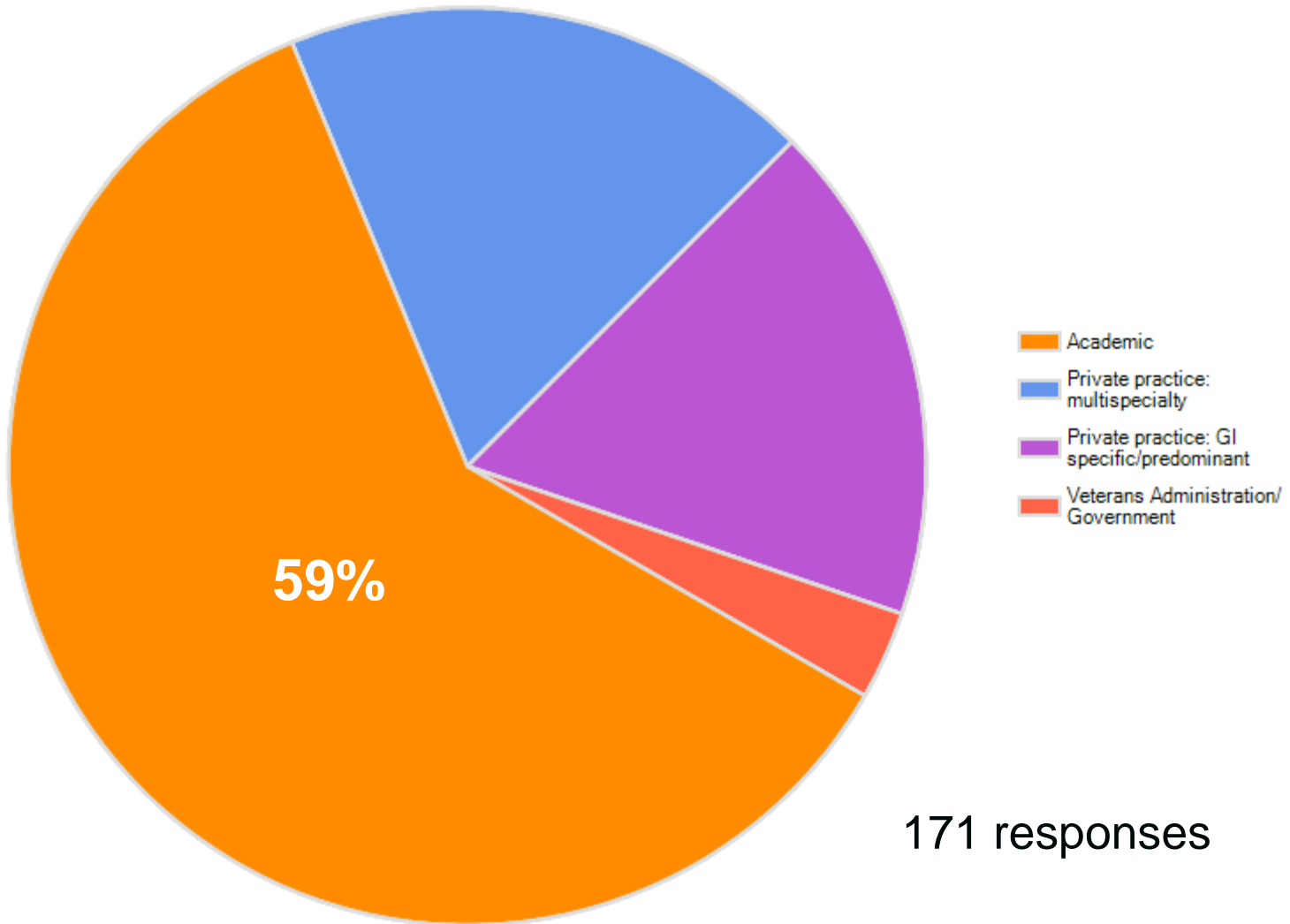


Evidence for Use of “Up Front”  
Ancillary Stains

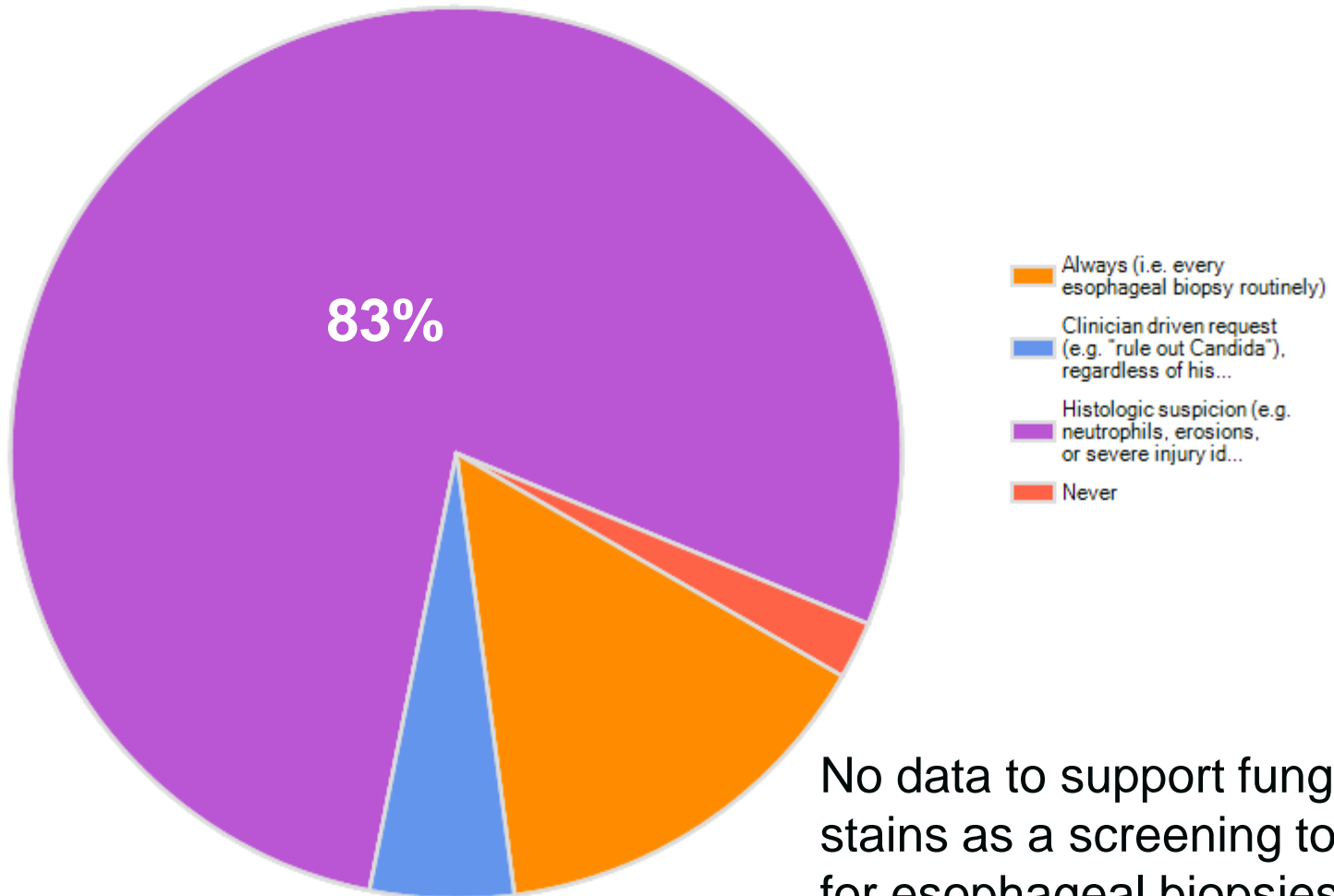
*GIPS Survey and Literature Review*

### What is your practice setting?



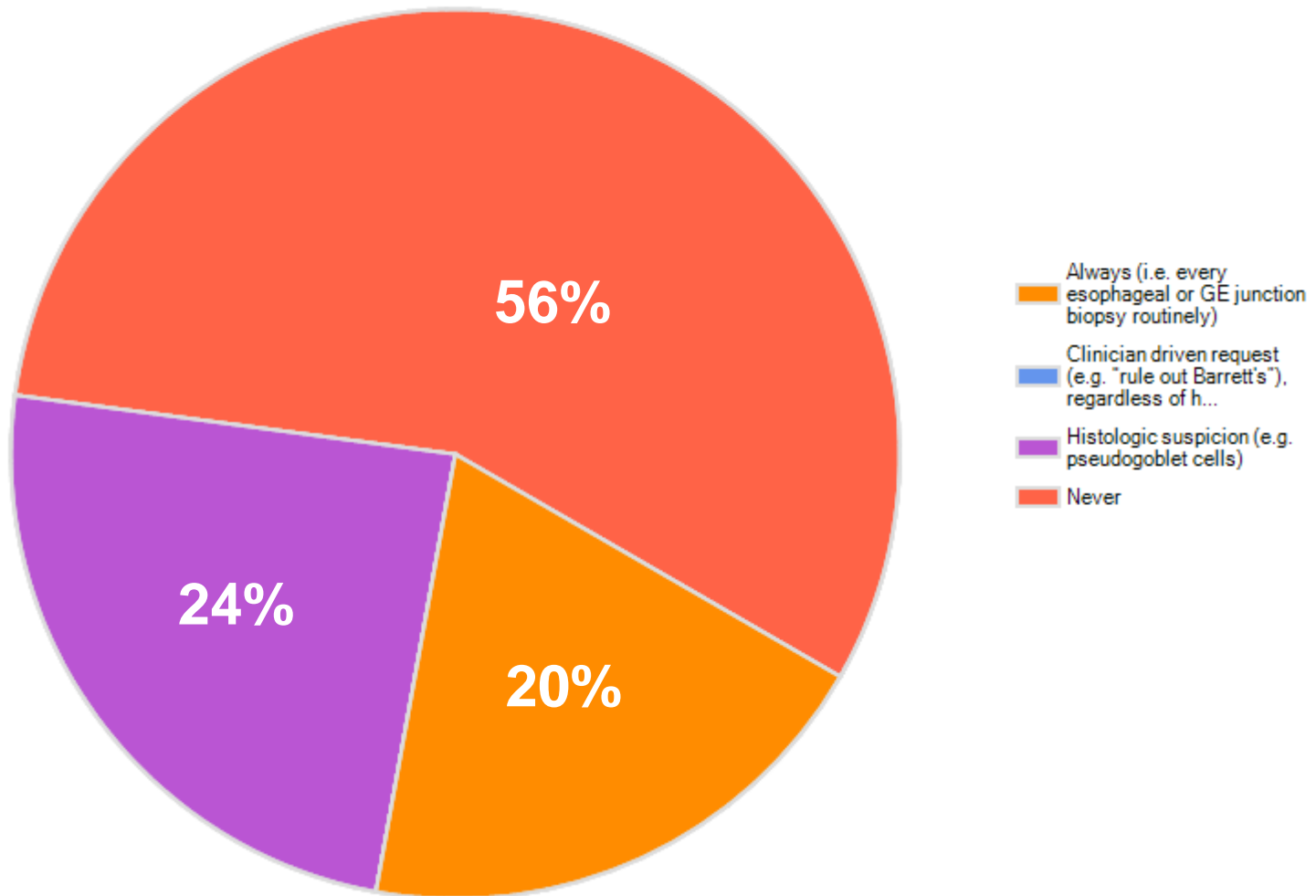
171 responses

**Under which circumstances would you order fungal stains (PAS-D, GMS, or other) to evaluate esophageal mucosal biopsies?**



No data to support fungal stains as a screening tool for esophageal biopsies

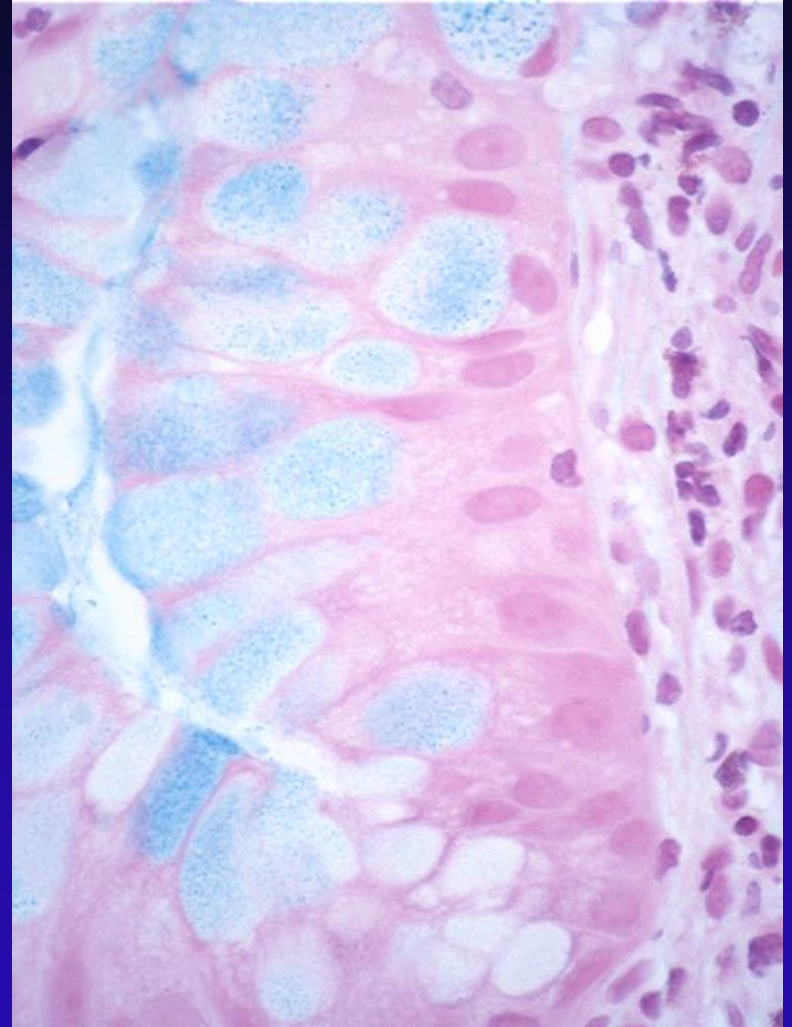
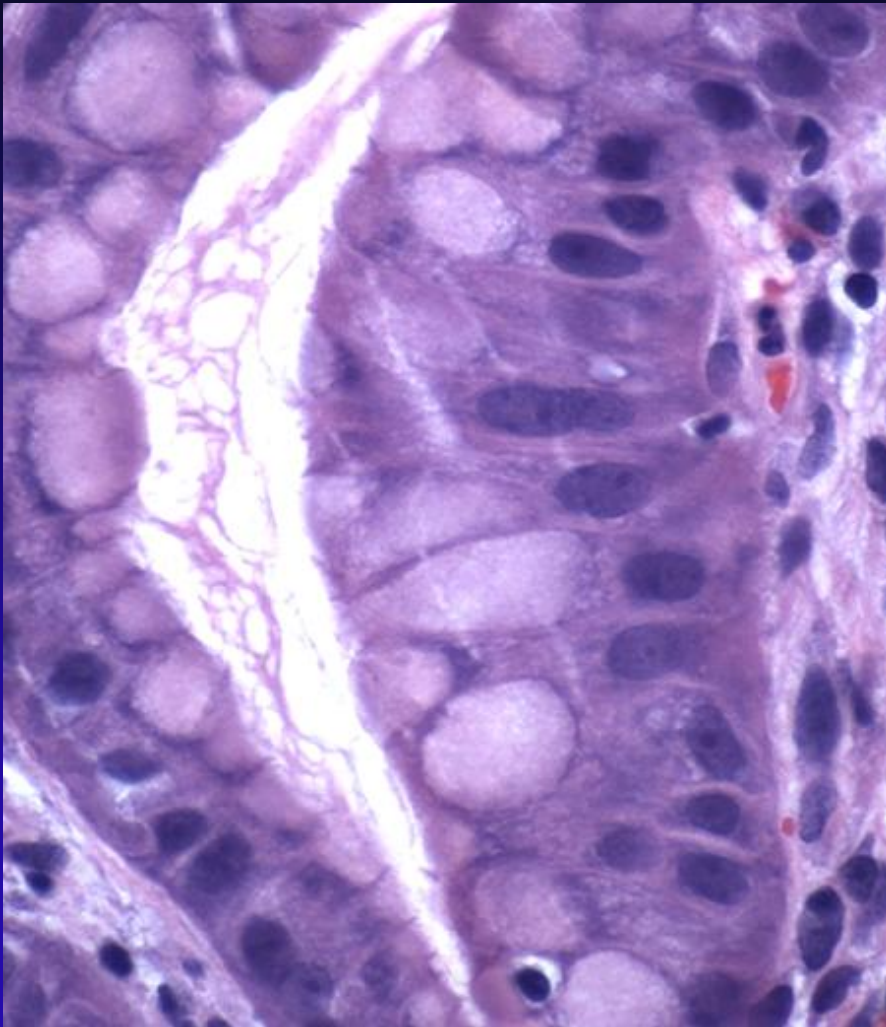
Under which circumstances would you order alcian blue (or other histochemical stains) to detect goblet cells in esophageal mucosal biopsies?



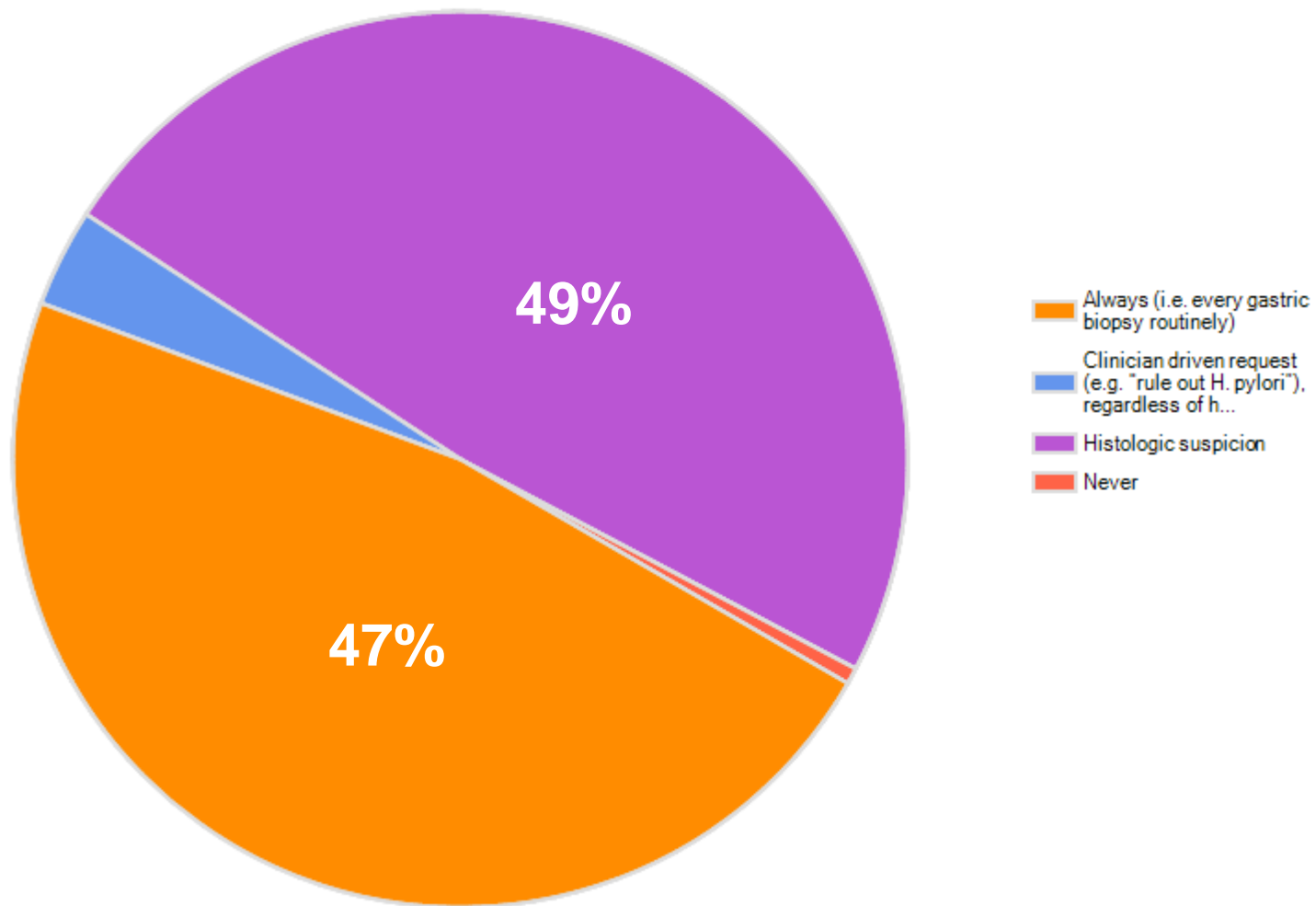
# “Up Front” Ancillary Stains with No Literature Support

- Detection of goblet cells (at least 85 publications)
  - Alcian blue/PAS-D on esophageal biopsies for goblet cells
  - Immunostains for mucin core proteins
  - Immunostains for CDX2
  - None advocate “up front” stains for goblet cell detection

# Mucin Stains in the Detection of Goblet Cells



Under which circumstances would you order ancillary stains (histochemical or immunohistochemical) to detect H. pylori in gastric mucosal biopsies?



## “Up Front” Ancillary Stains for *H. pylori*

	Sensitivity	Specificity
Hematoxylin and Eosin	83-95%	~90%
Giemsa Stain and Variants	89-95%	80%
Warthin Starry and Variants	70-95%	83-94%
Immunohistochemistry	84%	90%

- H&E comparably sensitive to ancillary stains
  - Giemsa stain performs slightly worse
  - Immunostains theoretically more specific

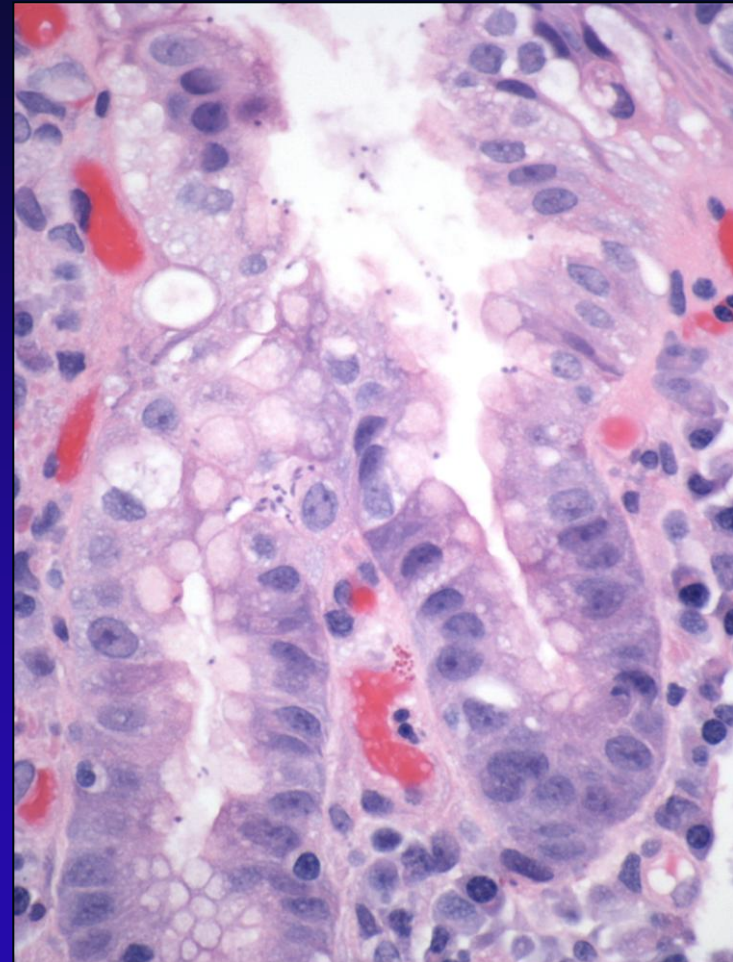


## “Up Front” Ancillary Stains for *H. pylori*

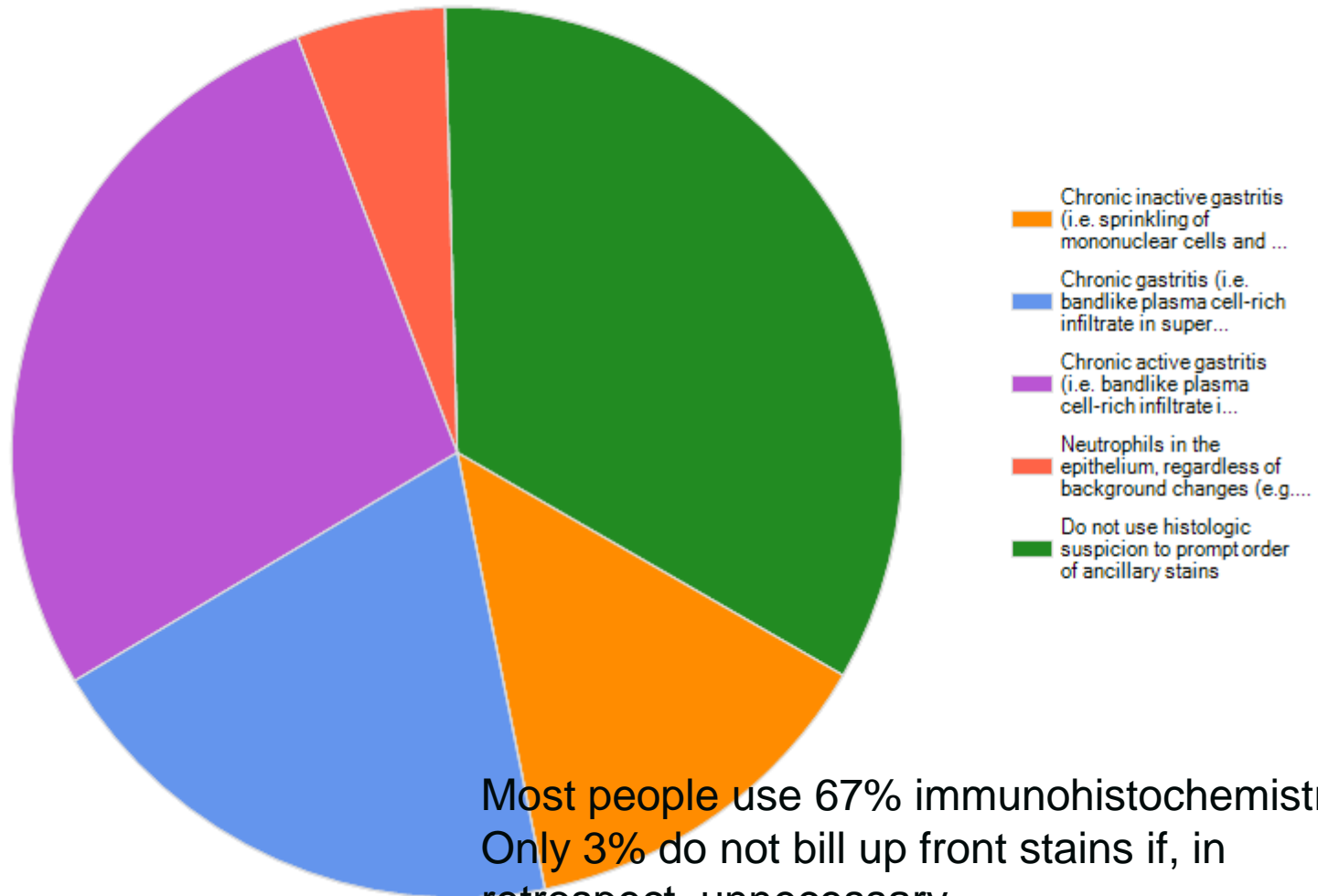
- Sensitivity <70% in patients with low bacterial load
- No data to suggest ancillary stains aid *H. pylori* detection in normal biopsies, even if the CLO test is positive
- No relationship between *H. pylori* detection and clinician request to rule out infection

# “Coccyoid” Forms of *H. pylori*

- Shorter rounded organisms
- Associated with some degree of inflammation, not a background normal stomach
- No data supporting “up front” stains in this situation either

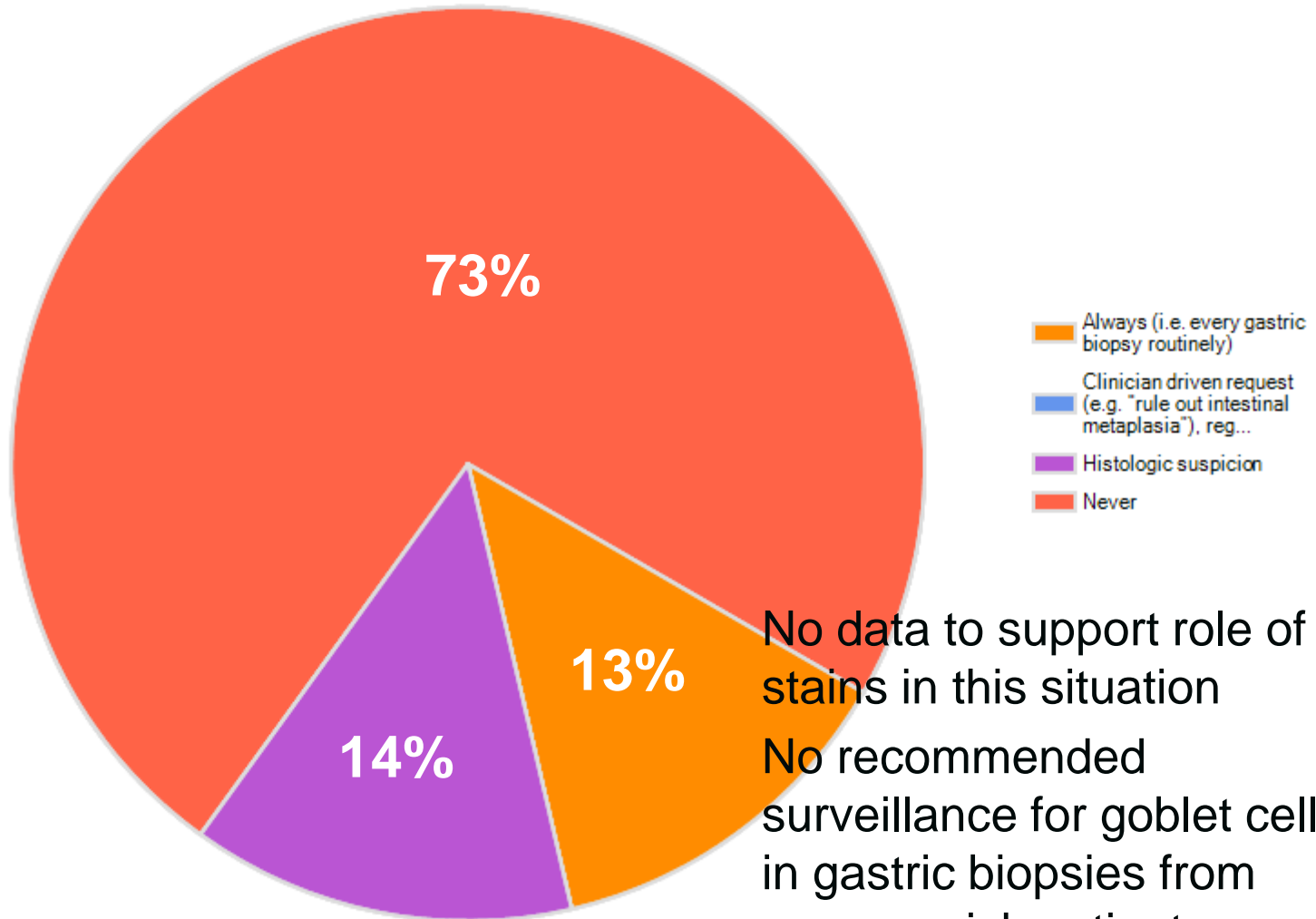


If you DO use personal discretion (histologic suspicion) to prompt the use of ancillary stains for H. pylori evaluation, which criterion best describes your minimal “trigger” for stain requests?



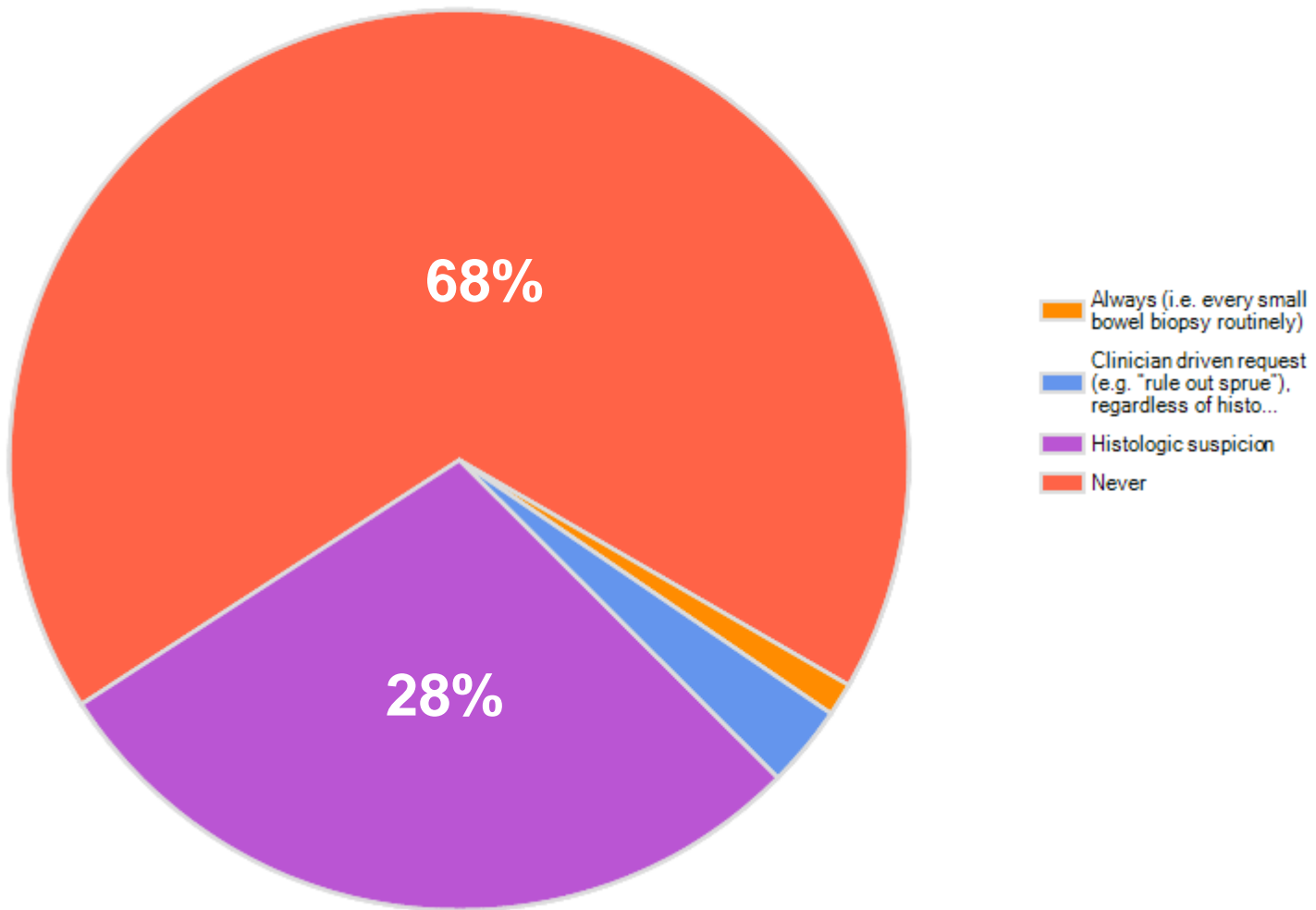
Most people use 67% immunohistochemistry  
Only 3% do not bill up front stains if, in retrospect, unnecessary

Under which circumstances would you order alcian blue (or other histochemical stains) to detect goblet cells in gastric mucosal biopsies?



No data to support role of stains in this situation  
No recommended surveillance for goblet cells in gastric biopsies from average risk patients

Under which circumstances would you order T cell markers (CD3 and CD8) immunostains to detect intraepithelial lymphocytes in small bowel biopsies?



# Immunohistochemistry for IELs

- 74 clinically suspected cases of gluten sensitivity

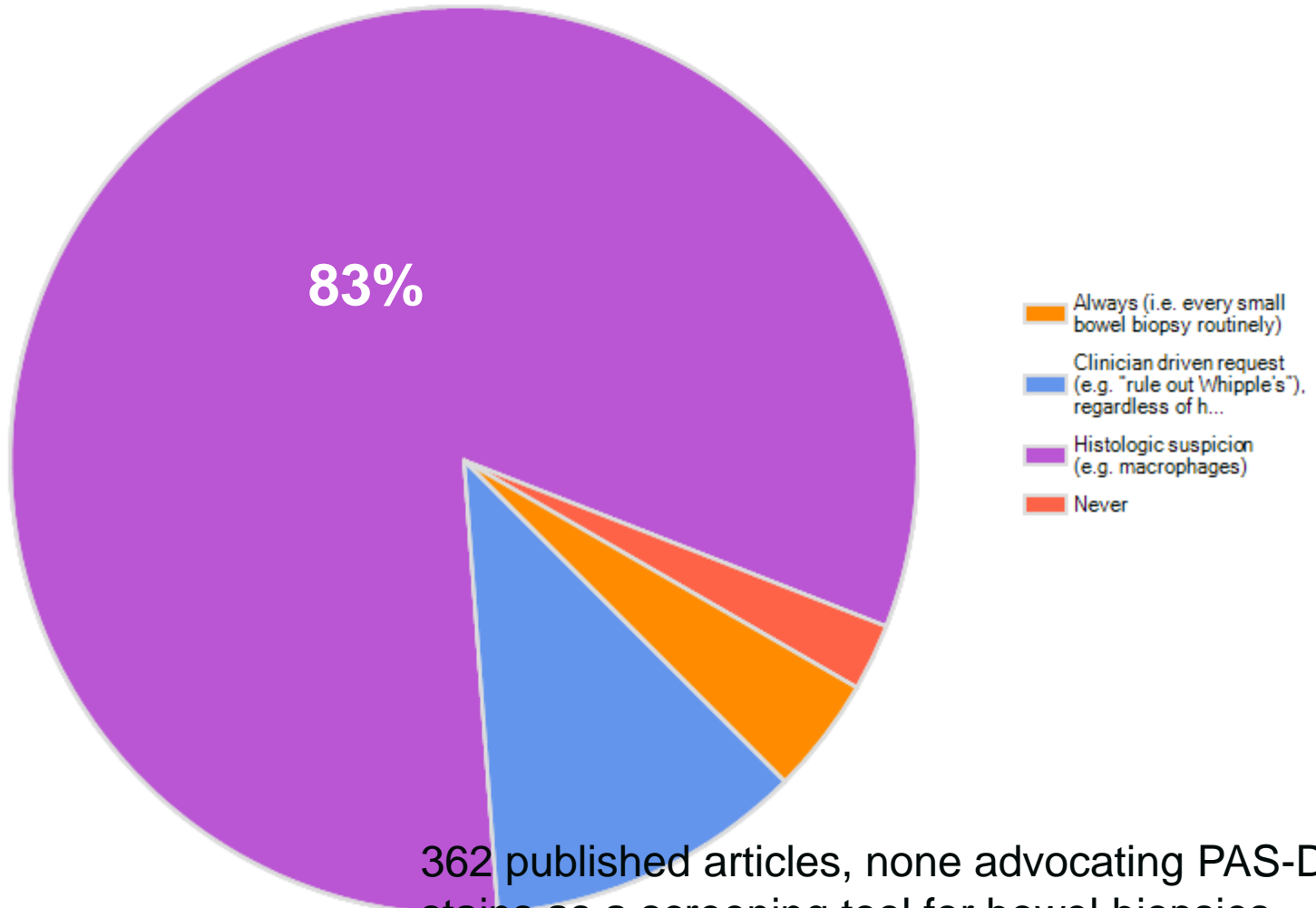
		CD3 + cells/100 enterocytes	CD8 + cells/100 enterocytes
Serology +/Histology +	(n=20)	40	39
Serology +/Histology -	(n=22)	27	24
Serology -/Histology +	(n=4)	23	18
Serology -/Histology -	(n=28)	26	24

- Even distribution of CD3 + IELS over top of villous sensitive for gluten sensitivity
- Immunostains confirm presence of IELs, but no studies show them to be superior to H&E for detecting IELs

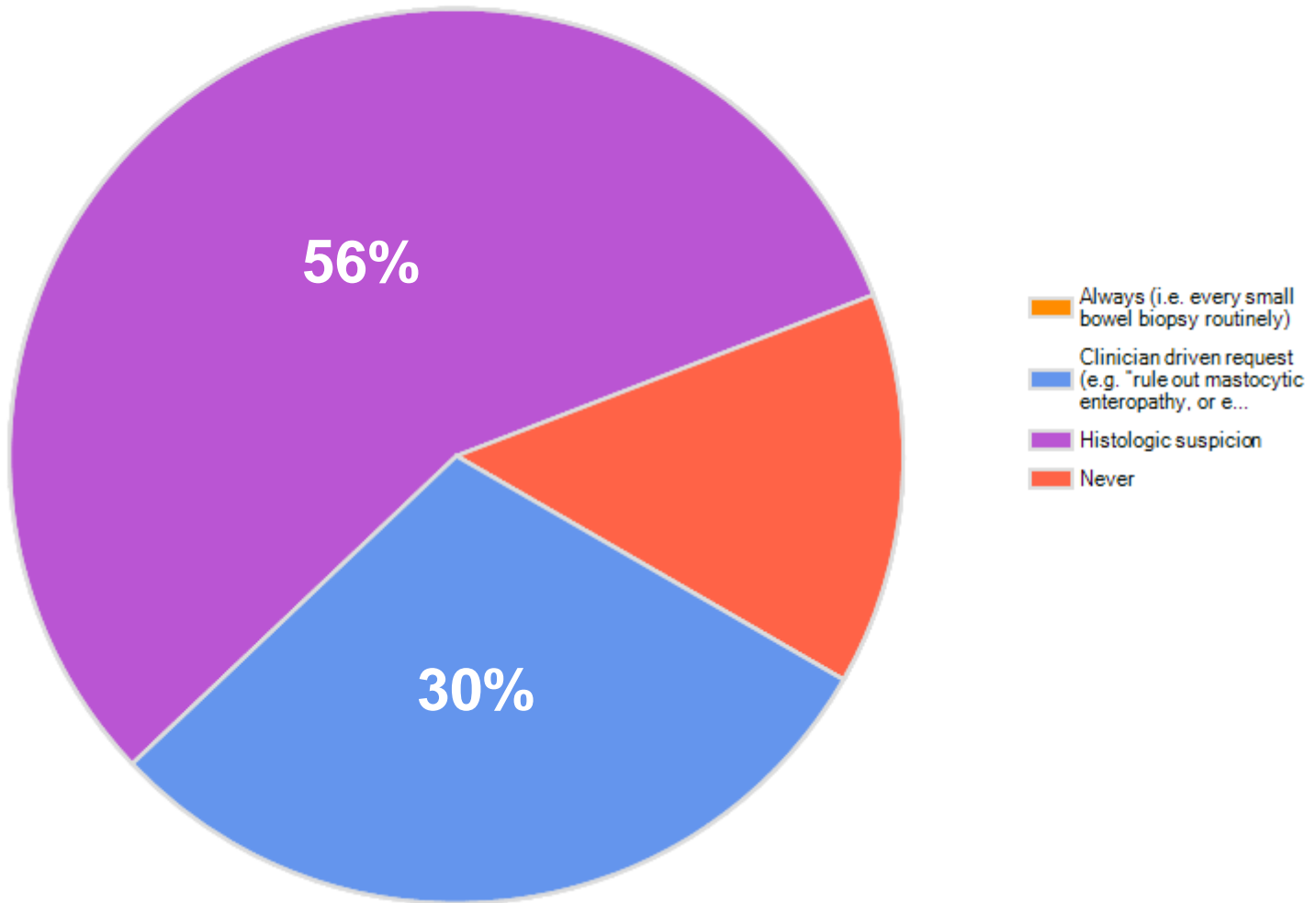
Settakorn, *et al. Appl Immunohistochem Mol Morphol.* 2004; 12(3): 198-204.

Mino, *et al. Am J Surg Pathol.* 2003 27(9): 1237-42.

**Under which circumstances would you order PAS-D stains to detect Whipple's disease in small bowel biopsies?**



Under which circumstances would you order mast cell markers (CD117, mast cell tryptase, or other) immunostains to detect mastocytic enteropathy in small bowel biopsies?





# “Up Front” Ancillary Stains with No Literature Support

- Mastocytic enterocolitis
  - 4 papers, including 1 case report, and 2 reviews
    - 33 patients with >20 mast cells/hpf
    - 67% (22) responded to drug therapy
    - No treatment of patients with <20 mast cells/hpf
    - No control of placebo effect
  - No data support utility of mast cell stains (CD117, mast cell tryptase) in management decisions of IBS patients

# Ancillary Stains for Inflammation

	<b>Always/ Routine</b>	<b>Clinician Driven</b>	<b>Histologic Suspicion</b>	<b>Never</b>
Viral immunostains in immunodeficient patients	6%	16%	78%	1%
Trichrome for collagenous colitis	2%	1%	61%	36%
T cell markers for lymphocytic colitis	0%	2%	13%	85%

# Ancillary Stains for Neoplasia

	Always/ Routine	Clinician Driven	Histologic Suspicion	Never
P53 in Barrett's dysplasia	4%	0%	24%	72%
Mucin stains for signet ring cells in gastric biopsies	7%	1%	68%	25%
DNA repair proteins in non-dysplastic serrated polyps	1%	18%	9%	73%
DNA repair proteins in adenomas	1%	50%	10%	40%
DNA repair proteins in colon cancer biopsies	34%	39%	13%	14%

Trakál, *Acta Gastroenterol Latinoam*. 2010 Sep;40(3): 211-5.  
Lörinc, *Histopathology* 2005; 46; 642-648.

# Summary

## “Up Front” Ancillary Stains

- Essentially no supportive data for any “up front” stains of any type in any organ of the GI tract, especially non-neoplastic disease
  - Biggest issue is “up front” testing for *H. pylori*
- Most pathologists rely on review of H&E when ordering stains