

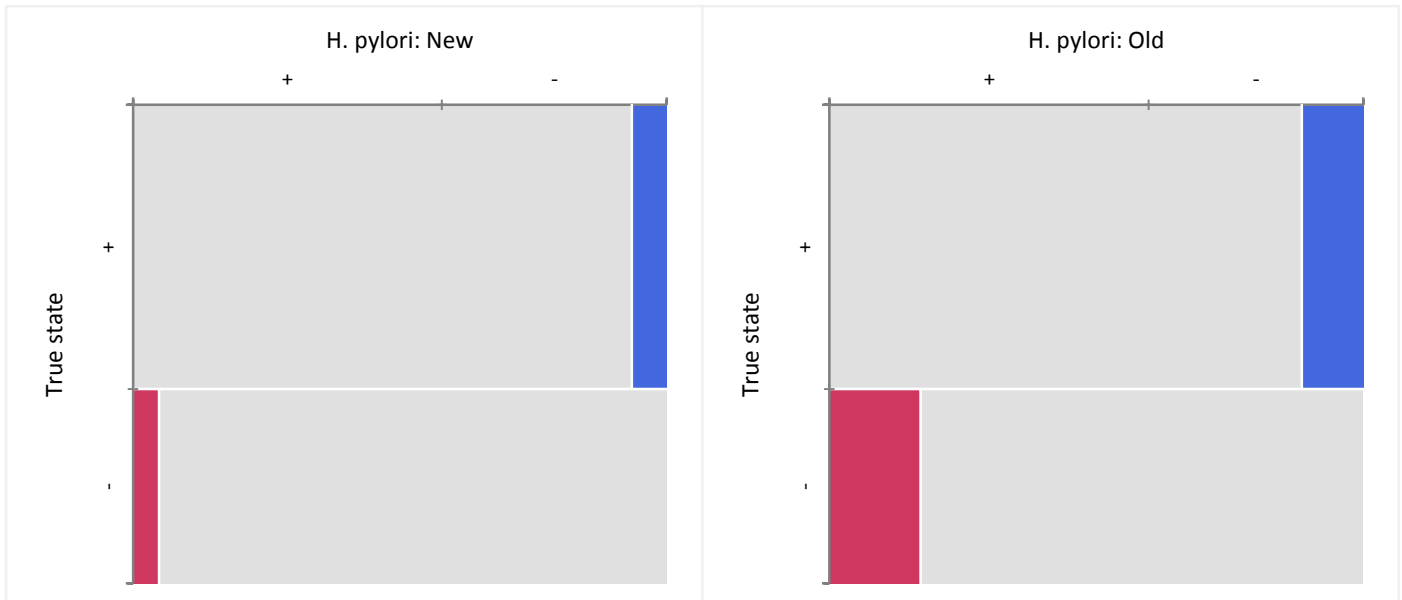
## Diagnostic performance: H. pylori: New, H. pylori: Old

CLSI EP12-A2 - Example 10.3.1

Last updated 23 June 2015 at 15:06 by Simon Huntington

### Frequencies

Mosaic plot



True state	H. pylori: New		Total
	+	-	
+	57	4	61
-	2	39	41
Total	59	43	102

True state	H. pylori: Old		Total
	+	-	
+	54	7	61
-	7	34	41
Total	61	41	102

### Proportions

New	Proportion	Wilson 95% CI
TP (Sensitivity)	0.934	0.843 to 0.974
TN (Specificity)	0.951	0.839 to 0.987
FP	0.049	0.013 to 0.161
FN	0.066	0.026 to 0.157

Old	Proportion	Wilson 95% CI
TP (Sensitivity)	0.885	0.782 to 0.943
TN (Specificity)	0.829	0.687 to 0.915
FP	0.171	0.085 to 0.313
FN	0.115	0.057 to 0.218

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### Predictive values

Prior probability	0.598
<b>New</b>	<b>Predictive value</b>
Positive test	0.966
Negative test	0.907
<b>Old</b>	<b>Predictive value</b>
Positive test	0.885
Negative test	0.829

### Comparison

	Proportion difference	Newcombe 95% CI
Sensitivity	0.049	-0.036 to 0.143
Specificity	0.122	0.007 to 0.256

$$\delta = \pi_{H. pylori: New} - \pi_{H. pylori: Old}$$

### Score Z test

	Z statistic	Asymptotic p-value
Sensitivity	1.34	0.1797 <sup>2</sup>
Specificity	2.24	0.0253 <sup>1</sup>

H0:  $\delta = 0$

The difference in sensitivity/specificity is equal to 0.

H1:  $\delta \neq 0$

The difference in sensitivity/specificity is not equal to 0.

<sup>1</sup> Reject the null hypothesis in favour of the alternative hypothesis at the 5% significance level.

<sup>2</sup> Do not reject the null hypothesis at the 5% significance level.

## Method comparison: H. pylori: HM-CAP EIA, H. pylori: Immunochromatic

CLSI EP12-A2 - Example 10.3.2

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### Frequencies

N		536		
H. pylori: HM-CAP EIA	H. pylori: Immunochromatic		Total	
	-	+		
-	222	15	237	
	0.414	0.028	0.442	
+	14	285	299	
	0.026	0.532	0.558	
Total	236	300	536	
	0.440	0.560	1.000	

### Proportions

Agreement	Proportion	Wilson 95% CI
-	0.937	0.898 to 0.961
+	0.953	0.923 to 0.972
Total	0.946	0.923 to 0.962