

Clinical Drug Investigation

Supplementary Figures and Tables: The Cost Effectiveness of Adjunctive Treatments for Proton Pump Inhibitor- Refractory Gastroesophageal Reflux Disease

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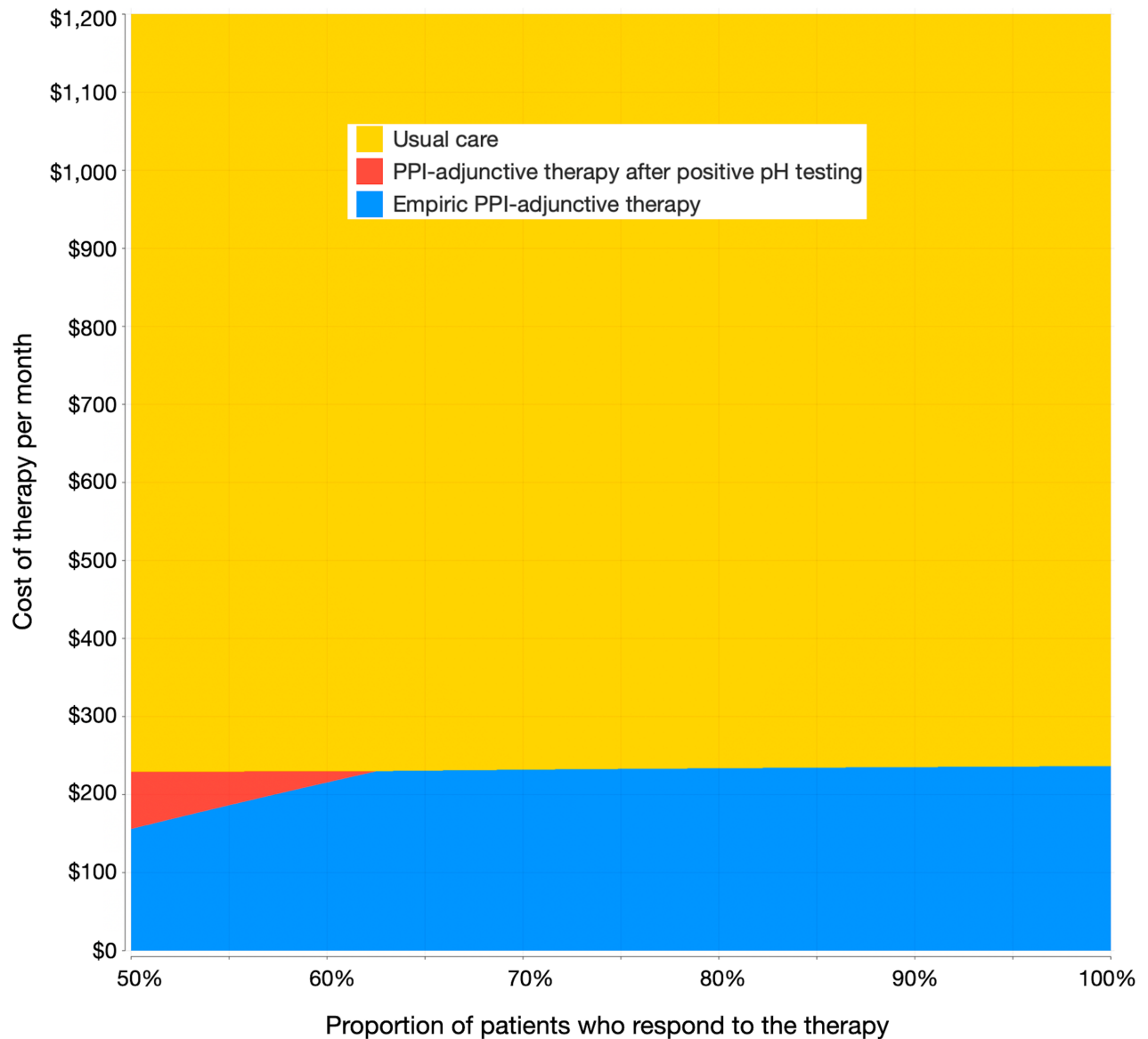
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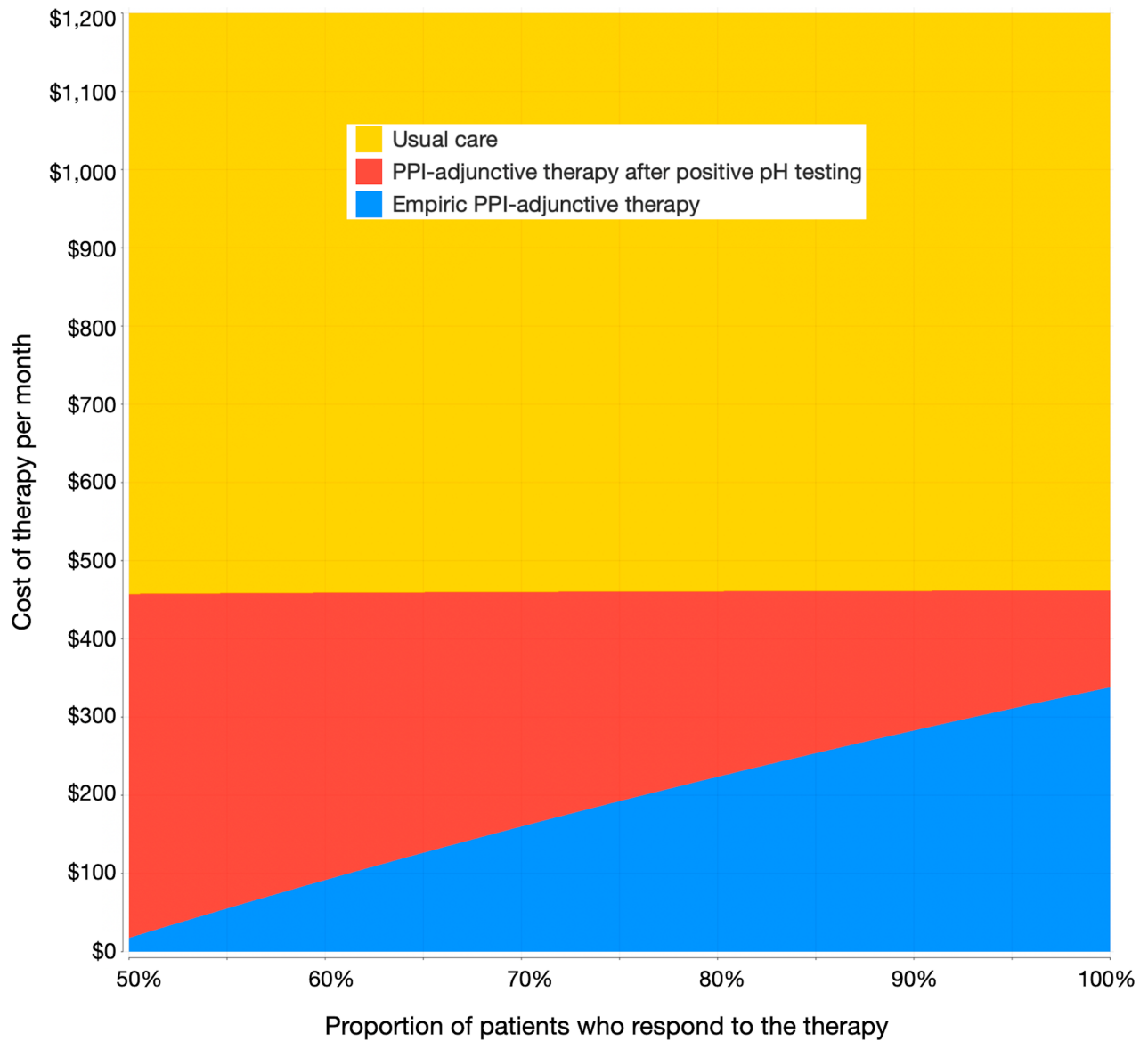
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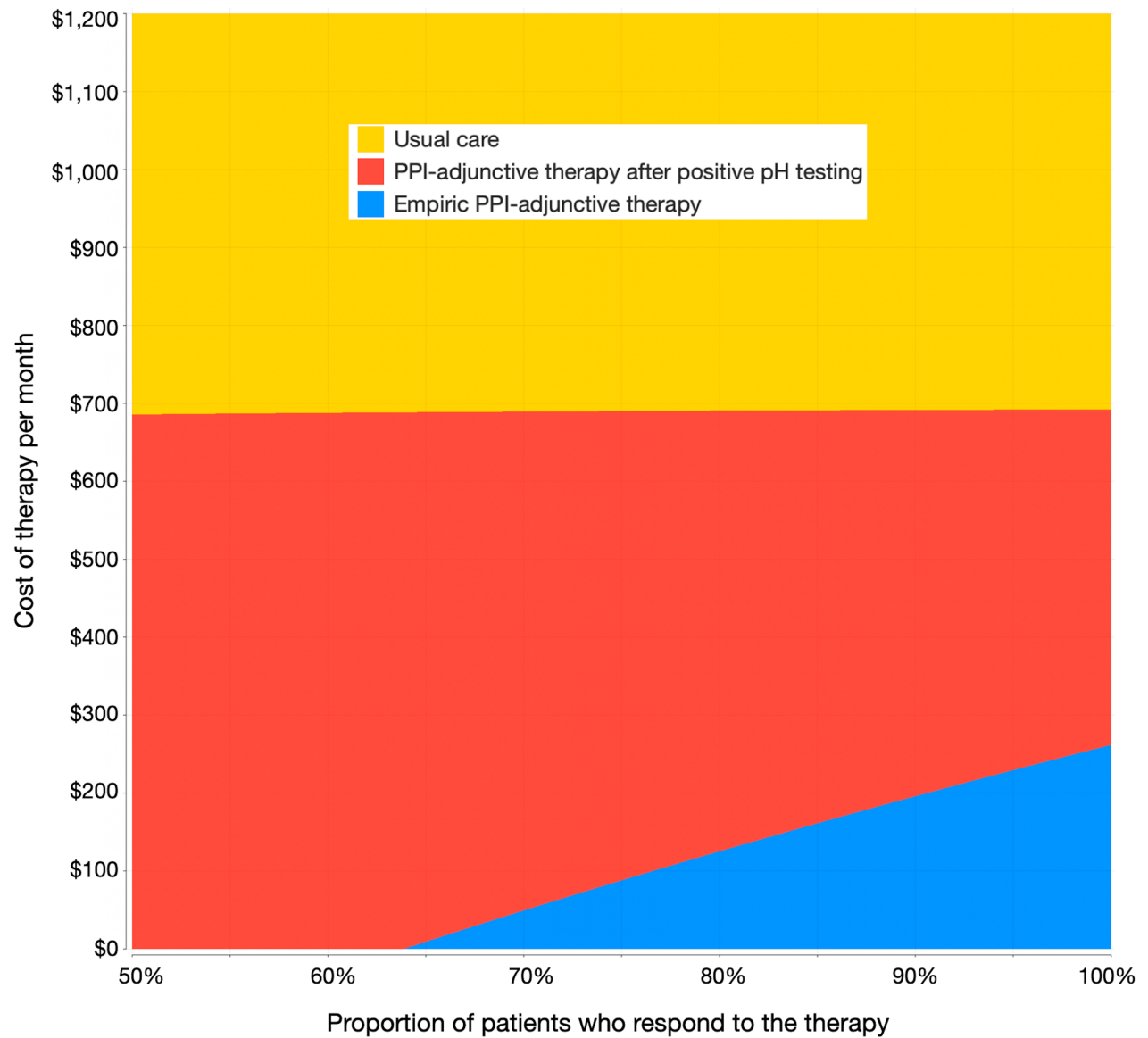
SUPPLEMENTARY FIGURE 1. Nomogram depicting the preferred strategy across various PPI-adjunctive therapy costs and effectivenesses in the base-case scenario (37.3% of PPI-refractory GERD patients have positive pH testing on PPI) using a WTP of \$20,000/QALY. GERD, gastroesophageal reflux disease; PPI, proton pump inhibitor; QALY, quality-adjusted life year; WTP, willingness to pay.



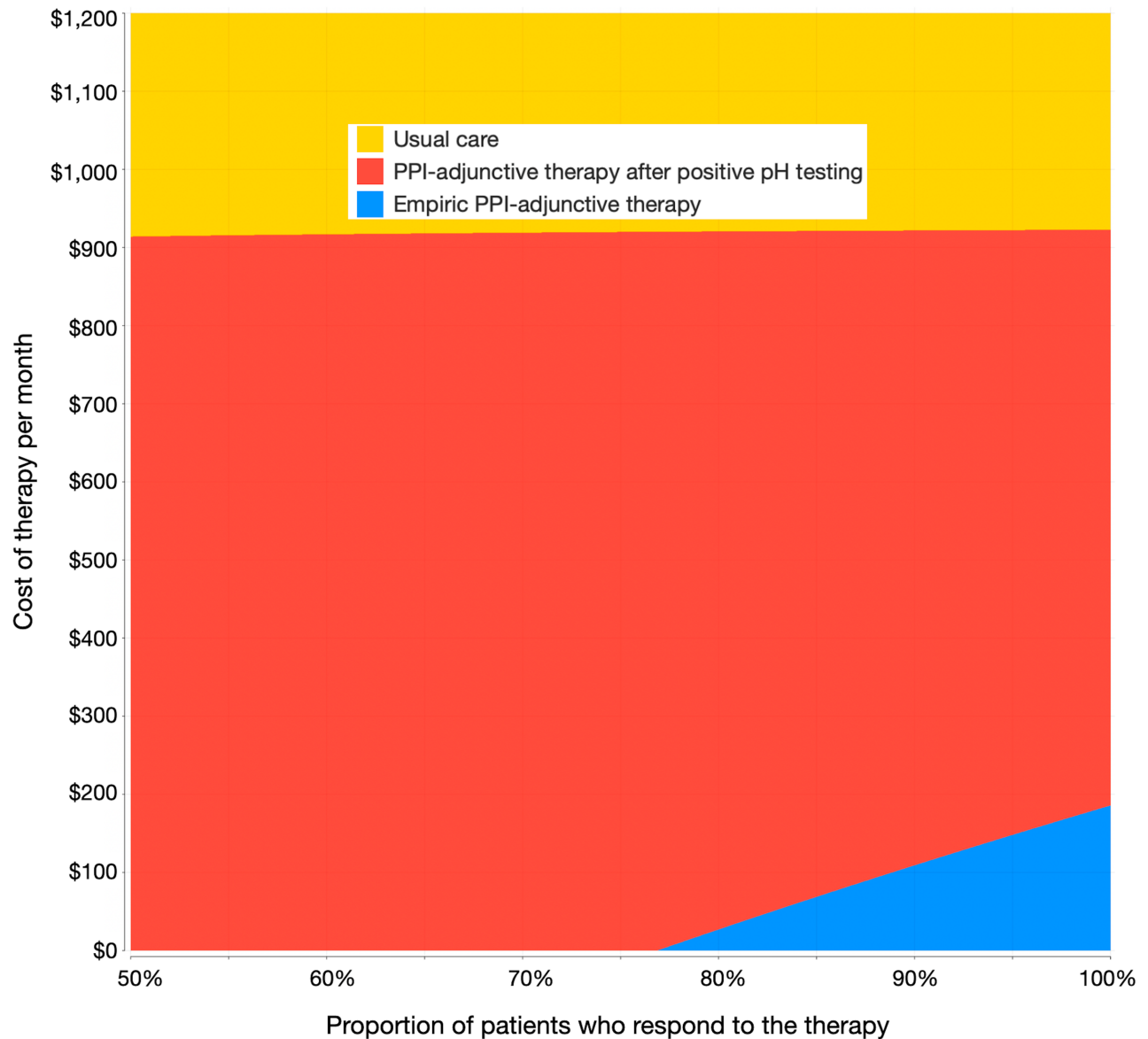
SUPPLEMENTARY FIGURE 2. Nomogram depicting the preferred strategy across various PPI-adjunctive therapy costs and effectivenesses in the base-case scenario (37.3% of PPI-refractory GERD patients have positive pH testing on PPI) using a WTP of \$40,000/QALY. GERD, gastroesophageal reflux disease; PPI, proton pump inhibitor; QALY, quality-adjusted life year; WTP, willingness to pay.



SUPPLEMENTARY FIGURE 3. Nomogram depicting the preferred strategy across various PPI-adjunctive therapy costs and effectivenesses in the base-case scenario (37.3% of PPI-refractory GERD patients have positive pH testing on PPI) using a WTP of \$60,000/QALY. GERD, gastroesophageal reflux disease; PPI, proton pump inhibitor; QALY, quality-adjusted life year; WTP, willingness to pay.



SUPPLEMENTARY FIGURE 4. Nomogram depicting the preferred strategy across various PPI-adjunctive therapy costs and effectivenesses in the base-case scenario (37.3% of PPI-refractory GERD patients have positive pH testing on PPI) using a WTP of \$80,000/QALY. GERD, gastroesophageal reflux disease; PPI, proton pump inhibitor; QALY, quality-adjusted life year; WTP, willingness to pay.



SUPPLEMENTARY TABLE 1. Budget impact model incremental PMPM cost estimates across varying therapy costs and effectivenesses when 10% of PPI-refractory GERD patients have positive pH testing on PPI. Usual care was the reference for both the empiric treatment and PPI-adjunctive therapy after diagnostic testing (i.e., diagnostic testing first) arms.

Cost of therapy per month	Treatment arm	Proportion of patients who respond to the therapy					
		50%	60%	70%	80%	90%	100%
\$250	Empiric treatment	\$0.49	\$0.58	\$0.68	\$0.77	\$0.87	\$0.96
	Diagnostic testing first	\$0.55	\$0.64	\$0.73	\$0.82	\$0.91	\$1.01
\$225	Empiric treatment	\$0.44	\$0.52	\$0.61	\$0.70	\$0.78	\$0.87
	Diagnostic testing first	\$0.49	\$0.57	\$0.66	\$0.74	\$0.82	\$0.90
\$200	Empiric treatment	\$0.39	\$0.47	\$0.54	\$0.62	\$0.69	\$0.77
	Diagnostic testing first	\$0.44	\$0.51	\$0.58	\$0.65	\$0.72	\$0.79
\$175	Empiric treatment	\$0.34	\$0.41	\$0.47	\$0.54	\$0.61	\$0.67
	Diagnostic testing first	\$0.38	\$0.44	\$0.50	\$0.56	\$0.62	\$0.69
\$150	Empiric treatment	\$0.29	\$0.35	\$0.41	\$0.46	\$0.52	\$0.58
	Diagnostic testing first	\$0.32	\$0.37	\$0.42	\$0.48	\$0.53	\$0.58
\$125	Empiric treatment	\$0.24	\$0.29	\$0.34	\$0.39	\$0.43	\$0.47
	Diagnostic testing first	\$0.26	\$0.30	\$0.35	\$0.39	\$0.43	\$0.48
\$100	Empiric treatment	\$0.19	\$0.23	\$0.27	\$0.30	\$0.34	\$0.37
	Diagnostic testing first	\$0.20	\$0.24	\$0.27	\$0.31	\$0.35	\$0.38
\$75	Empiric treatment	\$0.15	\$0.17	\$0.19	\$0.22	\$0.24	\$0.26
	Diagnostic testing first	\$0.15	\$0.17	\$0.20	\$0.23	\$0.26	\$0.29
\$50	Empiric treatment	\$0.09	\$0.10	\$0.12	\$0.13	\$0.14	\$0.16
	Diagnostic testing first	\$0.10	\$0.12	\$0.13	\$0.15	\$0.17	\$0.19
\$25	Empiric treatment	\$0.03	\$0.03	\$0.04	\$0.04	\$0.05	\$0.05
	Diagnostic testing first	\$0.05	\$0.06	\$0.07	\$0.08	\$0.09	\$0.09

GERD, gastroesophageal reflux disease; PMPM, per-member per-month; PPI, proton pump inhibitor.

SUPPLEMENTARY TABLE 2. Budget impact model incremental PMPM cost estimates across varying therapy costs and effectivenesses when 20% of PPI-refractory GERD patients have positive pH testing on PPI. Usual care was the reference for both the empiric treatment and PPI-adjunctive therapy after diagnostic testing (i.e., diagnostic testing first) arms.

Cost of therapy per month	Treatment arm	Proportion of patients who respond to the therapy					
		50%	60%	70%	80%	90%	100%
\$250	Empiric treatment	\$0.93	\$1.11	\$1.29	\$1.47	\$1.66	\$1.83
	Diagnostic testing first	\$0.96	\$1.14	\$1.31	\$1.48	\$1.66	\$1.84
\$225	Empiric treatment	\$0.83	\$1.00	\$1.16	\$1.33	\$1.48	\$1.64
	Diagnostic testing first	\$0.86	\$1.02	\$1.17	\$1.33	\$1.49	\$1.65
\$200	Empiric treatment	\$0.74	\$0.89	\$1.03	\$1.17	\$1.31	\$1.44
	Diagnostic testing first	\$0.76	\$0.90	\$1.03	\$1.18	\$1.32	\$1.47
\$175	Empiric treatment	\$0.65	\$0.78	\$0.89	\$1.01	\$1.13	\$1.25
	Diagnostic testing first	\$0.66	\$0.78	\$0.90	\$1.03	\$1.16	\$1.28
\$150	Empiric treatment	\$0.56	\$0.66	\$0.76	\$0.86	\$0.96	\$1.05
	Diagnostic testing first	\$0.56	\$0.66	\$0.77	\$0.88	\$0.99	\$1.10
\$125	Empiric treatment	\$0.45	\$0.54	\$0.62	\$0.70	\$0.78	\$0.86
	Diagnostic testing first	\$0.46	\$0.55	\$0.64	\$0.74	\$0.83	\$0.92
\$100	Empiric treatment	\$0.35	\$0.42	\$0.48	\$0.54	\$0.60	\$0.67
	Diagnostic testing first	\$0.37	\$0.44	\$0.52	\$0.59	\$0.66	\$0.73
\$75	Empiric treatment	\$0.25	\$0.30	\$0.34	\$0.38	\$0.43	\$0.47
	Diagnostic testing first	\$0.28	\$0.33	\$0.39	\$0.44	\$0.49	\$0.55
\$50	Empiric treatment	\$0.15	\$0.18	\$0.20	\$0.23	\$0.25	\$0.28
	Diagnostic testing first	\$0.18	\$0.22	\$0.26	\$0.29	\$0.33	\$0.36
\$25	Empiric treatment	\$0.05	\$0.06	\$0.06	\$0.07	\$0.08	\$0.09
	Diagnostic testing first	\$0.09	\$0.11	\$0.13	\$0.14	\$0.16	\$0.18

GERD, gastroesophageal reflux disease; PMPM, per-member per-month; PPI, proton pump inhibitor.

SUPPLEMENTARY TABLE 3. Budget impact model incremental PMPM cost estimates across varying therapy costs and effectivenesses when 30% of PPI-refractory GERD patients have positive pH testing on PPI. Usual care was the reference for both the empiric treatment and PPI-adjunctive therapy after diagnostic testing (i.e., diagnostic testing first) arms.

Cost of therapy per month	Treatment arm	Proportion of patients who respond to the therapy					
		50%	60%	70%	80%	90%	100%
\$250	Empiric treatment	\$1.37	\$1.63	\$1.89	\$2.14	\$2.40	\$2.65
	Diagnostic testing first	\$1.38	\$1.64	\$1.91	\$2.17	\$2.44	\$2.71
\$225	Empiric treatment	\$1.23	\$1.46	\$1.69	\$1.92	\$2.14	\$2.37
	Diagnostic testing first	\$1.23	\$1.47	\$1.71	\$1.96	\$2.20	\$2.44
\$200	Empiric treatment	\$1.08	\$1.29	\$1.49	\$1.69	\$1.89	\$2.09
	Diagnostic testing first	\$1.09	\$1.31	\$1.52	\$1.74	\$1.95	\$2.17
\$175	Empiric treatment	\$0.94	\$1.11	\$1.29	\$1.46	\$1.64	\$1.81
	Diagnostic testing first	\$0.96	\$1.14	\$1.33	\$1.52	\$1.71	\$1.90
\$150	Empiric treatment	\$0.79	\$0.94	\$1.09	\$1.24	\$1.38	\$1.53
	Diagnostic testing first	\$0.82	\$0.98	\$1.14	\$1.30	\$1.46	\$1.62
\$125	Empiric treatment	\$0.65	\$0.77	\$0.89	\$1.01	\$1.13	\$1.25
	Diagnostic testing first	\$0.68	\$0.82	\$0.95	\$1.08	\$1.22	\$1.35
\$100	Empiric treatment	\$0.50	\$0.60	\$0.69	\$0.78	\$0.87	\$0.97
	Diagnostic testing first	\$0.55	\$0.65	\$0.76	\$0.87	\$0.97	\$1.08
\$75	Empiric treatment	\$0.36	\$0.42	\$0.49	\$0.55	\$0.62	\$0.69
	Diagnostic testing first	\$0.41	\$0.49	\$0.57	\$0.65	\$0.73	\$0.81
\$50	Empiric treatment	\$0.21	\$0.25	\$0.29	\$0.33	\$0.37	\$0.40
	Diagnostic testing first	\$0.27	\$0.32	\$0.38	\$0.43	\$0.48	\$0.54
\$25	Empiric treatment	\$0.07	\$0.08	\$0.09	\$0.10	\$0.11	\$0.12
	Diagnostic testing first	\$0.13	\$0.16	\$0.19	\$0.21	\$0.24	\$0.27

GERD, gastroesophageal reflux disease; PMPM, per-member per-month; PPI, proton pump inhibitor.

SUPPLEMENTARY TABLE 4. Budget impact model incremental PMPM cost estimates across varying therapy costs and effectivenesses when 40% of PPI-refractory GERD patients have positive pH testing on PPI. Usual care was the reference for both the empiric treatment and PPI-adjunctive therapy after diagnostic testing (i.e., diagnostic testing first) arms.

Cost of therapy per month	Treatment arm	Proportion of patients who respond to the therapy					
		50%	60%	70%	80%	90%	100%
\$250	Empiric treatment	\$1.79	\$2.13	\$2.46	\$2.80	\$3.14	\$3.48
	Diagnostic testing first	\$1.81	\$2.16	\$2.52	\$2.87	\$3.23	\$3.58
\$225	Empiric treatment	\$1.60	\$1.90	\$2.20	\$2.51	\$2.81	\$3.11
	Diagnostic testing first	\$1.63	\$1.95	\$2.27	\$2.59	\$2.91	\$3.23
\$200	Empiric treatment	\$1.41	\$1.68	\$1.94	\$2.21	\$2.47	\$2.74
	Diagnostic testing first	\$1.45	\$1.73	\$2.01	\$2.30	\$2.58	\$2.87
\$175	Empiric treatment	\$1.22	\$1.45	\$1.68	\$1.91	\$2.14	\$2.37
	Diagnostic testing first	\$1.27	\$1.51	\$1.76	\$2.01	\$2.26	\$2.51
\$150	Empiric treatment	\$1.03	\$1.23	\$1.42	\$1.61	\$1.81	\$2.00
	Diagnostic testing first	\$1.08	\$1.30	\$1.51	\$1.72	\$1.94	\$2.15
\$125	Empiric treatment	\$0.84	\$1.00	\$1.16	\$1.32	\$1.48	\$1.63
	Diagnostic testing first	\$0.90	\$1.08	\$1.26	\$1.43	\$1.61	\$1.79
\$100	Empiric treatment	\$0.65	\$0.78	\$0.90	\$1.02	\$1.14	\$1.27
	Diagnostic testing first	\$0.72	\$0.86	\$1.00	\$1.15	\$1.29	\$1.43
\$75	Empiric treatment	\$0.46	\$0.55	\$0.64	\$0.72	\$0.81	\$0.90
	Diagnostic testing first	\$0.54	\$0.65	\$0.75	\$0.86	\$0.96	\$1.07
\$50	Empiric treatment	\$0.27	\$0.32	\$0.38	\$0.43	\$0.48	\$0.53
	Diagnostic testing first	\$0.36	\$0.43	\$0.50	\$0.57	\$0.64	\$0.71
\$25	Empiric treatment	\$0.08	\$0.10	\$0.11	\$0.13	\$0.14	\$0.16
	Diagnostic testing first	\$0.18	\$0.21	\$0.25	\$0.28	\$0.32	\$0.35

GERD, gastroesophageal reflux disease; PMPM, per-member per-month; PPI, proton pump inhibitor.

SUPPLEMENTARY TABLE 5. Budget impact model incremental PMPM cost estimates across varying therapy costs and effectivenesses when 50% of PPI-refractory GERD patients have positive pH testing on PPI. Usual care was the reference for both the empiric treatment and PPI-adjunctive therapy after diagnostic testing (i.e., diagnostic testing first) arms.

Cost of therapy per month	Treatment arm	Proportion of patients who respond to the therapy					
		50%	60%	70%	80%	90%	100%
\$250	Empiric treatment	\$2.20	\$2.62	\$3.04	\$3.46	\$3.88	\$4.30
	Diagnostic testing first	\$2.25	\$2.69	\$3.13	\$3.58	\$4.02	\$4.46
\$225	Empiric treatment	\$1.97	\$2.34	\$2.72	\$3.09	\$3.47	\$3.85
	Diagnostic testing first	\$2.03	\$2.42	\$2.82	\$3.22	\$3.61	\$4.01
\$200	Empiric treatment	\$1.73	\$2.07	\$2.40	\$2.73	\$3.06	\$3.39
	Diagnostic testing first	\$1.80	\$2.15	\$2.51	\$2.86	\$3.21	\$3.56
\$175	Empiric treatment	\$1.50	\$1.79	\$2.07	\$2.36	\$2.65	\$2.93
	Diagnostic testing first	\$1.57	\$1.88	\$2.19	\$2.50	\$2.81	\$3.12
\$150	Empiric treatment	\$1.27	\$1.51	\$1.75	\$1.99	\$2.24	\$2.48
	Diagnostic testing first	\$1.35	\$1.61	\$1.88	\$2.14	\$2.41	\$2.67
\$125	Empiric treatment	\$1.03	\$1.23	\$1.43	\$1.63	\$1.82	\$2.02
	Diagnostic testing first	\$1.12	\$1.34	\$1.56	\$1.78	\$2.00	\$2.22
\$100	Empiric treatment	\$0.80	\$0.95	\$1.11	\$1.26	\$1.41	\$1.57
	Diagnostic testing first	\$0.90	\$1.07	\$1.25	\$1.43	\$1.60	\$1.78
\$75	Empiric treatment	\$0.57	\$0.68	\$0.79	\$0.89	\$1.00	\$1.11
	Diagnostic testing first	\$0.67	\$0.80	\$0.94	\$1.07	\$1.20	\$1.33
\$50	Empiric treatment	\$0.34	\$0.40	\$0.46	\$0.53	\$0.59	\$0.65
	Diagnostic testing first	\$0.45	\$0.53	\$0.62	\$0.71	\$0.80	\$0.88
\$25	Empiric treatment	\$0.10	\$0.12	\$0.14	\$0.16	\$0.18	\$0.20
	Diagnostic testing first	\$0.22	\$0.26	\$0.31	\$0.35	\$0.39	\$0.44

GERD, gastroesophageal reflux disease; PMPM, per-member per-month; PPI, proton pump inhibitor.