

When does it make sense to increase the use of thromboprophylaxis? An analysis in ten countries

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Objectives:

- Hospital-acquired venous thromboembolism (VTE), which includes deep vein thrombosis (DVT) and pulmonary embolism (PE), burdens healthcare systems around the world.^{1,2}
- In this analysis, ten countries were investigated regarding the cost of thromboprophylaxis compared to the cost of treatment for VTE.

Methods:

- The ten countries were Australia, Brazil, China, France, Mexico, South Korea, Spain, Taiwan, Thailand, and the UK. (Figure 1)

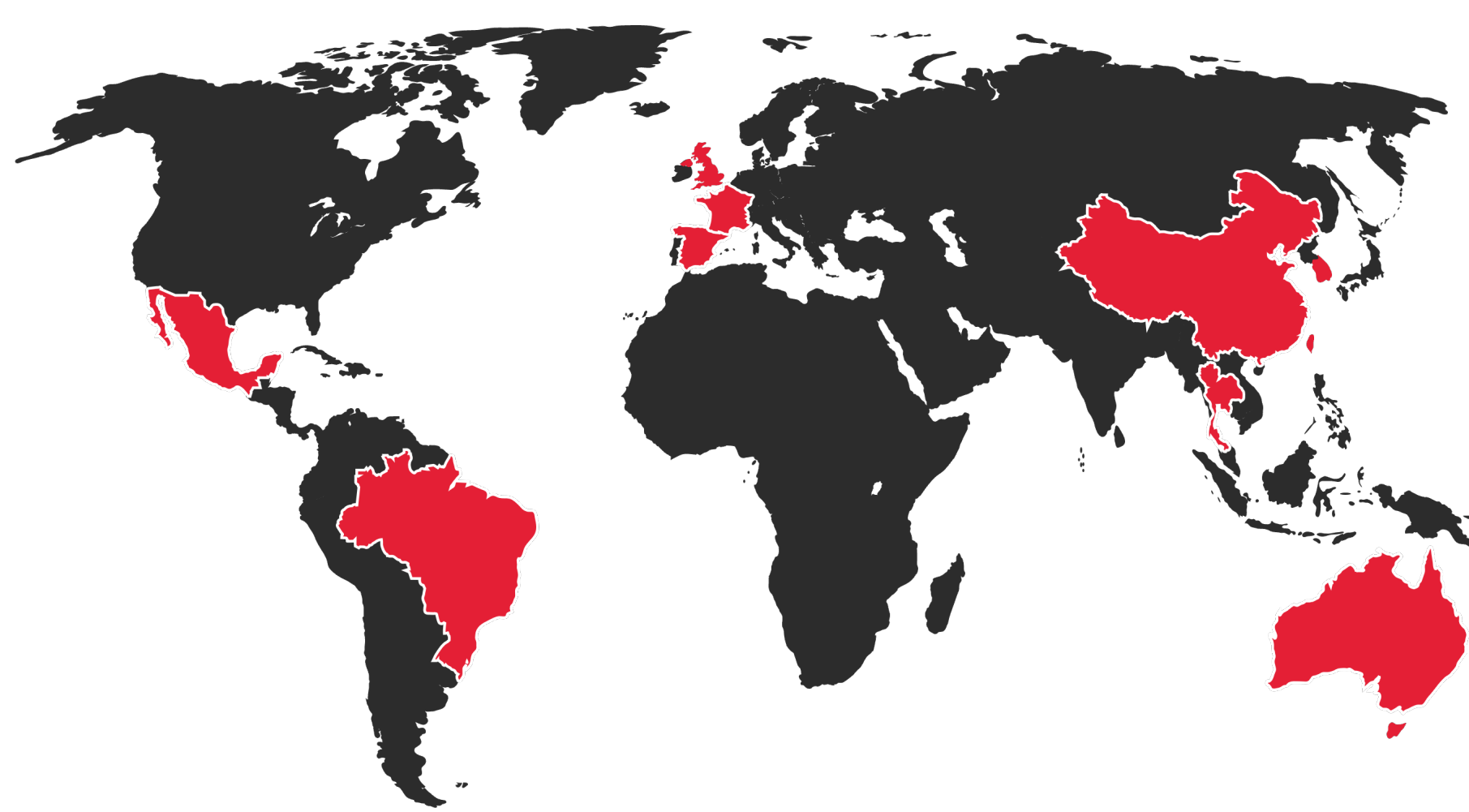


Figure 1 Map of investigated countries

- A burden of disease model for VTE was developed according to the GATHER guideline. (ISPOR EU 2024 poster EPH151)
- Different scenarios for the utilization of prophylaxis were modelled with a decision tree.
- A Markov model was used to model the development of DVT and PE in five clinical areas.
- The main outcome was the total cost of VTE per patient with the current country-specific thromboprophylaxis practice compared to the total cost burden of VTE per patient without thromboprophylaxis.

Table 1 Cost outcomes and incidences of VTE for all combinations of countries and clinical areas

	Orthopedics	Oncology	Long-term ICU	Cardiology	Gynecology & Obstetrics
Cost per patient					
Australia	-\$1,038.64	\$16.46	-\$2,928.62	-\$548.28	-\$230.96
Brazil	-\$134.36	\$13.01	-\$241.45	-\$137.23	-\$23.01
China	-\$791.46	-\$110.97	-\$989.11	-\$125.16	-\$219.45
France	-\$16.42	-\$51.75	-\$480.80	-\$540.16	-\$221.96
Mexico	-\$139.32	-\$2.21	-\$1,049.89	-\$115.80	-\$39.36
South Korea	-\$337.08	\$20.68	-\$122.71	-\$80.32	\$43.82
Spain	-\$408.58	-\$1.68	-\$1,315.26	-\$241.24	-\$48.53
Taiwan	\$30.85	\$19.55	-\$3.18	-\$124.71	-\$40.82
Thailand	-\$77.98	-\$3.79	\$12.73	-\$57.73	-\$11.44
United Kingdom	\$20.33	-\$19.08	-\$110.93	-\$459.43	-\$195.28
Incidence of VTE per 100 patients					
Australia	9.91	1.84	15.64	10.00	4.80
Brazil	6.11	0.90	10.22	10.11	2.53
China	19.64	26.40	18.76	10.40	16.97
France	1.14	5.52	3.12	10.00	4.80
Mexico	8.08	7.10	18.70	10.11	5.10
South Korea	14.56	0.96	5.14	9.71	1.57
Spain	6.98	5.52	15.46	10.00	4.80
Taiwan	2.18	1.40	5.06	10.11	5.47
Thailand	8.87	6.47	1.50	10.11	4.55
United Kingdom	1.36	4.87	1.56	10.00	4.80

Conclusion:

- Additional use of thromboprophylaxis is expected to bring patient and cost benefits in the majority of cases.

Results:

- The average cost of VTE per patient without thromboprophylaxis ranged from \$21 in Thailand to \$4,847 in Australia.
- In most countries and clinical areas, per patient cost for VTE were lower when thromboprophylaxis was used. (Table 1)
- On average, the use of thromboprophylaxis resulted in a cost reduction of 30% across the ten countries. (Figure 2)
- The highest cost reduction with prophylaxis (48%) was found in Australia, with the lowest reduction (10%) in Taiwan. (Figure 2)
- The largest savings with thromboprophylaxis were seen in the clinical areas of long-term ICU, orthopedics, and cardiology. (Figure 3)
- Four of ten countries showed savings in all clinical areas. (Table 1)
- Out of the 50 country/clinical area combinations, 84% had a saving with use of thromboprophylaxis. (Table 1)
- A VTE incidence above 2.2% resulted in savings through thromboprophylaxis across all countries. (Table 1)

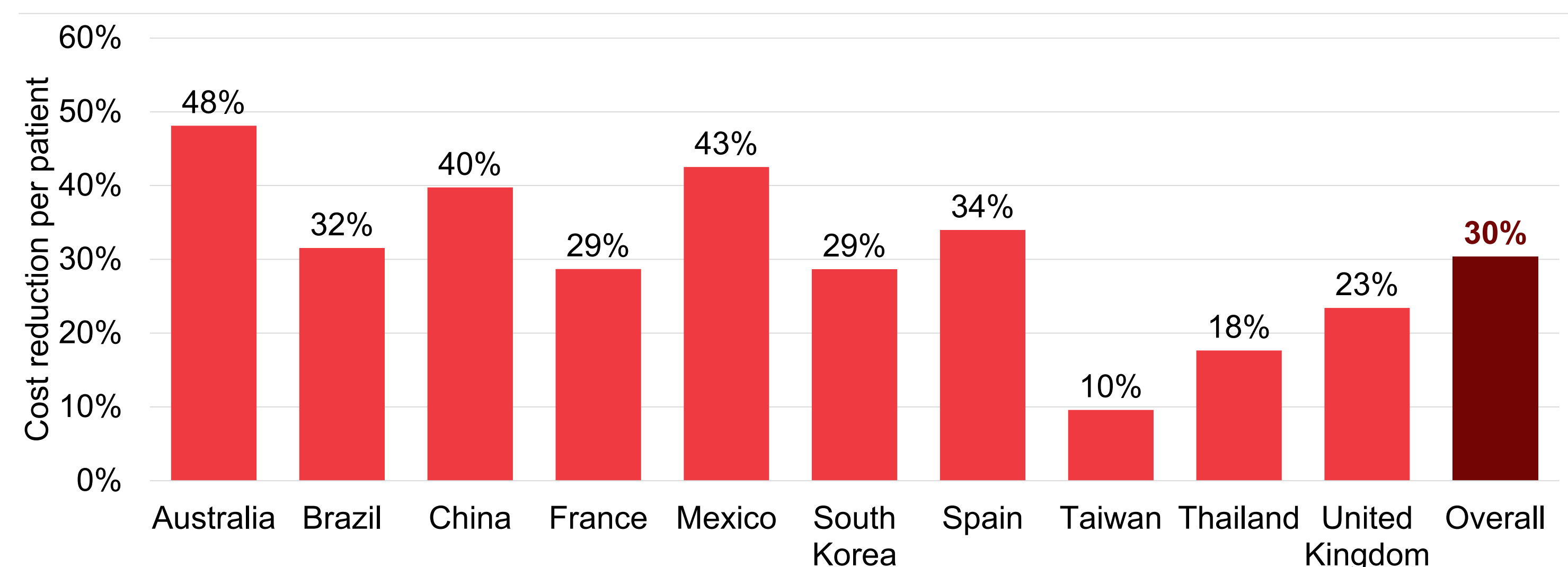


Figure 2 Thromboprophylaxis-related cost reduction by country

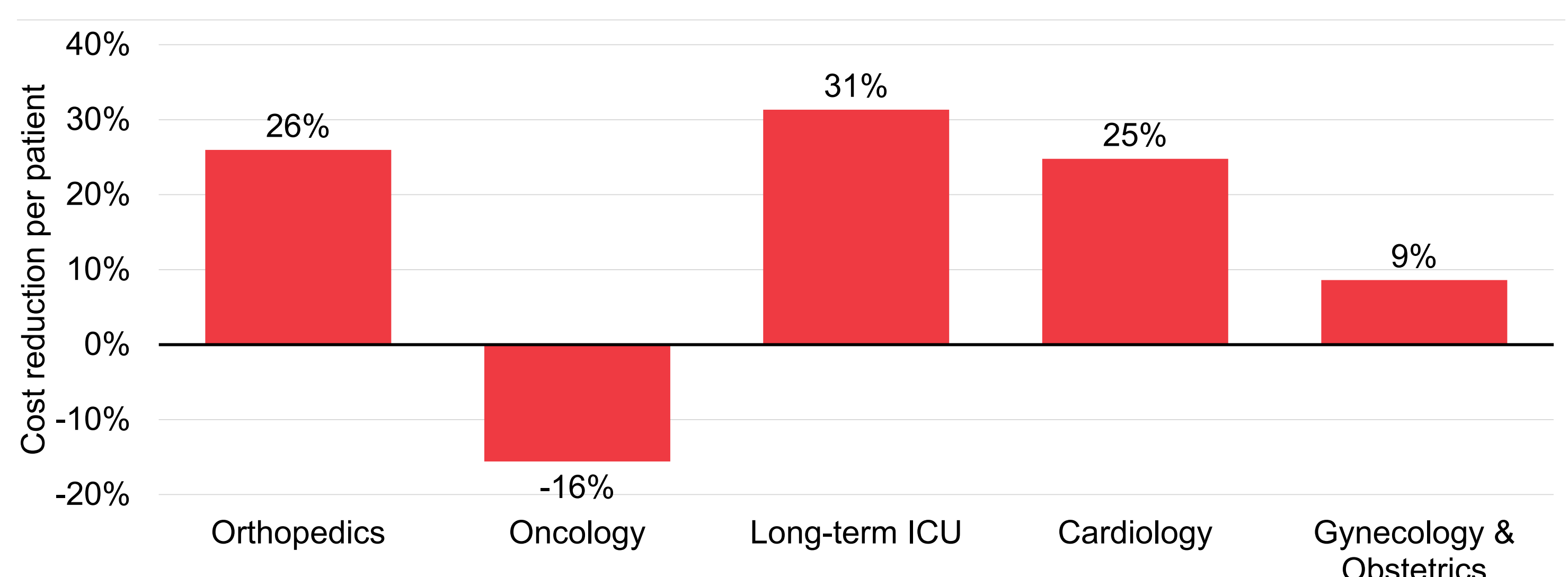


Figure 3 Thromboprophylaxis-related cost reduction by clinical area

Disclaimer

KS & US are employees and RS is the owner of Coreva Scientific, which received consultancy fees from Cardinal Health for this work. HEOR Pro received consultation fees from Cardinal Health to design and carry out the work presented here. This research was funded by Cardinal Health.

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