	Cost containment of global monoclonal antibody drugs and cancer clinical trials via LLM focused reasoning Kevin Kawchak
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	February 25, 2025
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	Traceability Part B TRB Human-in-the-Loop Verification, Scope = Financial Verifications of ChatGPT o3-mini.
	The content is available under CC BY 4.0. Refer to manuscript Table 2 for article references. (Pages 1-8)
	Generation B1: Four Page Report on 15 "Global mAb Cancer Cost" Summaries
	Executive Summary
	3.5 Sonnet 15 Global Summaries
l	Pre-biosimilar reference product mean OOP cost: "\$911" (Feng K. et al.) Post-biosimilar mean OOP cost: "\$707" (Feng K. et al.)
	o3-mini LLM Author and Quote
	"Feng K. et al. 2024"
	mean out-of-pocket costs declined from "\$911" to "\$707"
ł	In-Context
	3.5 Sonnet 15 Global Summaries
2	Bevacizumab biosimilar claims had 21% higher OOP costs than the reference product
	o3-mini LLM Author and Quote
	"Feng K. et al. 2024"
r	biosimilar bevacizumab claims had 21% higher patient spending
(In-Context
	3.5 Sonnet 15 Global Summaries
3	- Rituximab biosimilar claims showed 10% lower OOP costs - Trastuzumab biosimilar claims demonstrated 8% lower OOP costs
	o3-mini LLM Author and Quote
	"Feng K. et al. 2024"
17	biosimilar rituximab and trastuzumab claims reduced costs by 10% and 8%, respectively
Y	In-Context
	3.5 Sonnet 15 Global Summaries
1	- Bevacizumab: "\$110" per dose reduction - Trastuzumab: "\$438" per dose reduction
	o3-mini LLM Author and Quote
	"Chen H. et al. 2024"
	per-dose price reductions for bevacizumab and trastuzumab of "110" and "438"
Y	In-Context
	3.5 Sonnet 15 Global Summaries
5	was associated with a 9.2% increase in biosimilar prescriptions
	o3-mini LLM Author and Quote
	"Itoshima H. et al. 2024"
	biosimilar uptake by 9.2% for rituximab, trastuzumab, and bevacizumab
7	
r	3.5 Sonnet 15 Global Summaries
	3.5 Sonnet 15 Global Summaries The financial incentive of "\$10.4" per patient per month for up to 3 months
	The financial incentive of "\$10.4" per patient per month for up to 3 months
	The financial incentive of "\$10.4" per patient per month for up to 3 months o3-mini LLM Author and Quote
5	The financial incentive of "\$10.4" per patient per month for up to 3 months o3-mini LLM Author and Quote "Itoshima H. et al. 2024"
5	The financial incentive of "\$10.4" per patient per month for up to 3 months 03-mini LLM Author and Quote "Itoshima H. et al. 2024" with modest incentive costs of "\$10.4" per patient per month In-Context
5	The financial incentive of "\$10.4" per patient per month for up to 3 months 03-mini LLM Author and Quote "Itoshima H. et al. 2024" with modest incentive costs of "\$10.4" per patient per month
5	The financial incentive of "\$10.4" per patient per month for up to 3 months o3-mini LLM Author and Quote "Itoshima H. et al. 2024" with modest incentive costs of "\$10.4" per patient per month In-Context 3.5 Sonnet 15 Global Summaries Biosimilar versions were priced 40-60% lower than reference products o3-mini LLM Author and Quote
Y 6 7	The financial incentive of "\$10.4" per patient per month for up to 3 months O3-mini LLM Author and Quote "Itoshima H. et al. 2024" with modest incentive costs of "\$10.4" per patient per month In-Context O3.5 Sonnet 15 Global Summaries Biosimilar versions were priced 40-60% lower than reference products

	3.5 Sonnet 15 Global Summaries
8	Mean costs were "€1,718.27" for IV Herceptin®, "€1,620.66" for subcutaneous Herceptin®, and "€987.97" for biosimilars
	o3-mini LLM Author and Quote
	Kirshner G. et al. 2024"
	converted from "€1,718.27", "€1,620.66", and "€987.97" respectively;
Y	In-Context, Note: 1.1 USD to EUR
	3.5 Sonnet 15 Global Summaries
9	The study found that biosimilar uptake reached 27% market share
	o3-mini LLM Author and Quote
	"Wu Q. et al. 2024"
	biosimilar trastuzumab uptake reached 27%
Y	In-Context
	3.5 Sonnet 15 Global Summaries
10	- Original trastuzumab pricing declined from "\$3,500/440mg" to "\$800/440mg" after negotiations - Switching to biosimilars led to average cost savings of "\$421.11" per treatment course for HER2-positive breast cancer patients
10	o3-mini LLM Author and Quote
	"Wu Q. et al. 2024"
	negotiations reduced originator pricing from "\$3,500/440mg" to "\$800/440mg", resulting in an average saving of "\$421.11" per treatment course
Y	In-Context
,	
	3.5 Sonnet 15 Global Summaries
11	- Mean total one-year cost savings of "\$6,379" per patient with biosimilars
	o3-mini LLM Author and Quote
	"Lu B. et al. 2024"
	reported one-year per-patient savings of "\$6,379
Y	In-Context
	3.5 Sonnet 15 Global Summaries
12	- 62% reduction in non-drug consumables costs, saving "\$999" per patient annually - Total annual savings of "\$5,727" per patient when including all direct and indirect costs
	o3-mini LLM Author and Quote
	"Figallo M. et al. 2024"
	reduced non-drug consumable costs by "\$999" per patient annually and yielded total annual savings of "\$5,727" while also saving significant healthcare professional time
Y	In-Context
	3.5 Sonnet 15 Global Summaries
13	- TDM1 provided an incremental 1.59 quality-adjusted life years (QALYs) at an additional cost of "\$1,408" compared to trastuzumab - The incremental cost-effectiveness ratio (ICER) was "\$886" per QALY gained, below Iran's threshold of "\$1,085" per QALY
	o3-mini LLM Author and Quote
	"Hemati H. et al. 2024"
	Markov model comparing trastuzumab-emtansine to trastuzumab revealed an incremental cost of "\$1,408" with an incremental cost-effectiveness ratio of "\$886" per
	quality-adjusted life year gained
Y	In-Context
	3.5 Sonnet 15 Global Summaries
14	The analysis demonstrates that SC administration reduces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course compared to IV administration
	o3-mini LLM Author and Quote
	"Otoya I. et al. 2024"
	subcutaneous administration of trastuzumab was found to reduce overall treatment costs by "\$4,071.72" per complete treatment course compared to intravenous administration
Y	In-Context
	2.5 Course (15 Clicked Courses)
	3.5 Sonnet 15 Global Summaries
15	- Calculated cost-based prices were significantly lower than current list prices for pembrolizumab, ranging from "\$52 to \$885" per vial compared to list prices of "\$2,861" in the Netherlands and "\$5,350" in the US
	o3-mini LLM Author and Quote
	"Heine R. et al. 2024"
	estimated cost-justified prices for pembrolizumab and daratumumab that were substantially lower than current list price
Y	In-Context, Approximation
	3.5 Sonnet 15 Global Summaries
16	- Keytruda (pembrolizumab) generated revenue of "\$17.321 billion" in 2021, with the cost per patient reaching "\$175,000" per year
	o3-mini LLM Author and Quote

	"Whitacre R. et al. 2024"
	such as pembrolizumab, which has generated annual revenues of "\$17.321 billion" and costs of approximately "\$175,000" per patient per year
Y	In-Context
	3.5 Sonnet 15 Global Summaries
17	- First-line pembrolizumab treatment increased mean per-patient costs by EUR 11,497 compared to pre-immunotherapy chemotherapy
	o3-mini LLM Author and Quote
	"Gentili N. et al. 2024"
	(converted from "€11,497") compared to chemotherapy
Y	In-Context, Note: 1.1 USD to EUR
	Technical Details
	3.5 Sonnet 15 Global Summaries
18	- Claims analyzed: Over 1.7 million total claims
	o3-mini LLM Author and Quote
	"Feng K. et al. 2024"
	One study analyzed over 1.7 million claims
Y	In-Context
10	3.5 Sonnet 15 Global Summaries
19	based on analysis of pricing data across 57 countries
	o3-mini LLM Author and Quote
	"Chen H. et al. 2024" Pharmaceutical sales data from 57 countries
Y	Pharmaceutical sales data from 57 countries In-Context
1	
	3.5 Sonnet 15 Global Summaries
20	The impact of financial incentives promoting biosimilar products in oncology: A quasiexperimental study using administrative data
20	o3-mini LLM Author and Quote
	"Itoshima H. et al. 2024"
	evaluated the impact of financial incentives on biosimilar adoption in Japan
Y	In-Context
	3.5 Sonnet 15 Global Summaries
21	Mean costs were "€1,718.27" for IV Herceptin®, "€1,620.66" for subcutaneous Herceptin®, and "€987.97" for biosimilars
	o3-mini LLM Author and Quote
	"Kirshner G. et al. 2024"
	treatment cost estimates of approximately "\$1,889" for intravenous and "\$1,783" for subcutaneous formulations compared to "\$1,087" for biosimilars
Y	In-Context, Note: 1.1 USD to EUR
~~	3.5 Sonnet 15 Global Summaries
22	- Monthly consumption data from 2,253 representative hospitals across 30 Chinese provinces
	o3-mini LLM Author and Quote
	"Wu Q. et al. 2024"
	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab
	"Wu Q. et al. 2024"
	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context
Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries
Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars
Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote
Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context . Mean total one-year cost savings of "\$6,379" per patient with biosimilars . Mean total one-year cost savings of "\$6,379" per patient with biosimilars
Y 23	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote
Y 23	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context . Mean total one-year cost savings of "\$6,379" per patient with biosimilars . Mean total one-year cost savings of "\$6,379" per patient with biosimilars . Use the savings of "\$6,379" over one year
Y 23	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context . Mean total one-year cost savings of "\$6,379" per patient with biosimilars . Mean total one-year cost savings of "\$6,379" per patient with biosimilars . Use the savings of "\$6,379" over one year
Y 23 Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote "Lu B. et al. 2024" identifying per-patient savings of "\$6,379" over one year In-Context
Y 23 Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote "Lu B. et al. 2024" identifying per-patient savings of "\$6,379" over one year In-Context 3.5 Sonnet 15 Global Summaries
Y 23 Y	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context
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Y 23 Y 24	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context 3.5 Sonnet 15 Global Summaries - Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote "Lu B. et al. 2024" identifying per-patient savings of "\$6,379" over one year In-Context 62% reduction in non-drug consumables costs, saving "\$999" per patient annually - Total annual savings of "\$5,727" per patient when including all direct and indirect costs 03-mini LLM Author and Quote "Figallo M. et al. 2024"
Y 23 Y 24	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context
Y 23 Y 24	"Wu Q. et al. 2024" monthly consumption data from over 2,200 hospitals in China provided insights into biosimilar uptake and price negotiations for trastuzumab In-Context

	o3-mini LLM Author and Quote
	"Hemati H. et al. 2024
	yielding an incremental cost of "\$1,408" and an ICER of "\$886" per QALY
Y	In-Context, Repetition
	3.5 Sonnet 15 Global Summaries
26	The analysis demonstrates that SC administration reduces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course compared to IV administration
	o3-mini LLM Author and Quote
	"Otoya I. et al. 2024
	compared subcutaneous versus intravenous administration of trastuzumab and documented an overall cost saving of "\$4,071.72" per treatment course
Y	In-Context, Repetition
	3.5 Sonnet 15 Global Summaries
27	- Calculated cost-based prices were significantly lower than current list prices for pembrolizumab, ranging from "\$52 to \$885" per vial compared to list prices of "\$2,861" in the Netherlands and "\$5,350" in the US
	o3-mini LLM Author and Quote
	"Heine R. et al. 2024
	to derive cost-based price ranges for pembrolizumab and daratumumab, with estimated per-vial prices ranging from "\$52" to "\$885" for pembrolizumab and a comparable range fo
	daratumumab
Y	In-Context, Repetition
	3.5 Sonnet 15 Global Summaries
28	- Keytruda (pembrolizumab) generated revenue of "\$17.321 billion" in 2021, with the cost per patient reaching "\$175,000" per year
20	- Keytruda (pemoronzumab) generated revenue of \$17.521 billion in 2021, with the cost per patient reaching \$175,000 per year o3-mini LLM Author and Ouote
	"Whitacre R. et al. 2024
	Longitudinal revenue data and clinical trial timelines provided insight into how cost pressures and regulatory strategies affect pricing and patient access, as demonstrated by
	analyses of therapies such as pembrolizuma
Y	In-Context, Approximation, Repetition
	3.5 Sonnet 15 Global Summaries
29	- First-line pembrolizumab treatment increased mean per-patient costs by EUR 11,497 compared to pre-immunotherapy chemotherapy
	o3-mini LLM Author and Quote
	"Gentili N. et al. 2024
	revealing that first-line pembrolizumab increased per-patient costs by approximately "\$12,647" (converted from "C11,497") while demonstrating improved survival outcomes
Y	In-Context, Repetition
	Key Insights
	3.5 Sonnet 15 Global Summaries
30	- Bevacizumab: "\$110" per dose reduction - Trastuzumab: "\$438" per dose reduction
	o3-mini LLM Author and Quote
	"Chen H. et al. 2024
	decreases of "\$110" per dose for bevacizumab and "\$438" per dose for trastuzumab
Y	In-Context, Repetition
21	3.5 Sonnet 15 Global Summaries
31	Bevacizumab biosimilar claims had 21% higher OOP costs than the reference product
	o3-mini LLM Author and Quote
	"Feng K. et al. 2024
17	may incur higher out-of-pocket expenses compared to the reference product, whereas rituximab and trastuzumab biosimilars tend to lower cost
Y	In-Context, Approximation, Repetition
	3.5 Sonnet 15 Global Summaries
32	The financial incentive of "\$10.4" per patient per month for up to 3 months
	o3-mini LLM Author and Ouote
	"Itoshima H. et al. 2024
	even modest amounts like "\$10.4" per patient monthly, can effectively shift prescribing toward biosimilars, thereby potentially lowering overall expenditure
Y	In-Context, Repetition
	3.5 Sonnet 15 Global Summaries
33	
	o3-mini LLM Author and Quote
	"Kirshner G. et al. 2024
	Kiisinei O. et al. 2024
	with biosimilar trastuzumab averaging approximately "\$1,087" compared to higher costs for proprietary formulations
Y	

	3.5 Sonnet 15 Global Summaries
34	- Mean total one-year cost savings of "\$6,379" per patient with biosimilars
	o3-mini LLM Author and Quote
	"Lu B. et al. 2024
	as demonstrated by savings of "\$6,379" per patient in metastatic colorectal cancer when using bevacizumab biosimilars
	In-Context, Approximation, Repetition
	3.5 Sonnet 15 Global Summaries
35	- 62% reduction in non-drug consumables costs, saving "\$999" per patient annually - Total annual savings of "\$5,727" per patient when including all direct and indirect costs - The analysis demonstrates that SC administration reduces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course compared to IV administration
	o3-mini LLM Author and Quote
	"Figallo M. et al. 2024; "Otoya I. et al. 2024
	fixed-dose combination therapies and subcutaneous formulations have been shown to reduce both direct and indirect costs, with savings ranging from "\$999" in consumables to a total of "\$5,727" annually per patient and overall treatment course savings of "\$4,071.72"
Y	In-Context, Repetition
	3.5 Sonnet 15 Global Summaries
36	The authors developed and tested pricing models incorporating research & development costs, manufacturing expenses, eligible patient populations, and profit margins to estimate sustainable pricing as indications expand.
	o3-mini LLM Author and Quote
	"Heine R. et al. 2024
	The analyses underscore that factors such as patient population size, R&D, and manufacturing costs are critical in establishing sustainable pricing
Y	In-Context
	3.5 Sonnet 15 Global Summaries
37	- Keytruda (pembrolizumab) generated revenue of "\$17.321 billion" in 2021, with the cost per patient reaching "\$175,000" per year
	o3-mini LLM Author and Quote
	"Whitacre R. et al. 2024
	Concurrently, high annual revenues—as seen with pembrolizumab generating "\$17.321 billion" and incurring costs of around "\$175,000" per patient—illustrate the financial pressures that can impede patient access
Y	In-Context
	3.5 Sonnet 15 Global Summaries
38	The analysis demonstrates that while immunotherapy introduction has increased absolute treatment costs, the survival benefits help justify the additional expenditure when considering monthly cost burden. Healthcare systems must balance access to innovative therapies with sustainable resource allocation.
	o3-mini LLM Author and Quote
	"Gentili N. et al. 2024
	Although the introduction of innovative therapies such as pembrolizumab has raised per-patient treatment costs, analyses from Italy indicate that improved survival outcomes and reductions in hospitalization may help balance the monthly cost burde
Y	In-Context
	Generation B2: Financial Solutions to 15 "Global mAb Cancer Cost" Summaries
	3.5 Sonnet 15 Global Summaries
39	The financial incentive of "\$10.4" per patient per month for up to 3 months
	o3-mini LLM Author and Quote
	Itoshima H. et al. 2024
	Implement modest incentive payments—such as a "\$10.4" per patient monthly payment (up to "\$31.2" per patient)—to encourage providers to prescribe biosimilars.
Y	In-Context
	3.5 Sonnet 15 Global Summaries
40	(e.g., bevacizumab 400mg biosimilar at "\$377.3" vs reference at "\$843.4")
10	(c.g., bevacizumaa 400mg biosiminar at \$577.5 vs reference at \$645.4) o3-mini LLM Author and Quote
	Itoshima H. et al. 2024
	Increase uptake of biosimilars that are priced 40–60% lower than their reference products (for example, a bevacizumab biosimilar priced at \$377.3 versus a reference product priced
V	at "\$843.4").
Y	In-Context, In 15 Reports
	3.5 Sonnet 15 Global Summaries
A 1	- Calculated cost-based prices were significantly lower than current list prices for pembrolizumab, ranging from "\$52 to \$885" per vial compared to list prices of "\$2,861" in the
41	Netherlands and "\$5,350" in the US
	o3-mini LLM Author and Quote
	Heine R. et al. 2024
	Use cost-based pricing models that have estimated prices for products such as pembrolizumab to range from "\$52" to "\$885" per vial, contrasting with current list prices that reach levels like "\$2,861" to "\$5,350."
Y	In-Context

	3.5 Sonnet 15 Global Summaries
	- 62% reduction in non-drug consumables costs, saving "\$999" per patient annually - Total annual savings of "\$5,727" per patient when including all direct and indirect costs - The
42	analysis demonstrates that SC administration reduces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course compared to IV administration
	o3-mini LLM Author and Quote
	Figallo M. et al. 2024; Otoya I. et al. 2024
	Emphasize fixed-dose combination therapies—for instance, using a fixed-dose combination of pertuzumab–trastuzumab, which has demonstrated annual savings of "\$5,727" per
	patient—and SC administration of trastuzumab that reduces total treatment course costs by \$4,071.72.
Y	In-Context
40	3.5 Sonnet 15 Global Summaries
43	Pre-biosimilar reference product mean OOP cost: "\$911" (Feng K. et al.) Post-biosimilar mean OOP cost: "\$707" (Feng K. et al.)
	o3-mini LLM Author and Quote
	Feng K. et al. 2024
	Adjust policies so that when biosimilar entry reduces mean out-of-pocket costs from "\$911" to "\$707," the savings are reflected in reduced patient expenditures
Y	In-Context
	3.5 Sonnet 15 Global Summaries
44	for example, by ensuring that biosimilar trastuzumab, which averages a treatment cost of "\$1,087," can compete effectively against higher-priced subcutaneous and IV formulations
	o3-mini LLM Author and Quote
	Kirshner G. et al. 2024
	for example, by ensuring that biosimilar trastuzumab, which averages a treatment cost of "\$1,087," can compete effectively against higher-priced subcutaneous and IV formulations
Y	In-Context
	3.5 Sonnet 15 Global Summaries
45	- Mean total one-year cost savings of "\$6,379" per patient with biosimilars
	o3-mini LLM Author and Quote
	Lu B. et al. 2024
	Use findings such as per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer to guide policy and reimbursement decisions
Y	In-Context
	3.5 Sonnet 15 Global Summaries
46	- could reduce carbon emissions by 21-26% for pembrolizumab
	o3-mini LLM Author and Quote
	Malmberg R. et al. 2024
	as evidenced by reductions of up to 21–26% in emissions for pembrolizumab
Y	In-Context, In 15 Reports
	Generation B3: Table of Solutions to 15 "Global mAb Cancer Cost" Summaries
	3.5 Sonnet 15 Global Summaries
47	- The financial incentive of "\$10.4" per patient per month for up to 3 months -Biosimilar versions were priced 40-60% lower than reference products -(e.g., bevacizumab 400mg
4/	biosimilar at "\$377.3" vs reference at "\$843.4")
	o3-mini LLM Author and Quote
	Itoshima H. et al. 2024 Incentive payment of "\$10.4" per patient monthly (up to "\$31.2" per patient); biosimilars offered at 40–60% lower prices (e.g., a bevacizumab biosimilar priced at "\$377.3" versus a
	reference product priced at "\$843.4").
Y	In-Context, In 15 Reports
	3.5 Sonnet 15 Global Summaries
	- Calculated cost-based prices were significantly lower than current list prices for pembrolizumab, ranging from "\$52 to \$885" per vial compared to list prices of "\$2,861" in the
48	Netherlands and "\$5,350" in the US
	o3-mini LLM Author and Quote
	Heine R. et al. 2024
	Cost-based pricing estimates for pembrolizumab range from "\$52" to "\$885" per vial compared to current list prices ranging from "\$2,861" to "\$5,350."
Y	In-Context, In 15 Reports
	3.5 Sonnet 15 Global Summaries
	- 62% reduction in non-drug consumables costs, saving "\$999" per patient annually - Total annual savings of "\$5,727" per patient when including all direct and indirect costs - The
49	analysis demonstrates that SC administration reduces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course compared to IV administration
	o3-mini LLM Author and Quote
	Figallo M. et al. 2024; Otoya I. et al. 2024
	Fixed-dose combination pertuzumab-trastuzumab results in annual savings of "\$5,727" per patient; SC administration of trastuzumab reduces the total treatment course cost by
	"\$4,071.72."
Y	In-Context

3.5 Sonnet 15 Global Summaries e-biosimilar reference product mean OOP cost: "\$911" (Feng K. et al.) Post-biosimilar mean OOP cost: "\$707" (Feng K. et al.) o3-mini LLM Author and Quote gK. et al. 2024 can out-of-pocket costs reduced from "\$911" to "\$707" after biosimilar entry Context an out-of-pocket costs reduced from "\$911" to "\$707" after biosimilar entry Context an out-of-pocket costs reduced from "\$911" to "\$707" after biosimilar entry Context an costs were "€1,718.27" for IV Herceptin®, "€1,620.66" for subcutaneous Herceptin®, and "€987.97" for biosimilars o3-mini LLM Author and Quote rshner G. et al. 2024 ostimilar trastuzumab averages a treatment cost of "\$1,087" compared to higher prices for alternative subcutaneous and IV formulations. Context, Note: 1.1 USD to EUR dean total one-year cost savings of "\$6,379" per patient with biosimilars o3-mini LLM Author and Quote B. et al. 2024 served per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer. Context
o3-mini LLM Author and Quote ng K. et al. 2024 context Sonnet 15 Global Summaries context (% 1,718.27" for IV Herceptin®, % 1,620.66" for subcutaneous Herceptin®, and "€987.97" for biosimilars o3-mini LLM Author and Quote Sonnet 15 Global Summaries o3-mini LLM Author and Quote Sonnet 15 Global Summaries Context, Note: 1.1 USD to EUR Sonnet 15 Global Summaries Author and Quote Sonnet 15 Global Summaries Author and Quote B. et al. 2024 Sonnet 12 Global Summaries B. et al. 2024 served per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer.
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3.5 Sonnet 15 Global Summaries Mean total one-year cost savings of "\$6,379" per patient with biosimilars 03-mini LLM Author and Quote B. et al. 2024 served per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer.
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B. et al. 2024 served per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer.
served per-patient savings of "\$6,379" with bevacizumab biosimilars in metastatic colorectal cancer.
Context
3.5 Sonnet 15 Global Summaries
ould reduce carbon emissions by 21-26% for pembrolizumab
o3-mini LLM Author and Quote
almberg R. et al. 2024
ternative dosing strategies for pembrolizumab can lead to emission reductions of 21–26%, indirectly reducing drug usage and associated costs.
Context
Generation B4: Table of Forecasts to 15 "Global mAb Cancer Cost" Summaries
3.5 Sonnet 15 Global Summaries
g., bevacizumab 400mg biosimilar at "\$377.3" vs reference at "\$843.4")
o3-mini LLM Author and Quote
shima H. et al. 2024
377.3" per dose (biosimilar price)
Context
3.5 Sonnet 15 Global Summaries
alculated cost-based prices were significantly lower than current list prices for pembrolizumab, ranging from "\$52 to \$885" per vial
o3-mini LLM Author and Quote
ine R. et al. 2024
52" to "\$885" per vial (cost-based forecast)
Context
3.5 Sonnet 15 Global Summaries
otal annual savings of "\$5,727" per patient when including all direct and indirect costs
o3-mini LLM Author and Quote
gallo M. et al. 2024
nual savings of "\$5,727" per patient
Context
3.5 Sonnet 15 Global Summaries
luces total treatment costs by approximately \$4,071.72 over a full 18-cycle treatment course
o3-mini LLM Author and Quote
oya I. et al. 2024
duction of "\$4,071.72" per treatment course
Context
3.5 Sonnet 15 Global Summaries
st-biosimilar mean OOP cost: "\$707" (Feng K. et al.)
o3-mini LLM Author and Quote
ng K. et al. 2024
707" per claim
Context
Generation of the standard sta

	3.5 Sonnet 15 Global Summaries
59	Mean costs were "€1,718.27" for IV Herceptin®, "€1,620.66" for subcutaneous Herceptin®, and "€987.97" for biosimilars
	o3-mini LLM Author and Quote
	Kirshner G. et al. 2024
	Biosimilar trastuzumab at "\$1,087" per treatment
Y	In-Context, Note: 1.1 USD to EUR
	3.5 Sonnet 15 Global Summaries
60	- Mean total one-year cost savings of "\$6,379" per patient with biosimilars
	o3-mini LLM Author and Quote
	Lu B. et al. 2024
	Savings of "\$6,379" per patient annually
Y	In-Context
	3.5 Sonnet 15 Global Summaries
61	could reduce carbon emissions by 21-26% for pembrolizumab
	o3-mini LLM Author and Quote
	Malmberg R. et al. 2024
	21-26% reduction in emissions (indirect cost proxy)
Y	In-Context