

THE BUDGET IMPACT OF TUMOR TREATING FIELDS PLUS GEMCITABINE AND NAB-PACLITAXEL FOR FRONT-LINE TREATMENT OF LOCALLY ADVANCED PANCREATIC CANCER

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Background

- Locally advanced pancreatic cancer (LAPC) has poor survival, high symptom burden, and limited treatment innovation.¹⁻³
- The PANOVA-3 trial showed that adding Tumor Treating Fields (TTFields) to gemcitabine plus nab-paclitaxel (Gem-NPac) improved overall, distal progression-free, and pain-free survival.⁴

Objective

To estimate the 5-year budget impact of adopting Tumor Treating Fields (TTFields) therapy in combination with gemcitabine plus nab-paclitaxel (GnP) for first-line treatment of locally advanced pancreatic cancer (LAPC) from the perspective of a US commercial health plan.

Methods

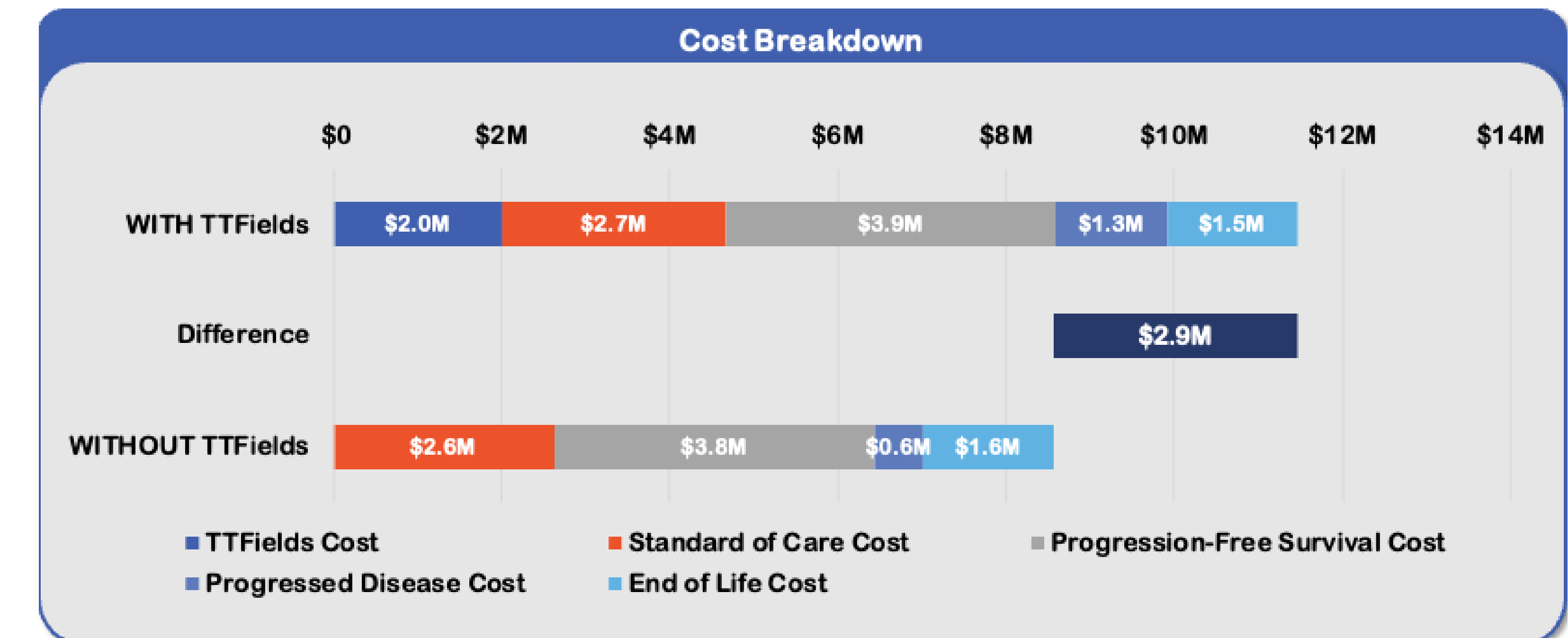
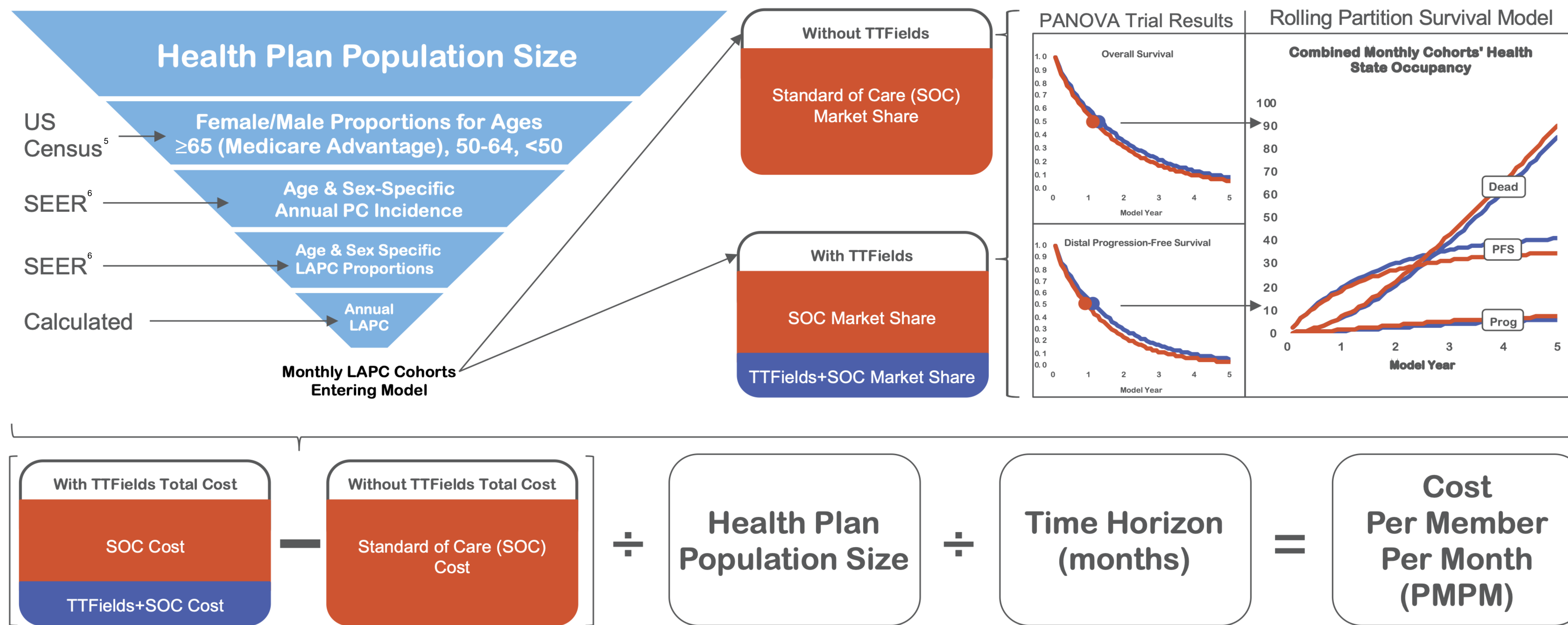
- A 1-million-member health plan was modeled using a rolling-cohort budget impact framework over a 5-year time horizon.
- Monthly incident LAPC cohorts entered the model and accumulated costs until progression or death.
- Survival was based on exponential OS and distal PFS curves fit to PANOVA-3 trial medians (OS: 16.2 vs 14.2 months; dPFS: 13.9 vs 11.5 months for TTFields+GnP vs GnP alone).⁴
- TTFields market share ramped from 5% (Year 1) to 25% (Year 5).
- Costs included TTFields device (\$16,063/month, 6.35 months average), chemotherapy, progression-free care, progressed-disease care, and end-of-life care.
- One-way deterministic sensitivity analysis was performed on key model inputs.

Results

- The health plan was projected to have 132 newly diagnosed LAPC patients over 5 years, with total costs of \$8.57M in the Without TTFields scenario.
- With TTFields available, 20 patients received TTFields+GnP at a cost of \$4.32M, while GnP-only costs declined to \$7.14M, yielding total 5-year spending of \$11.46M.
- The incremental cost per member per month was \$0.0482.**
- Incremental costs were primarily driven by TTFields device expenditures (\$2.02M), accounting for 70% of the \$2.9M increase.
- Smaller cost increases in GnP chemotherapy and progression-free care reflected longer survival and additional time on treatment.
- These increases were partially offset by reductions in progressed-disease (-\$0.76M) and end-of-life (-\$0.01M) costs owing to delayed progression in the TTFields arm.

Total Cost Difference	Cost per Member per Month	Cost per Member per Quarter	Cost per Member per Year
\$2,889,524	\$0.0482	\$0.1445	\$0.5779

Model Schematic



Parameter	Low Value	High Value	Low Result	High Result	Spread
Median Distal PFS, TTFields + Standard of Care	12.2 months	16.8 months	\$0.059	\$0.035	\$0.024
Median Overall Survival, TTFields + Standard of Care	15.0 months	18.0 months	\$0.041	\$0.059	\$0.017
TTFields Treatment Duration	4.8 months	7.9 months	\$0.040	\$0.057	\$0.017
TTFields Cost/Month	\$12,048	\$20,079	\$0.040	\$0.057	\$0.017
Health Plan Proportion Age ≥65	13%	22%	\$0.042	\$0.054	\$0.013
Health Plan Proportion Age 50-64	14%	23%	\$0.042	\$0.054	\$0.012
Health Plan Proportion with Medicare Advantage	23%	38%	\$0.044	\$0.053	\$0.009
TTFields Market Share, Year 5	19%	31%	\$0.044	\$0.053	\$0.009
Prog. Supp. Care Cost/Month	\$19,382	\$32,304	\$0.045	\$0.052	\$0.007
Age 50-64 Pancreatic Cancer Incidence/100k, Males	18	29	\$0.045	\$0.052	\$0.007
Age 50-64 Locally Advanced, Unresectable, Females	21%	35%	\$0.045	\$0.052	\$0.007

Conclusions

- TTFields adoption increases payer spending due to device costs but reduces high-cost progressed-disease and end-of-life care.
- Overall PMPM impact is \$0.048**, small relative to a typical health plan budget, supporting the financial feasibility of TTFields adoption for LAPC.
- TTFields+GnP provided clinically meaningful gains in OS and distal PFS; incremental costs are associated with real clinical benefit.
- The model is most sensitive to survival inputs and TTFields pricing; value-based or outcomes-linked pricing could further improve affordability.

Model Parameters

TTFields Market Share Trajectory	Base Case Value	Source	TTFields Costs	Base Case Value	Source	Median Overall Survival	Base Case Value	Source
Market Share, Year 1	5%	Assumption	TTFields Cost/Month	\$16,063		TTFields + Standard of Care	16.2 months	PANOVA-3 ⁴
Market Share, Year 2	10%	Assumption	TTFields Treatment Duration (months)	6.35	PANOVA-3 ⁴	Standard of Care Alone	14.2 months	PANOVA-3 ⁴
Market Share, Year 3	15%	Assumption	Standard of Care (GnP) Costs	Base Case Value	Source			
Market Share, Year 4	20%	Assumption	Gemcitabine Cost/mg	\$0.07	NAV/LIN ⁸			
Market Share, Year 5	25%	Assumption	Nab-Paclitaxel Cost/mg	\$5.03	NAV/LIN ⁸			
			Supportive Care Costs	Base Case Value	Source			
Population Parameters	Base Case Value	Source	Progression-Free Supportive Care Cost/Month	\$2,425	Kharat et al. ⁹ Kim et al. ¹⁰	Median Distal Progression-Free Survival	Base Case Value	Source
Health Plan Population Size	1,000,000	User-Defined	Progressed Disease Supportive Care Cost/Month	\$25,843	Kharat et al. ⁹ Chang et al. ¹¹	TTFields + Standard of Care	13.9 months	PANOVA-3 ⁴
Proportion Age ≥65	17.7%	US Census ⁵	End-of-Life Cost	\$17,185	Kharat et al. ⁹ Scitovsky et al. ¹²	Standard of Care Alone	11.5 months	PANOVA-3 ⁴
Proportion with Medicare Advantage	30.0%	Kaiser Family Foundation ⁷						
Proportion Age 50-64	18.7%	US Census ⁵						
Proportion Age 20-50	39.3%	US Census ⁵						

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