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Benefit of prompt versus delayed initiation of single-inhaler triple therapy on exacerbations and healthcare costs among patients with chronic obstructive pulmonary disease in the US

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Recording by Michael Bogart

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DISCLOSURES

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- On behalf of all authors, and with their permission, these slides are presented by Michael Bogart, who did not receive any payment for this recording.
- The authors declare the following real or perceived conflicts of interest in relation to this presentation:
  - MB, SPH, ASI: employee of and/or holds stocks/shares in GSK
  - GG, YJ, FL, SDM, MSD: current employee of Analysis Group, a consulting company that has received research funds from GSK
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Background and objectives

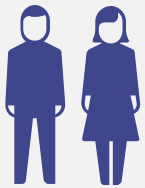
- Triple therapy (inhaled corticosteroid, long-acting β2 agonist, and long-acting muscarinic antagonist) is recommended for symptomatic COPD patients at risk of exacerbation
- The optimal timing of initiation remains unclear. Single-inhaler fluticasone furoate, umeclidinium, and vilanterol (FF/UMEC/VI) was approved for the long-term maintenance of COPD in September 2017
- This study evaluated the impact of prompt versus delayed initiation of FF/UMEC/VI following a COPD-related exacerbation on the rates of subsequent exacerbations and healthcare costs

Methods

Study

Retrospective | Cohort | Real World

Patients



- Moderate/severe COPD exacerbation on or after September 18, 2017 *(index date)*
- Initiation of FF/UMEC/VI within 180 days of exacerbation
- Continuous enrollment for ≥12 months pre-index *(baseline)* and ≥6 months post-index
- ≥40 years of age
- Patients with prior exacerbation during baseline were excluded

Study Cohorts

Prompt	Delayed
FF/UMEC/VI within 30 days of exacerbation	FF/UMEC/VI 31–180 days after exacerbation

Fluticasone furoate 100 mcg
Umeclidinium 62.5 mcg
Vilanterol 25 mcg

Methods

Data Source: IQVIA Real-World Claims

Baseline Period: 1 year prior to the index date

Follow-up Period: Spanned from the index date to the end of continuous enrollment or end of data (September 30, 2019)

Cohorts were balanced using inverse probability treatment weighting (IPTW)

Outcomes of Interest

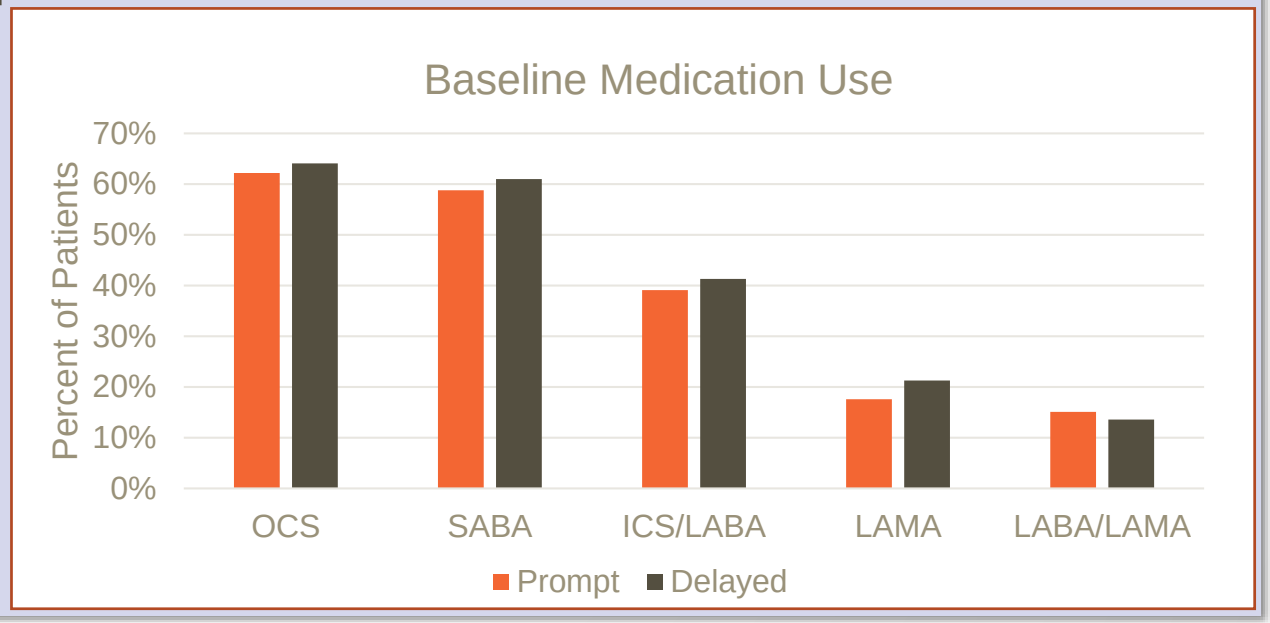
- Severe COPD exacerbation
- Moderate COPD exacerbation
- Healthcare costs
- Hospital readmission *(among patients with severe exacerbation at index)*

STUDY POPULATION

- A total of 1,904 patients (prompt: 529; delayed: 1,375) met the selection criteria

Baseline characteristics

- After IPTW, baseline characteristics were balanced between cohorts
- Mean age was similar (prompt: 59.8 years; delayed: 59.9 years), along with the proportion of females (prompt: 52.4%; delayed: 50.1%)
- The index exacerbation type was similar between cohorts
  - Moderate exacerbation (prompt: 83.6%; delayed: 82.2%)
  - Severe exacerbation (prompt: 16.4%; delayed: 17.8%)
- Medication use was similar between cohorts



ICS, inhaled corticosteroid; IPTW, inverse probability of treatment weighting; LABA, long-acting beta agonist; LAMA, long-acting muscarinic antagonist; OCS, oral corticosteroid; SABA, short-acting beta agonist

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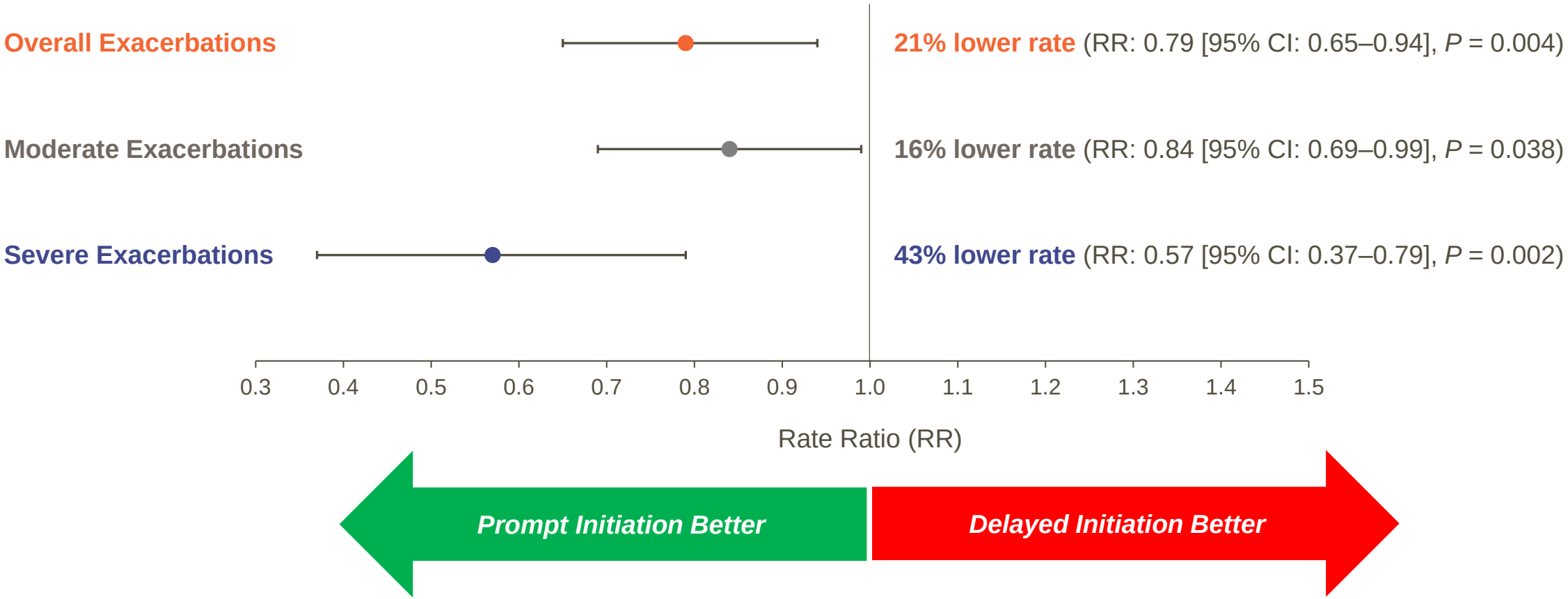
Prompt initiators had significantly lower rates of exacerbation



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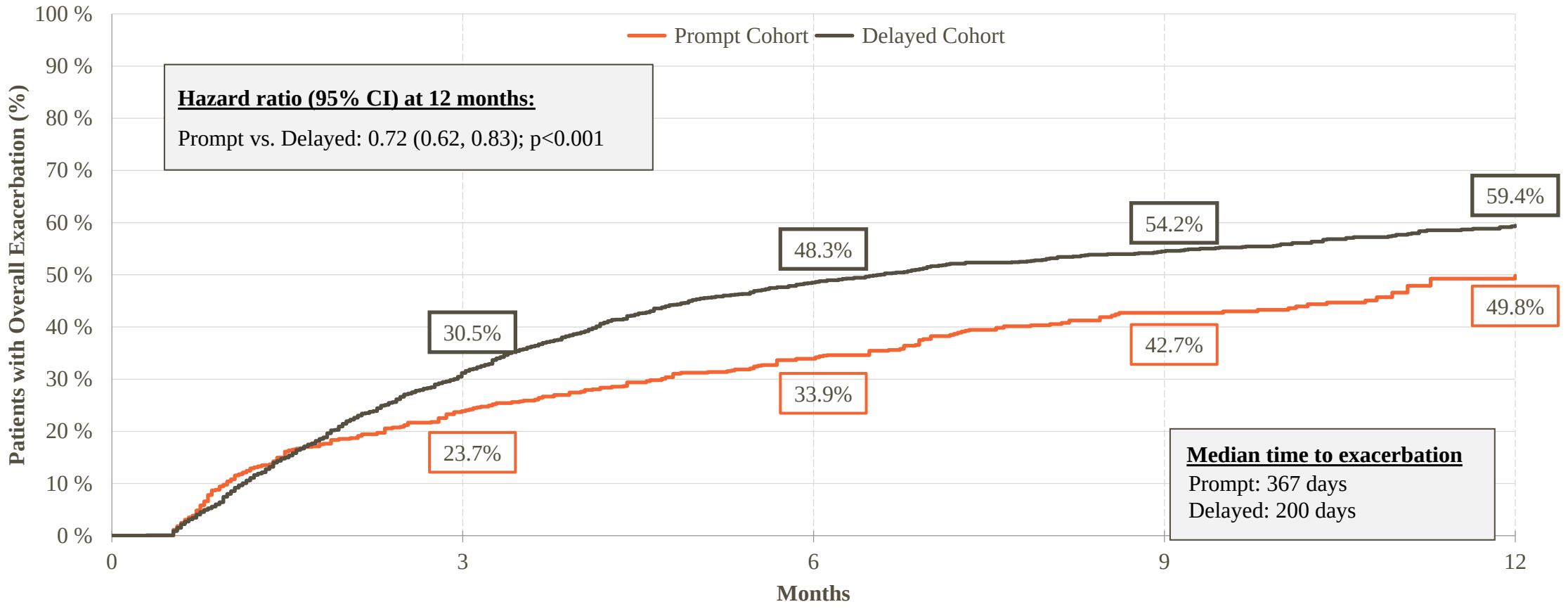
Prompt initiators had significantly longer time to first exacerbation



[a]*Prompt: initiation of FF/UMEC/VI within 30 days of the index date;* [b]*Delayed: initiation of FF/UMEC/VI within 31-180 days of the index date*

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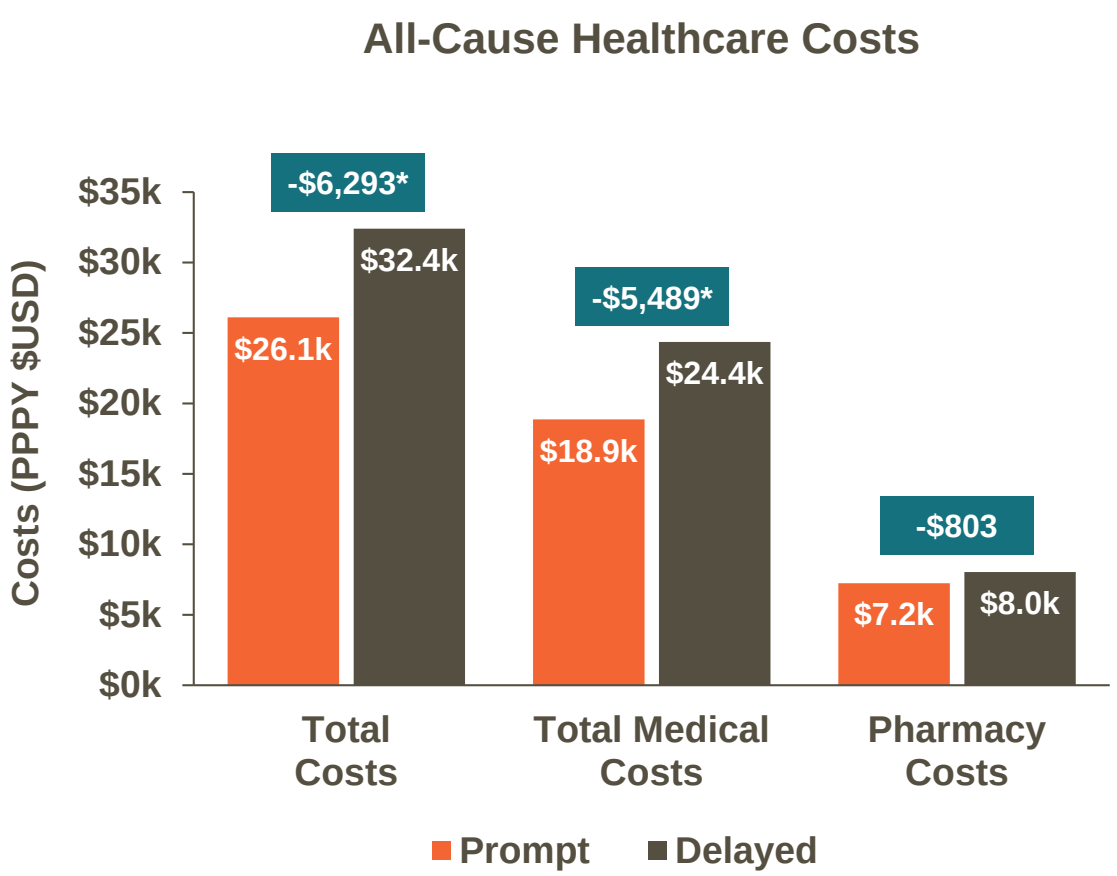
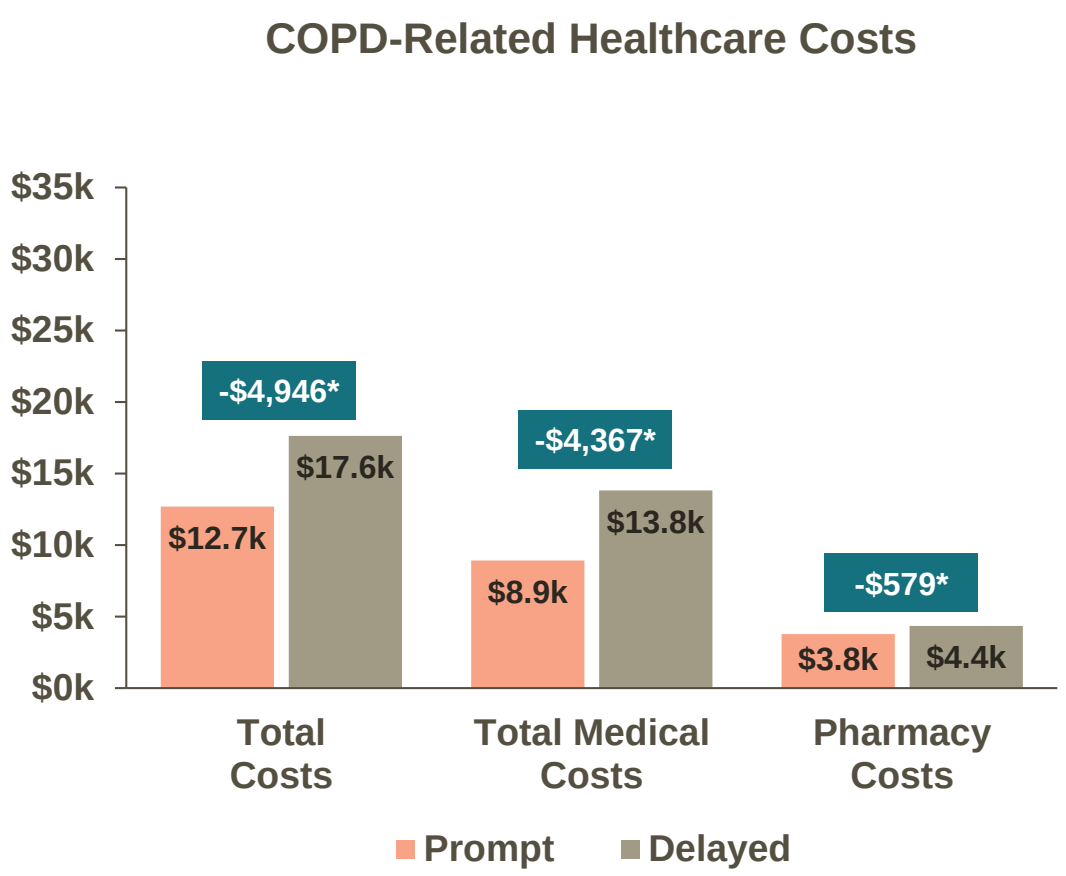
Prompt initiators had significantly lower costs





** P < 0.05*

Notes: PPPY, per patient per year. Total medical costs include hospitalization, outpatient visit, and ER visit costs. Cost differences for prompt versus delayed initiation are shown in teal boxes.

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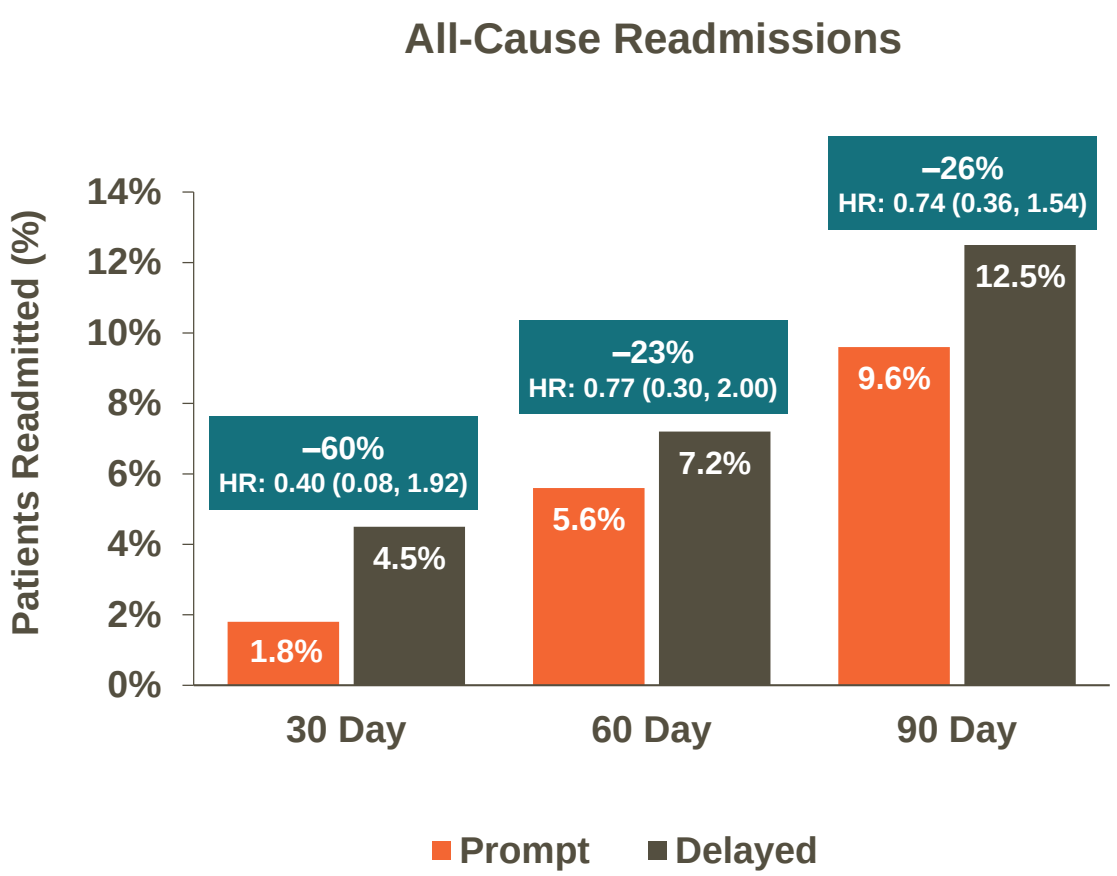
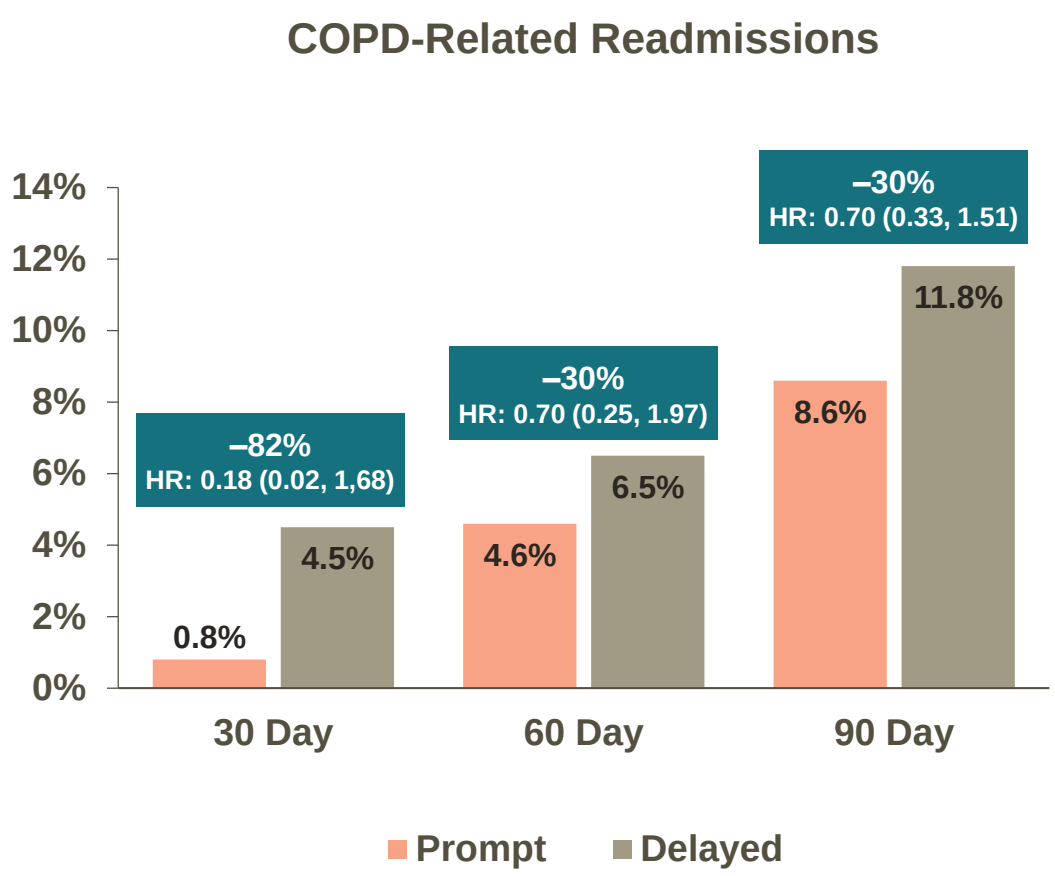
Prompt initiators trended toward lower readmission





Notes: Evaluated among patients with severe exacerbation at index (Prompt: 99; Delayed: 239). All comparisons were non-significant due to small sample size

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Conclusions

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Compared with the delayed cohort, prompt initiation of FF/UMEC/VI resulted in:

- A significant reduction in annual rate of exacerbation
  - 21% reduction in overall exacerbations (P = 0.004)
  - 16% reduction in moderate exacerbations (P = 0.038)
  - 43% reduction in severe exacerbations (P = 0.002)
- A longer median time to first exacerbation
  - Overall (367 days vs. 200 days); moderate (435 days vs. 292 days)
- Significantly lower total and medical healthcare costs
  - All-cause total costs reduced by $6,293 (P < 0.05)
  - COPD-related total costs reduced by $4,946 (P < 0.05)
- Numerically lower rates of 30-, 60- and 90-day readmissions
  - All-cause readmissions reduced by 22% – 60%
  - COPD-related readmissions reduced by 27% – 82%

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