Results from a Radical Makeover of a Care Coordination Program Show How Program Design Affects Success in Reducing Hospitalizations and Costs:

Evidence from a Randomized Controlled Trial Before and After Key Changes in Program Design

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Research Question

Does a care coordination model using more individualized and in-person care, transitional care after hospitalizations, and medication management outperform a model provided largely by telephone?

I. Study Design

- **Natural experiment built onto a randomized trial**
- **Medicare Coordinated Care Demonstration**
  - **15 programs nationwide**
  - **Operated by Washington University from 8/02 to 8/08**
- **Measure program impacts before and after major change in intervention**
  - **Largely telephonic provision of disease management (8/02-2/06, n=2,144)**
  - **Local model (3/06-8/08, n=2,166)**
  - **88% of beneficiaries included in analysis of outcomes after makeover enrolled before the makeover**
- **Medicare Part A and B claims measure hospitalizations and costs, with and without care coordination fees**

II. Study Sample

- **Chronically-ill Medicare beneficiaries in FFS who saw Washington University physicians**
- **Disease management firm (StatusOne) used proprietary algorithm to further select patients, approximated as:**
  - **Claims for 2 or more of 6 conditions: diabetes, CHF, COPD, asthma, neoplasms, or renal disease, or**
  - **2 or more hospitalizations in prior year, or**
  - **2 or more ER visits in the prior year AND 1 or more of the 6 conditions**

Enrollees sicker than average beneficiaries

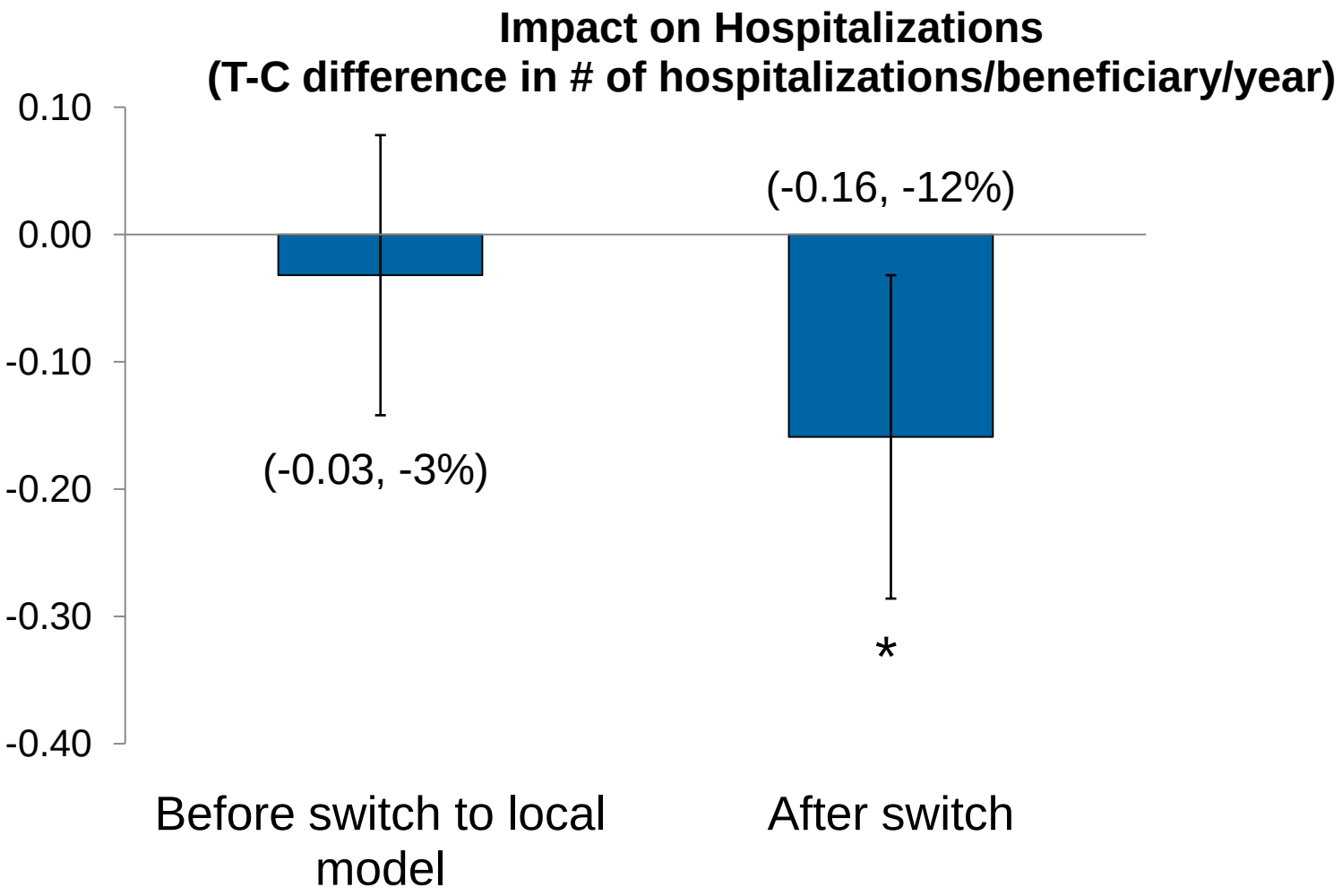
Patient Characteristic (% unless otherwise noted)	Washington University Enrollees	Medicare Population
Congestive heart failure	46	15
Coronary artery disease	63	30
Chronic obstructive pulmonary disease	25	10
Diabetes	41	21
Black	38	9
Dually eligible	20	18
< 65 years old	27	14
85+ years old	10	12
Mean monthly Medicare costs in prior year	$2,498	$552
Mean number of annualized hospitalizations in prior year	1.8	0.3

III. Key Changes in Intervention

Category	Telephonic model	Local model
Patient and provider contacts	By phone for 80% of beneficiaries	In-person and phone contacts for all enrollees Scheduled and tracked follow-up visits
Patient assessments	Mostly by phone, overly standardized	More in depth and tailored; more accurate acuity determinations
Use of clinical evidence	Extensive guidelines but limited use	Short and more usable guidelines incorporated into care plans
Transitional care	Limited: Calls to patient in hospital and within 2 weeks of stay	Stronger: In-person visits with patient and provider in the hospital; follow-up call within 48 hours of discharge
Medication management	Encouraged patients to develop medication list	Care coordinators maintained and updated list; shared list with patients and treating physicians; resolved polypharmacy
Psycho-social needs	Light attention	Coordinated referrals to community services

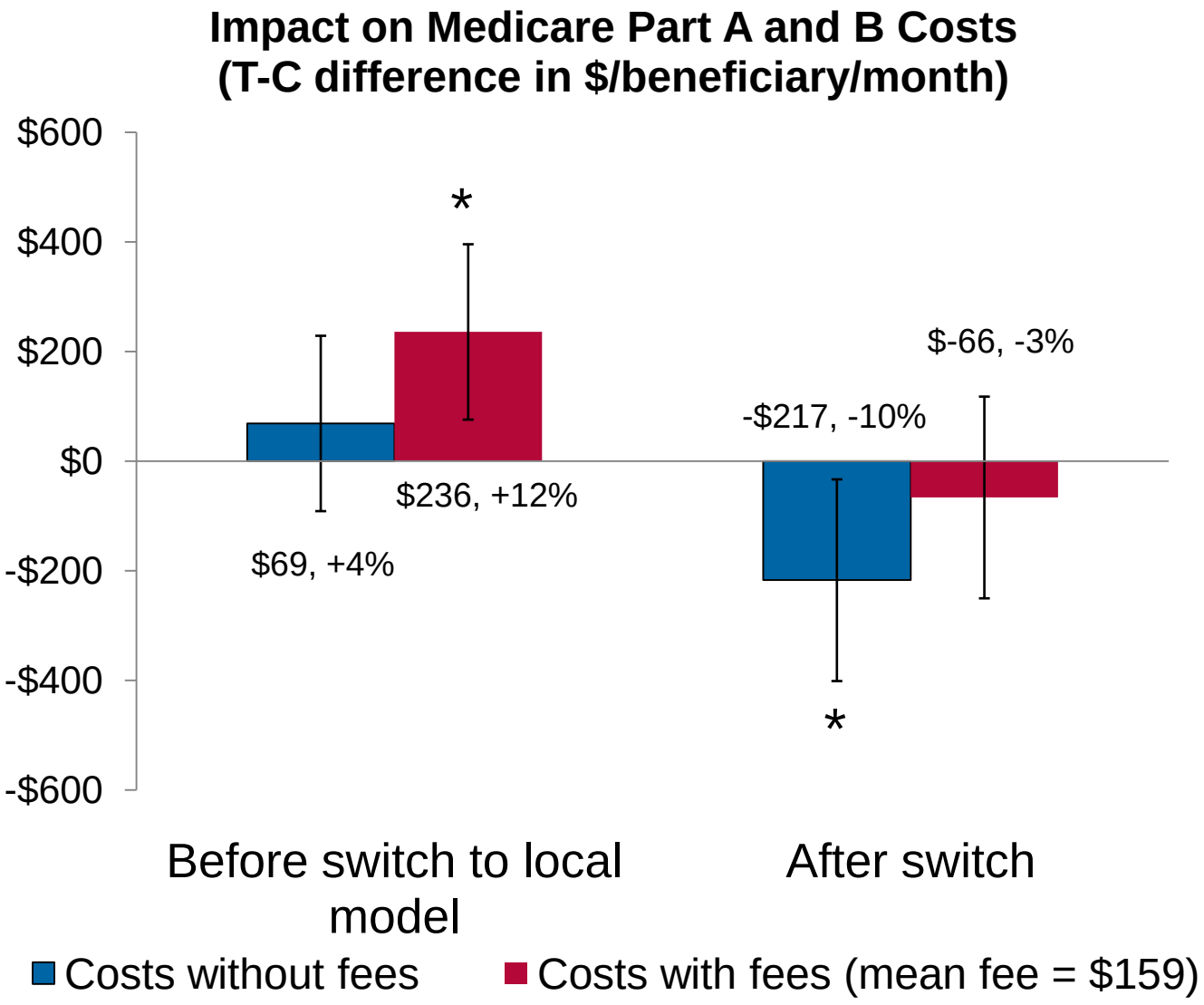
- **Local model was more extensive, personal, and tailored**

IV. Findings: Large impacts, but only after makeover



* p <=0.05. Error bars = 90% confidence intervals.

Telephonic model increased net costs; local model was cost neutral



10% savings for higher-risk subgroup with local model

- 58% of enrollees had 2+ hospitalizations in the 2 years before enrollment
- This group was at significantly higher risk of future hospitalizations
  - Annualized hospitalization rate among control group members in the follow-up period = 1.90 hospitalizations per beneficiary
  - 0.60 for the other 42% of enrollees
- Among this high-risk group, the local model
  - Decreased hospitalizations by 0.33/beneficiary/year (17%)
  - Decreased costs without fees by $435/beneficiary/month (15%)
  - Including fee, produced net savings of $286/beneficiary/month (10%)
  - 90% CI for net savings is wide: [-$567 to -$4]

Testing an alternative explanation for results

- **Before the switch, average length of enrollment in the program was 27 months→ increased to 40 months after the switch**
- **Potential alternative explanation for larger impacts after makeover**
  - **Longer enrollment, not changes in program design, caused larger impacts**
- **To test this alternative, we examined impacts separately for a beneficiary's 1st, 2nd, and 3rd year of follow-up in the period before the switch**
  - **If length of enrollment drove results, expect to see larger impacts in later years of follow-up**

Length of enrollment does not drive results

Year of follow-up	T-C difference in # of hospitalizations/beneficiary/year (p-value)
1st	0.06 (0.45)
2nd	-0.10 (0.31)
3rd	0.06 (0.61)

- **In the pre-switch period, program impacts did not get larger for later years of enrollment**

V. Conclusions and Implications

- **Care coordination was successful after major design changes**
- **What changes likely mattered most?**
  - **In-person contacts with patients and physicians**
  - **Stronger transitional care**
  - **Stronger medication management**
- **Extremely promising for improving care and reducing Medicare FFS costs at other urban medical centers**
- **Medicare Chronic Care Research Network is developing protocols based on this and other evidence-based interventions to test replicability in other settings**

For more information

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