Evaluation of an Intervention to Reduce Low-Value Preoperative Testing for Patients Undergoing Cataract Surgery in a Safety Net Health System

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Low-value care from a real patient's view: An example of the iatrogenic cascade

- Jim: 59 yo M w/mild asthma and painful abdominal hernia at pre-op clinic for surgery
- At visit unnecessary pre-op CXR ordered →lung nodule → surgery delayed, CT scan ordered
- CT reveals incidental adrenal mass → surgery further delayed
- Adrenal CT ordered → adrenal CT shows benign mass
- All this time, Jim lived in pain for 6 additional months
  - Anxious about test results
  - Received unnecessary dye load and radiation
  - Scans cost more than double the surgery itself!

Niess MA, Prochazka A. *JAMA Intern Med.* 2014;174(1):12.

Low-value care

- Low-value care = *patient care that provides no average benefit in specific clinical scenarios*

- Can harm patients both physically and financially

  - Cancer-causing radiation exposure from diagnostic imaging

  - Chasing false positives, complications, stress

  - Co-payments and high deductibles for tests and services

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DATAWATCH

Low-Cost, High-Volume Health Services Contribute The Most To Unnecessary Health Spending

An analysis of data for 2014 about forty-four low-value health services in the Virginia All Payer Claims Database revealed more than $586 million in unnecessary costs. Among these low-value services, those that were low and very low cost ($538 or less per service) were delivered far more frequently than services that were high and very high cost ($539 or more). The combined costs of the former group were nearly twice those of the latter (65 percent versus 35 percent).

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Tackling Low-Value Care: A New "Top Five" for Purchaser Action

"Fruit below the ground"
--Mark Fendrick

Jason D. Buxbaum, John N. Mafi, A. Mark Fendrick

NOVEMBER 21, 2017

10.1377/hblog20171117.664355

Reducing pre-operative testing for cataract surgery patients

- Routine pre-op testing for cataract surgery epitomizes low value care and occurs at high rates

- Even at DHS, a fiscally capitated system, low-value pre-op care for cataract surgery occurs frequently

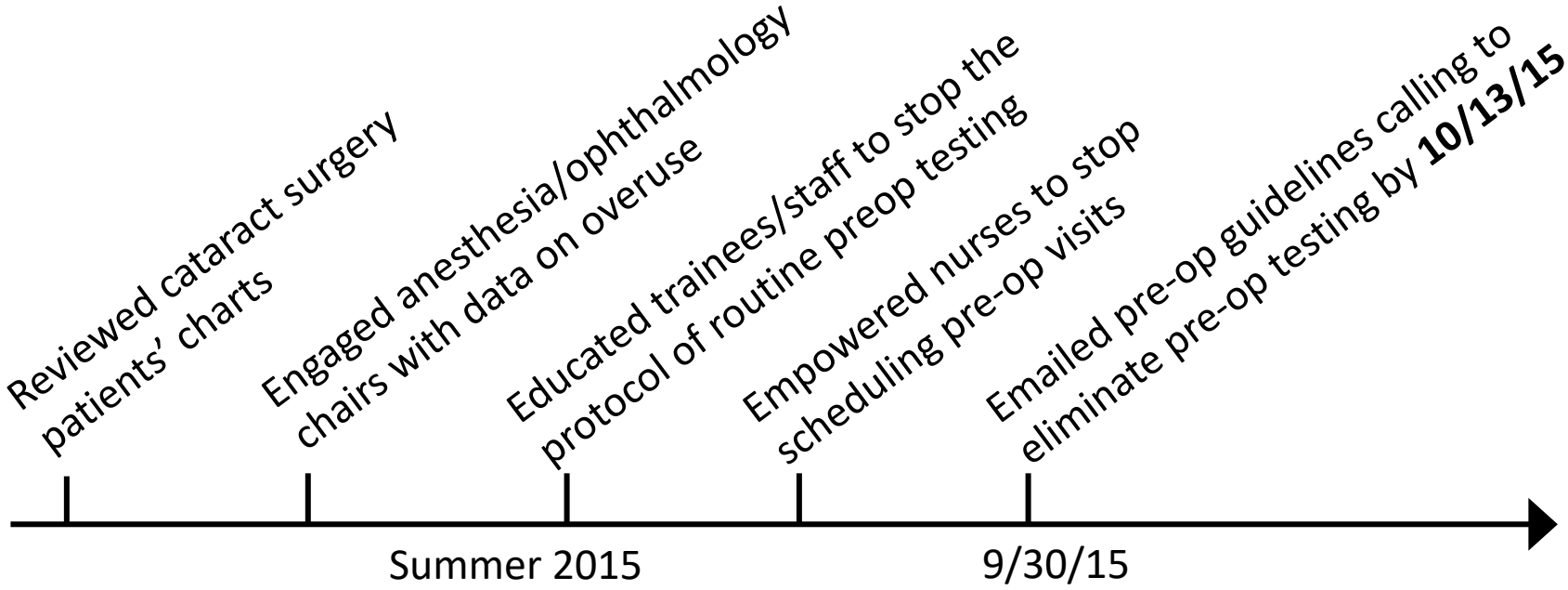
- Routine pre-operative testing leads to inefficient utilization in a safety net system with scarce resources and adverse downstream consequences (e.g., Jim)

PURPOSE

We evaluated a multidisciplinary quality improvement (QI) initiative at DHS to reduce low value pre-op care for cataract surgery patients

Methods: QI Intervention and Study Population

- QI Intervention: LAC+USC quality officer → IHI training → reviewed Choosing Wisely® recs → plan-do-study-act (PDSAs)



- Patients undergoing cataract surgery at two urban academic medical centers within a large safety net health system, between 10/15/14-4/15/16, plus 1 year extra through 4/13/17

Measures and Statistical Analysis

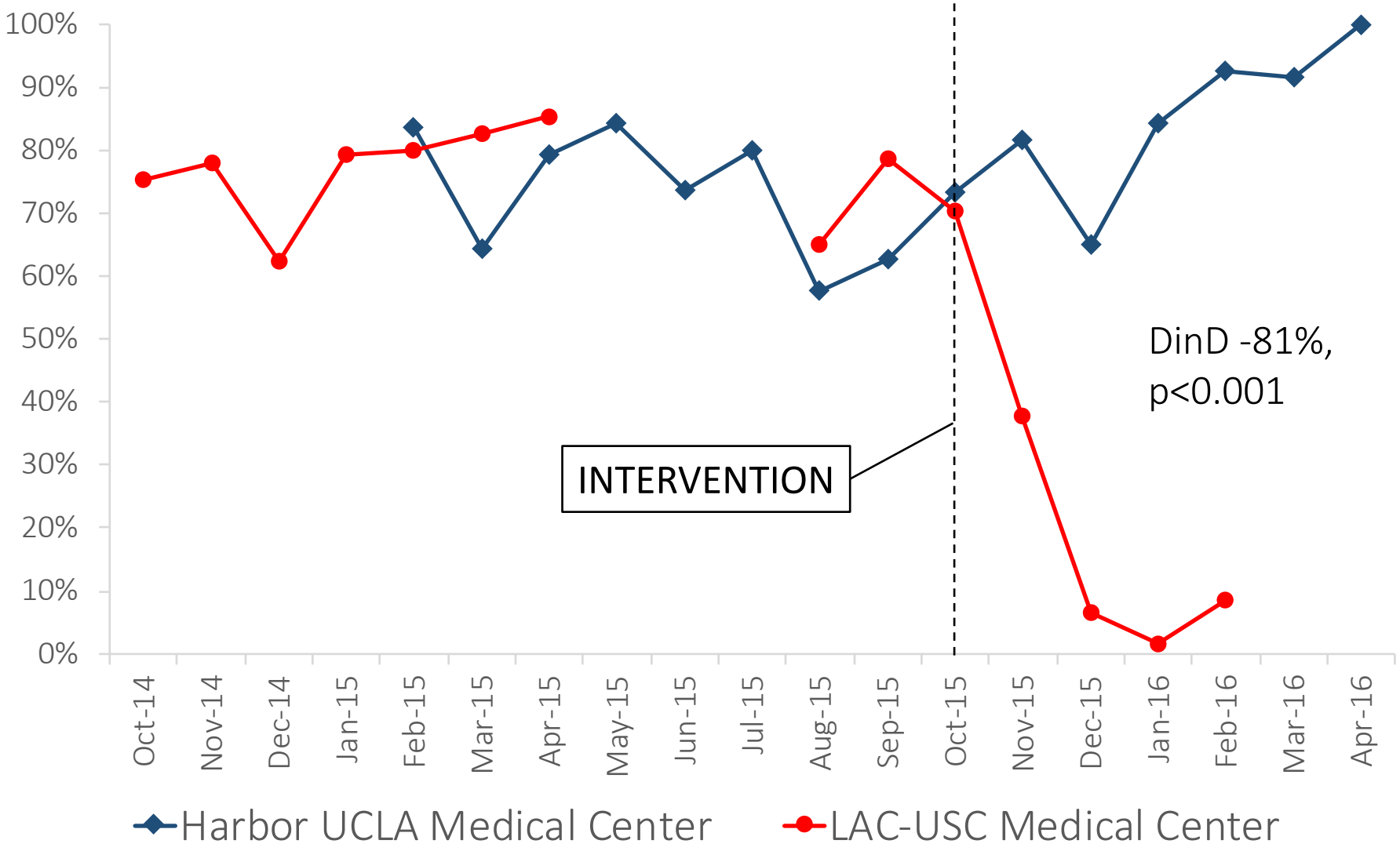
- Measures included pre-op visits, labs, EKGs, adverse post-operative events, staffing utilization, and total costs
- Pre-post difference-in-differences (DinD) analysis comparing amount of pre-op cataract care at LAC+USC (intervention site) vs. Harbor-UCLA (control)
- Cost analysis from perspective of DHS health system (capitated), fee-for-service health system, and society
- Logistic regression models adjusted for age, sex, ethnicity, Charlson comorbidity score, time, and site

Results

- We identified 1,009 intervention and 959 control patients undergoing cataract surgery during the study period

- Mean age ~61 years old, ~53% female at both sites

Percent of Cataract Patients with Pre-Operative Medical Visits at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)



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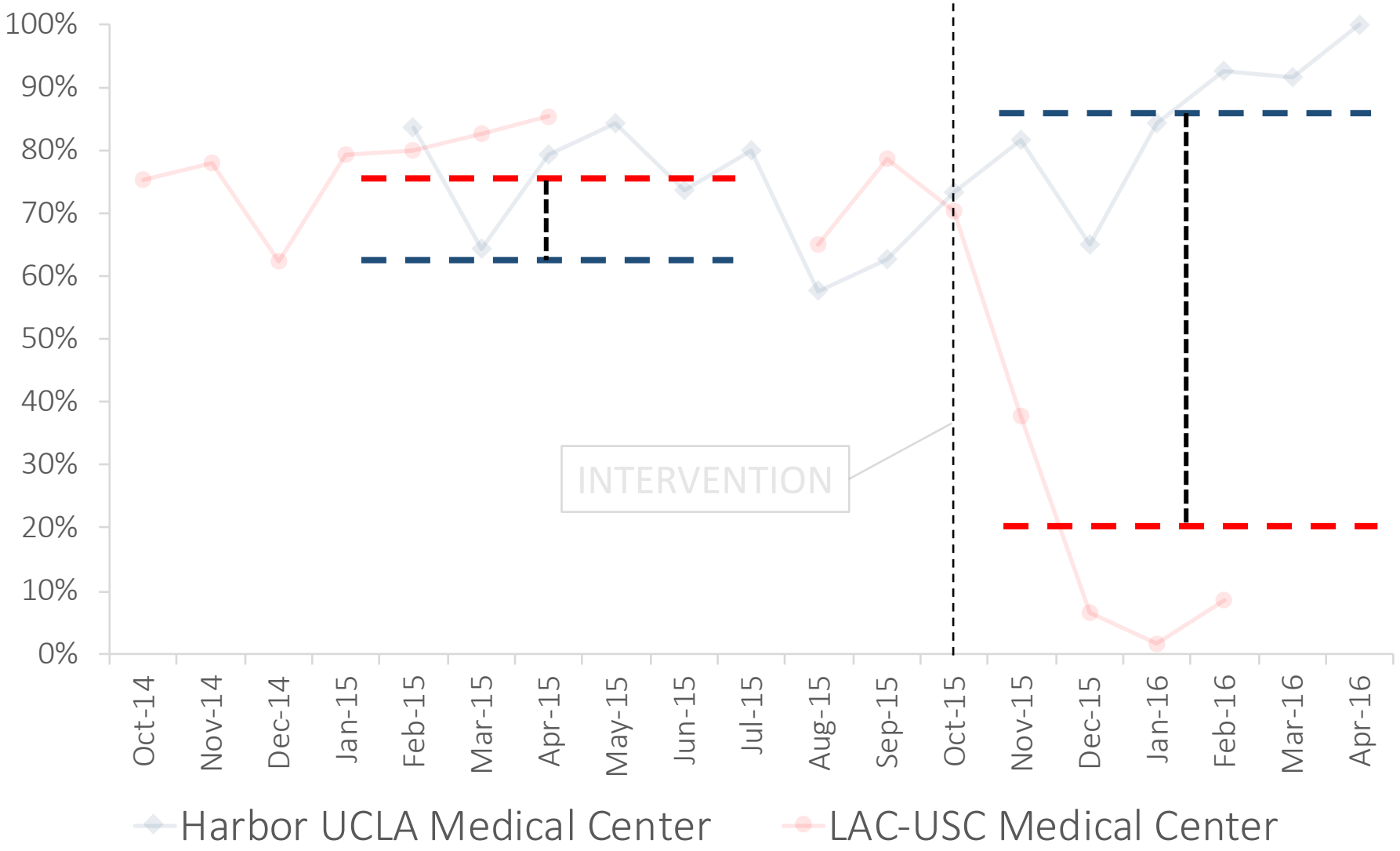
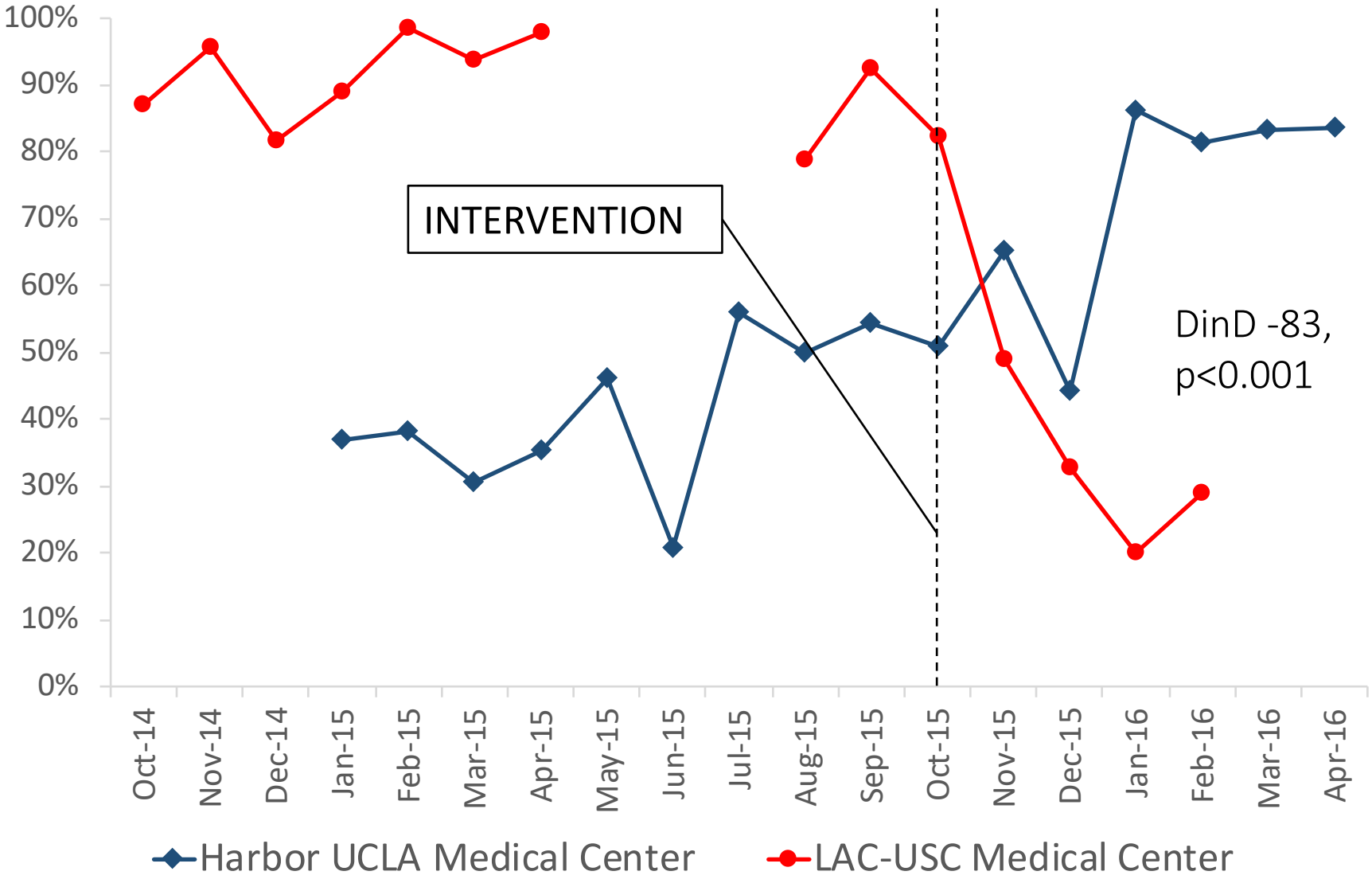
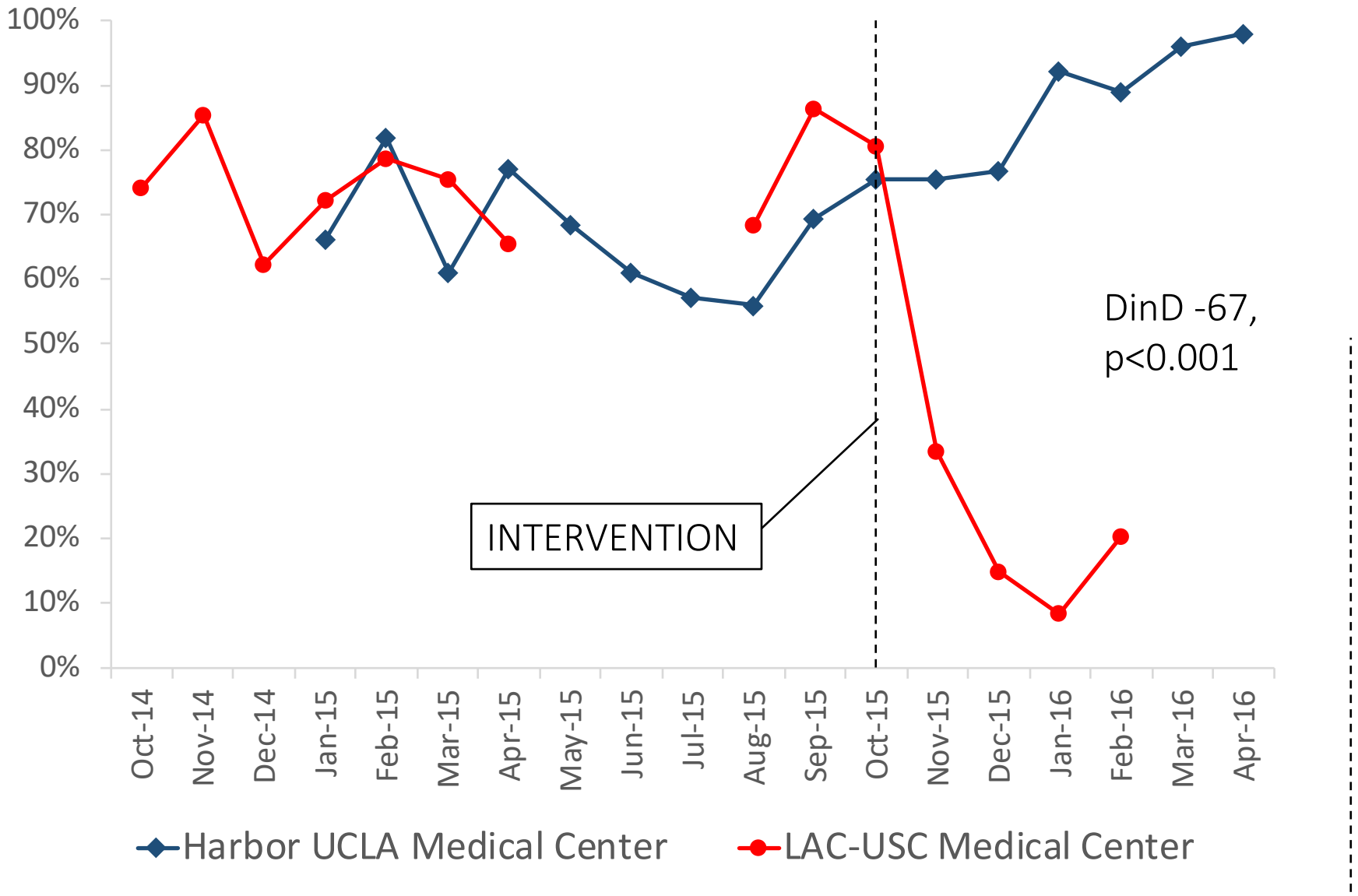


Percent of Cataract Patients with Pre-Operative Labs Ordered at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)



Percent of Cataract Patients with Pre-Operative EKGs Ordered at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)



Cost Analysis of Investments and Estimated Savings from Three Different Fiscal Perspectives (n=1,009)

Costs (Price x Δ Utilization)	DHS Costs (Capitated)	Fee-For-Service System Costs	Societal Costs
Investments			
Institute for Improvement Quality Advisor course for QI nurse	-$62,813	-$41,760	-$41,760
20% FTE of RN quality officer	-$38,308	-$25,560	-$25,560
Pricing	Medicaid rates	Medicare rates (profit)	Medicare rates
DinD of medical visits, labs, EKGs	+58,880	-9,073	+$60,490
Lost work due to medical care	NA	NA	+$37,268
Net Costs in Year 1	-$42,241	-$71,281	+$35,550
ESTIMATED COSTS After 3 Years	+$67,281	-$88,151	+$217,322

Results

- One year follow up showed a sustained impact except for an uptick in medical visits
- 30-day post-operative adverse medical events were extremely rare at both sites
- An ophthalmology licensed vocational nurse (LVN) reduced her workload by 100% (70% upon 1 year follow up) and pursued other clinical work
- No other substantive workload changes for other faculty, trainees, or staff

Limitations

- Single health system
- Non-randomized study
- Multicomponent initiative, difficult to tease out key factor

Conclusions

- At a large safety net health system, this QI initiative was associated with
  - Substantially reduced low value pre-operative care for cataract surgery patients
  - Modest cost savings for the health system
  - Freeing an LVN to pursue other clinical work

Implications

- Fortunately, no uptick in post-operative adverse events
- QI team reinstated visits because patients were missing phone calls and arriving late/unprepared; preoperative visits provided critical patient education
- Safety net patients particularly vulnerable to unintended consequences, i.e. failure of phone communication
- Bottom line: <u>all QI initiatives require continuous monitoring for unintended consequences</u>

Implications

- Reducing low-value care would be associated with cost-savings for financially capitated health systems and society

- But it would be associated with *losses* (albeit modest) for fee-for-service health systems, representing a potential barrier to reducing low-value care

- Another potential barrier: LAC-DHS could have doubled cost savings by firing LVN but chose not to do so due to high clinical need

Thank You!

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