



CT and MRI 8 Year Utilization Trends in the Context of a Non-Denial Prior Authorization Program

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Rationale for Study

1 Computed tomography (CT) and magnetic resonance imaging (MRI) have the potential to harm patients by exposing them to radiation and toxic contrast agents. [1-5]

2 Before the initiation of the non-denial prior authorization program, utilization had been increasing by 10% annually at the private health insurer being studied. [6]

3 Non-denial prior authorization has the potential to decrease the use of imaging while maintaining physician decision-making autonomy.

Objective: To assess shifts in CT and MRI utilization at a private health insurer in the eight years after the initiation of a non-denial prior authorization program

[1] Cascade PN, Webster EW, Kazerooni EA. Ineffective use of radiology: The hidden cost. *AJR*. 1998;170:561-564.

[2] Brenner DJ, Hall EJ. Computed tomography--an increasing source of radiation exposure. *N Engl J Med*. 2007;357(22):2277-84.

[3] Fazel R, Krumholz HM, Wang Y, et al. Exposure to low-dose ionizing radiation from medical imaging procedures. *N Engl J Med*. 2009;361(9):849-57.

[4] Linet MS, Slovis TL, Miller DL, et al. Cancer risks associated with external radiation from diagnostic imaging procedures. *CA Cancer J Clin*. 2012;

[5] Hasebroock KM, Serkova NJ. Toxicity of MRI and CT contrast agents. *Expert Opin Drug Metab Toxicol*. 2009;5(4):403-16.

[6] Levin DC, Bree RL, Rao VM, Johnson J. A prior authorization program of a radiology benefits management company and how it has affected utilization of advanced diagnostic imaging. *J Am Coll Radiol*. 2010;7(1):33-8.

Methods

DESIGN

- Retrospective, longitudinal study
- Administrative claims for CTs and MRIs from health maintenance organization (HMO) and preferred provider organization (PPO) plans offered to people with commercial insurance and Medicare Advantage insurance
- As a comparator, the same analysis was applied to plain film and ultrasound claims, which were not managed by the prior authorization program.

PATIENTS

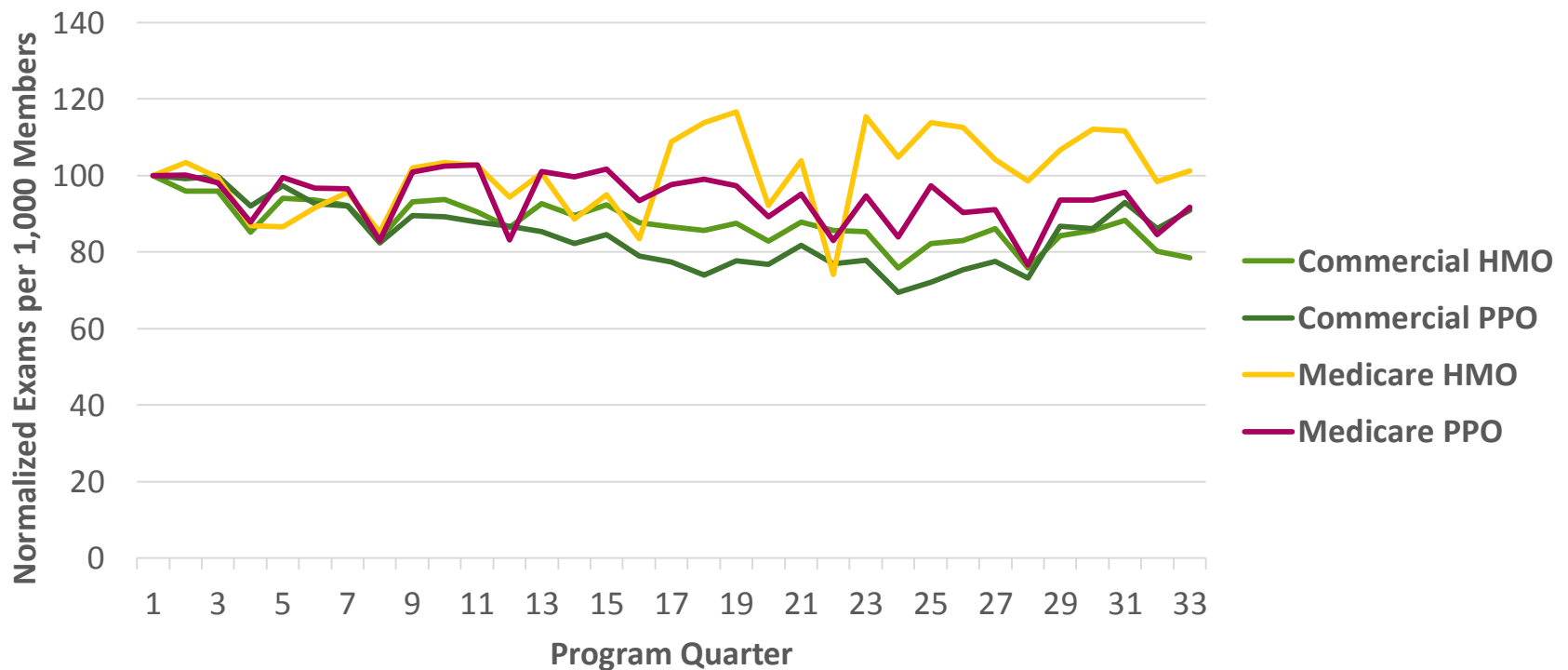
Patients with Medicare Advantage insurance who received a CT or MRI between 1/1/06 and 3/31/14 and patients with commercial insurance who received a CT or MRI between 1/1/07 and 3/31/15

OUTCOME

- Exams per thousand members was calculated for each quarter after the initiation of the non-denial prior authorization program,
 - ✓ Stratified by plan type
 - ✓ Stratified by modality
- Exam rates were normalized so that the numbers presented are changes relative to the first quarter of participation in the non-denial prior authorization program.

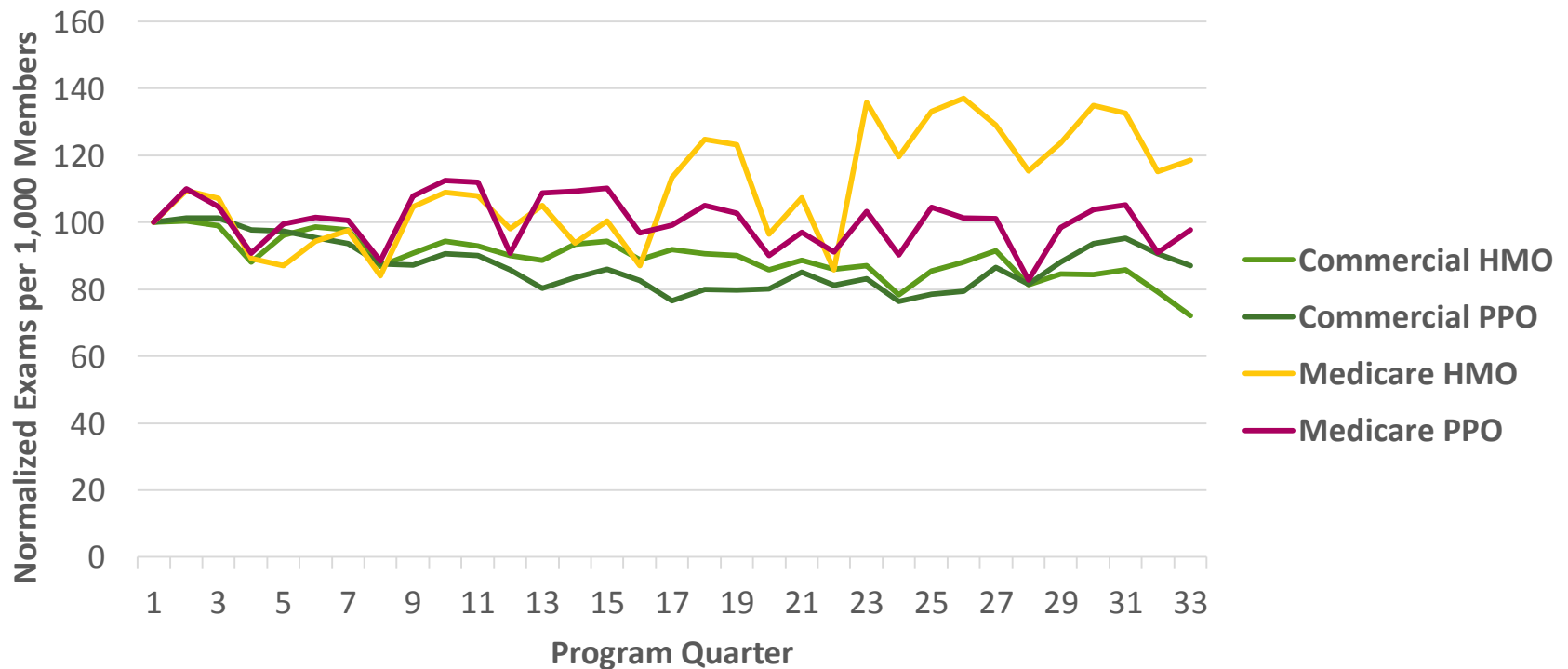
Results: Computed Tomography Utilization Trends

After 8 years, CT utilization was between 78% and 101% of what it had been in the first quarter of the period examined.



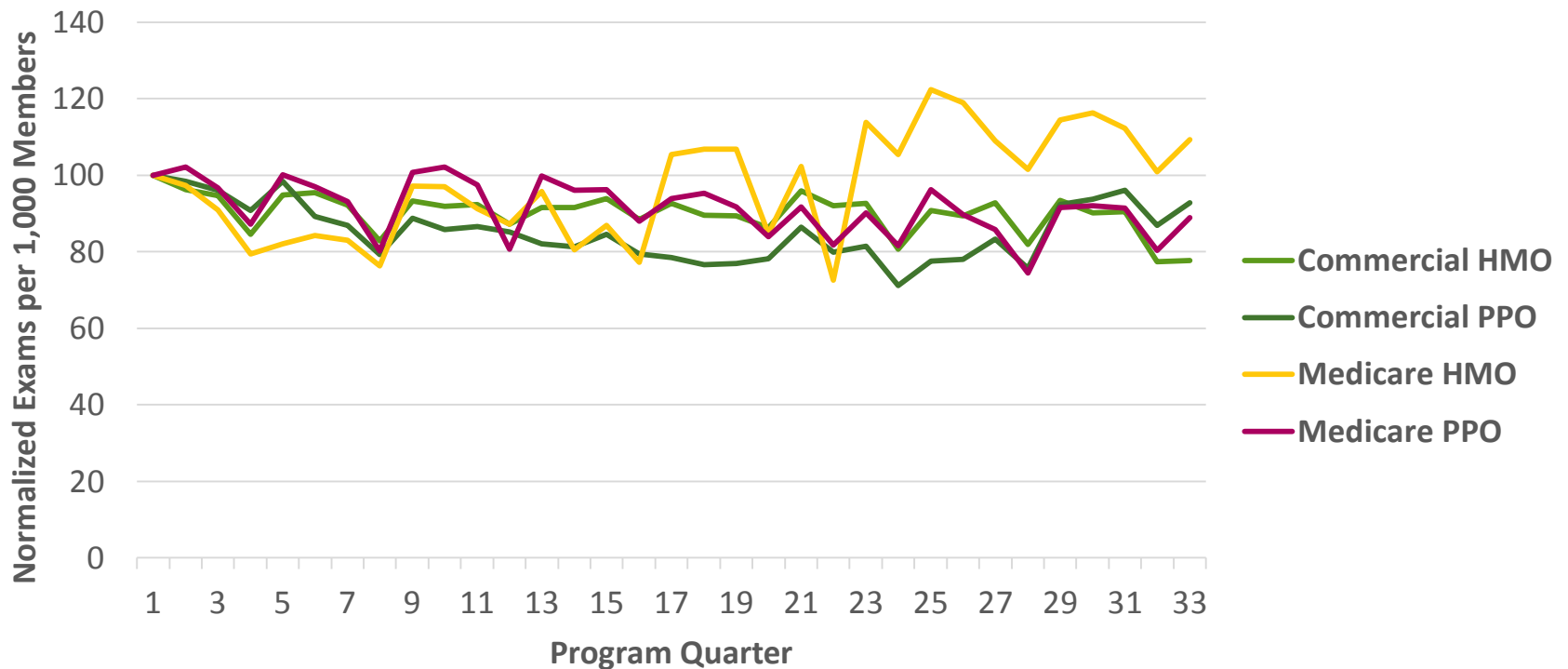
Results: Magnetic Resonance Imaging Utilization Trends

For all plans but the Medicare HMO, after 8 years, MRI utilization was between 72% and 98% of what it had been in the first quarter after program implementation.



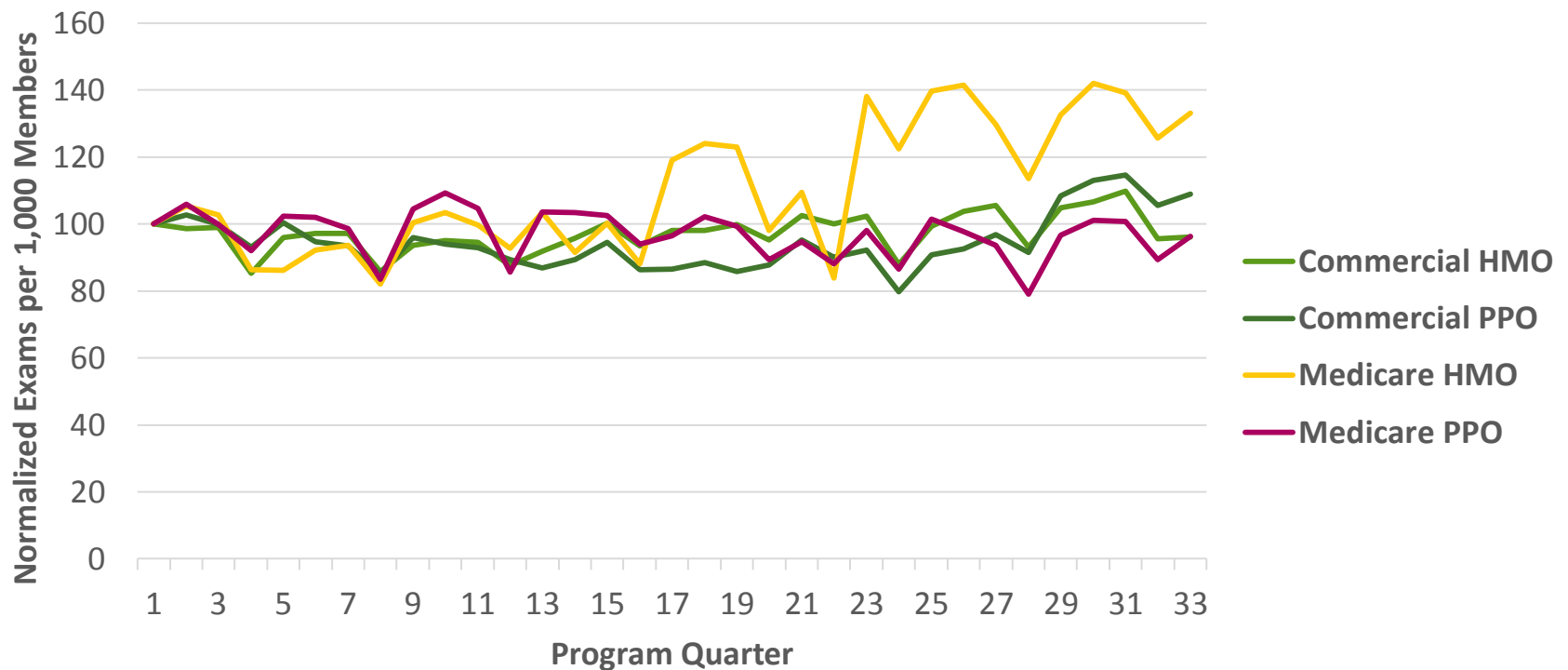
Results: Plain Film Utilization Trends

After 8 years, plain film utilization was between 78% and 109% of its original magnitude, suggesting that a decline in its use did not explain the changes in CT and MRI.



Results: Ultrasound Utilization Trends

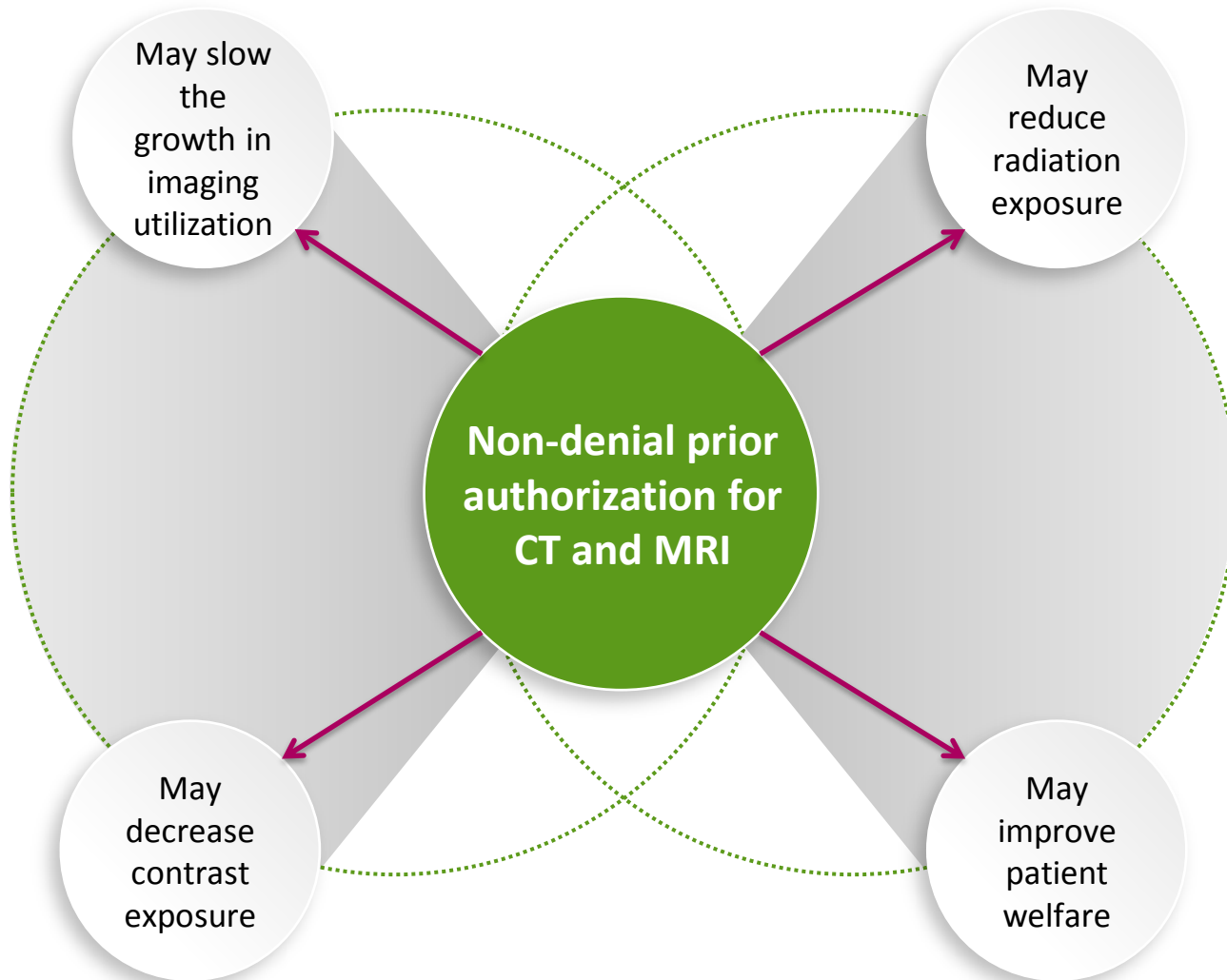
After 8 years, ultrasound utilization was between 96% and 133% of its original magnitude, suggesting that a decline in its use did not explain the changes in CT and MRI.



Conclusion

OBJECTIVE	RESULTS	LIMITATIONS	CONCLUSIONS
To assess CT and MRI utilization trends in the eight years after the introduction of a non-denial prior authorization program	After the introduction of the program, there was a decrease in CT and MRI utilization growth.	<p>The health plans examined may not be representative of other health plans.</p> <p>The analysis does not account for outside factors which may have impacted utilization trends.</p> <p>The prior authorization program evolved with changes in the standard of care during the period.</p>	<p>While there had previously been annually compounding growth, after the introduction of the program, the private health insurer experienced a decrease in CT and MRI growth.</p> <p>The absence of a consistent decline in low-tech imaging suggests that the non-denial program may have played a role in reducing growth.</p>

Implications





Thank You

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