2005-2014 CT and MRI Single Market Utilization Trends with a Non-Denial Prior Authorization Program

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Overview

1. Background
2. Methods
3. Results
4. Limitations
5. Conclusions and Implications
Background

1. Imaging has the potential to harm: radiation (CT); toxic contrast agents (MRI). [1-5]

2. Before non-denial prior authorization program, 10% annual increase in CT/MRI utilization. [6]

3. Non-denial prior authorization may decrease imaging while maintaining physician decision-making autonomy.

Objective:

To assess shifts in CT and MRI utilization at a private health insurer in the 9 years after the initiation of a non-denial prior authorization program.

### Methods

<table>
<thead>
<tr>
<th>Design</th>
<th>Patients</th>
<th>Outcome</th>
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</thead>
<tbody>
<tr>
<td>• Retrospective, longitudinal study of utilization under a non-denial prior authorization program</td>
<td>• San Antonio patients</td>
<td>• Exams per thousand members calculated annually</td>
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<tr>
<td>• Pre-program utilization from 2005 compared to post-program utilization from 2006-2014</td>
<td>• Received CT or MRI in 2005-2014</td>
<td>□ Stratified by plan type</td>
</tr>
<tr>
<td>• CT and MRI claims per 1,000 members</td>
<td>• Had a Commercial or Medicare Advantage HMO or PPO plan</td>
<td>□ Stratified by modality</td>
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<tr>
<td>• Stratified by type of health plan</td>
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<tr>
<td>• Comparator: plain film and ultrasound claims (not managed by prior authorization program).</td>
<td></td>
<td>• Exam rates normalized = changes relative to 2005 (pre-program) levels</td>
</tr>
</tbody>
</table>

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Study period: January 1, 2005 – December 31, 2014

JAN 1, 2005  JAN 1, 2006  DEC 31, 2014

INDEX YEAR

Pre-program period (1 year)  Post-program period (9 years)

Annual imaging utilization per 1,000 members indexed to 2005 levels
Results: Computed tomography

1\textsuperscript{ST} year: CT utilization at 76-90\% of 2005 level

9\textsuperscript{TH} year: CT utilization at 52-88\% of 2005 level

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Results: Magnetic resonance imaging

1ST year: MRI utilization at 86-94% of 2005 level

9TH year: MRI utilization at 50-75% of 2005 level
**Context:** Plain film (unmanaged)

- **1ST year:** PF utilization at 74-88% of 2005 level
- **9TH year:** PF utilization at 60-88% of 2005 level

[Diagram showing trend from 2005 to 2014 for different types of plans (Commercial HMO, Commercial PPO, Medicare HMO, Medicare PPO)]

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Context: Ultrasound (unmanaged)

1ST year: US utilization at 67-95% of 2005 level

9TH year: US utilization at 84-125% of 2005 level

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Overall findings

- Short-term and long-term CT and MRI utilization decreased

- While plain film utilization decreased, ultrasound utilization increased for some health plans

- Decreases in high-tech utilization may not have been driven by decreases in low-tech utilization, as there were not consistent declines in low-tech utilization
Limitations

- Only one region was considered
- Outside factors may have impacted utilization
- The prior authorization program evolved with changes in the standard of care during the period
Implications

Non-denial prior authorization for CT and MRI

- May slow the growth in imaging utilization
- May reduce radiation exposure
- May decrease contrast exposure
- May improve patient welfare
Thanks for listening

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