USING STAR RATINGS IN NURSING HOMES :
A QUANTITATIVE AND QUALITATIVE EVALUATION

Rachel Werner, MD, PhD

With: Tamara Konetzka PhD, Dan Polsky PhD,

Judy Shea PhD, Marilyn Schapira MD

UNIVERSITY of PENNSYLVANIA

CHERP

CENTER FOR HEALTH EQUITY
RESEARCH AND PROMOTION

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Background: Nursing Home Compare

In 2002:

- CMS began publicly rating nursing homes on
  - 10 individual measures of clinical quality
  - Staffing
  - Deficiencies

In 2008:

- CMS converted to a 5-star rating system
  - Overall star rating
  - Star ratings for clinical quality, staffing, deficiencies
  - Underlying individual measures still available

Example of the 5-star report card

	Nursing Home A	Nursing Home B	Nursing Home C
General Information	**Inspections and Complaints**	**Staffing**	**Quality Measures** · **Penalties**

	Nursing Home A	**Nursing Home B**	**Nursing Home C**
Overall Rating	★★★★★ Average	★★★★★ Much Below Average	★★★★★ Below Average
Health Inspection Rating	★★★★★ Average	★★★★★ Below Average	★★★★★ Much Below Average
Staffing Rating	★★★★★ Much Below Average	★★★★★ Much Below Average	★★★★★ Above Average
Quality Measure Rating	★★★★★ Much Above Average	★★★★★ Above Average	★★★★★ Average

Question #1:
Was there a change in admission rates to nursing homes following summary ratings in 2008?

- Are consumers more likely to choose a 5-star facility than a 1-star facility after star ratings were released?

- If so, presumably consumers (or their agents) use star ratings when using a nursing home

What we did

- Test for changes in choice of NH as a function of star ratings
  - Pre-post design (2005-2008 vs. 2009-2010)
- Estimate a patient's choice of nursing home as a function of
  - The nursing home's 5-star rating
  - Whether the admission occurred after the star ratings were available (post-December 2008)
  - The interaction between the two
- Also control for other nursing home characteristics and the driving distance between home and each nursing home option

Data

- OSCAR (2005 to 2010)
  - All Medicare/Medicaid-certified nursing homes
  - Inspection and staffing ratings
  - Facility characteristics
    - Profit status, # beds, chain, hospital based, occupancy, % Medicare, % Medicaid
  - We include all nursing homes included in public reporting
    - **16,147 nursing homes**
- Minimum Data Set (2005 to 2010)
  - All nursing home admissions
  - Detailed clinical data collected at regular intervals
  - Replicate the quality score for Nursing Home Compare
  - We include a 20% random sample of admissions between 2005-2010
    - **2,316,649 nursing home admissions**

Admissions by star ratings
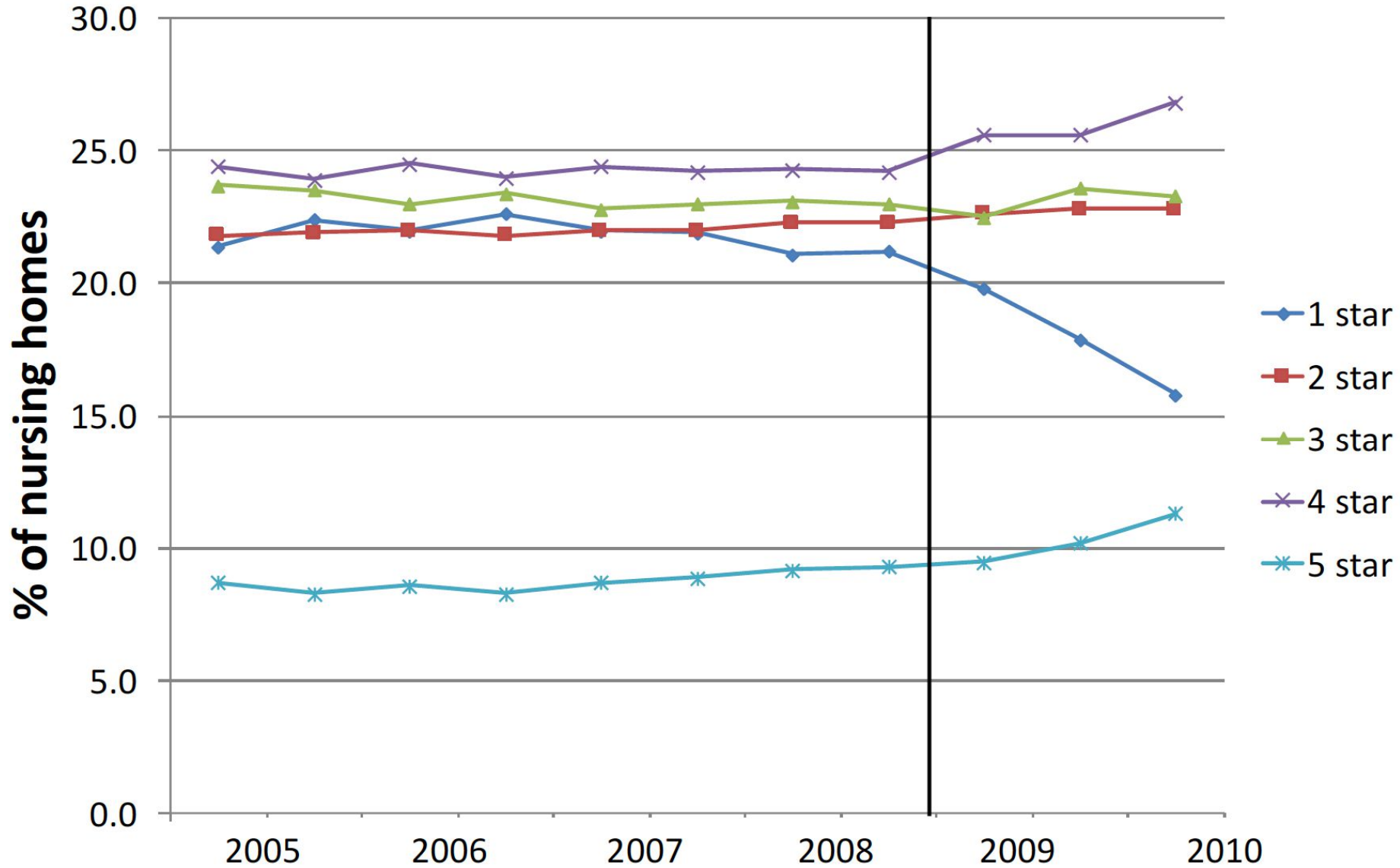
Adjusted changes in admissions by star ratings

	All admissions	Post-acute care	Long-term care
Post 2008*2-star	0.023***	0.024***	0.03*
Post 2008*3-star	0.018***	0.019***	0.008
Post 2008*4-star	0.017***	0.021***	-0.040**
Post 2008*5-star	0.079***	0.082***	0.085***
N	181,148,037	164,741,202	15,406,835

Covariates: driving distance, profit status, number of beds, occupancy rate, % Medicaid, % Medicare

How large is the change in admissions?

Simulated 5 SNF market	Pre-2008 market share	Post-2008 market share	Absolute change	Relative change
1 star	20	18.38	-1.62	-8.1%
2 star	20	20.46	0.46	2.3%
3 star	20	19.89	-0.11	-0.5%
4 star	20	19.99	-0.01	-0.1%
5 star	20	21.28	1.28	6.4%

	Absolute change in market share in an average market
1 SD improvement in % in pain (66%→86%)	0.2
1 SD improvement in star rating (3→ 5 stars)	1.3

Question #2:
Do consumers tradeoff between summary and individual ratings?

- Conduct in-depth, structured interviews
- Convenience sample of persons (or caregiver) recently admitted to a nursing home or anticipating nursing home admission
- Assess salience and use of nursing home rankings including star ratings and individual quality measures
- 35 interviews
  - 23% high school education or less
  - 29% black
  - 51% urban

What we found: qualitative data

- Few participants reported using NHC when choosing a nursing home
- Liked and understood the star ratings
  - Some confusion over how the stars were calculated, particularly when the overall star didn't appear to be an average of the staffing, deficiencies, and quality measure stars
  - Generated some distrust

What we found: qualitative data

- Most also liked the individual quality measures
  - Some confusion because high scores indicate higher quality in some and worse quality in others
- Most naturally focused on the quality measures that were most salient to them
- About 1/3 reported using the star ratings to narrow the choices and the individual measures to choose
- 20% reported that there was too much information
  - Concentrated among low SES subjects
- Most reported the report cards were missing information that was important in their decision
  - Resident/caregiver ratings

Conclusions

- Converting to a summary nursing home quality measure resulted in a relatively large change in consumer demand

- Further improvements in the summary measure could increase its effect

- Summary measures are a complement to, not a substitute for more detailed quality information