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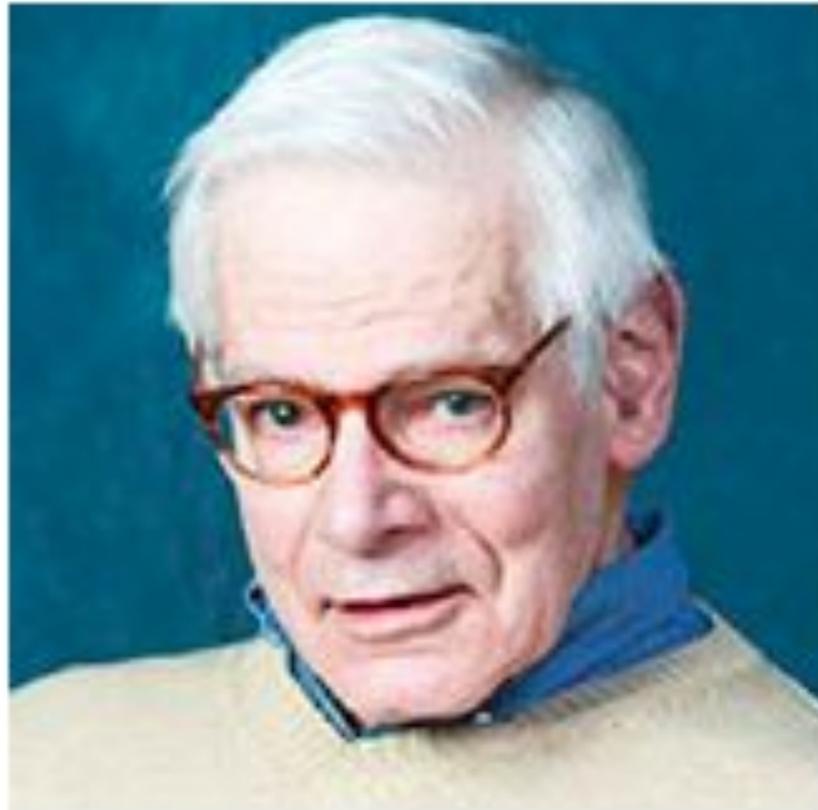
Quality Long Term Care: How Research & Innovation Lead to Better Outcomes (or NOT?)

Vincent Mor, Ph.D.
Florence Pirce Grant Professor
Brown University School of Public Health
&
Providence Veterans Administration
Medical Center

Minnesota Gerontological Society Meeting, 2019



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Robert L. Kane, MD (1940–2017).



Dedication

- To the memory of Robert L. Kane, pioneer in Long Term Care Research and Innovation
- Intellectual Leader in the field
- Mentor to many
- Advocate for all



Conflicts of Interest

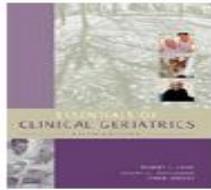
- Chair, Scientific Advisory Committee, naviHealth, a post-acute care convener
- Past Chair, Independent Committee on Quality for HCR-Manorcare
- Founder of PointRight with no further financial interests
- Rely upon clinical/administrative data for much of my research



Purpose

- Review major Research Innovations by Kanes'
- Consider contributions and implications of Kane's Quality Measurement paradigm
- Has Research on Quality Measures improved care for people using Nursing Homes?
- Measurement for Quality Improvement vs. for Performance Assessment and Payment
- Who Benefits and Future Challenges

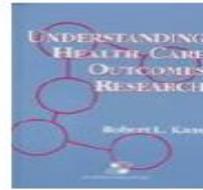




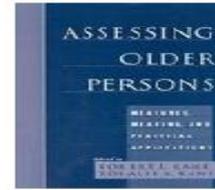
Essentials of Clinical Geriatrics
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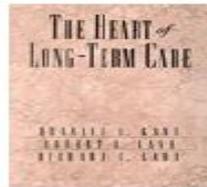
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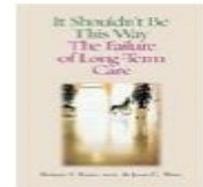
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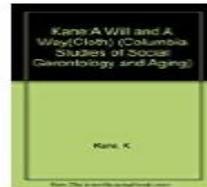
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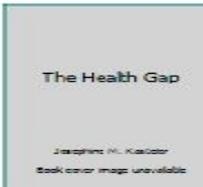
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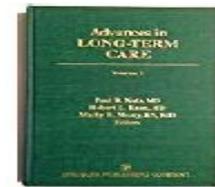
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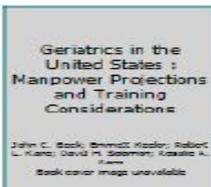
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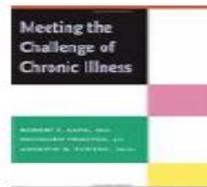
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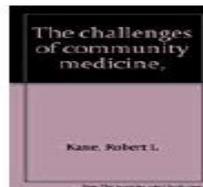
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Academic Impact

- Created whole fields of research in aging and long term care
- Over 600 total publications
- Cited ~18,500 times by others
- Over 1200 citations in 2018 alone!



PERSPECTIVES ON GERIATRICS BY
PIONEERS IN AGING

The Long View of Long-Term Care: Our Personal Take on
Progress, Pitfalls, and Possibilities

Robert L. Kane, MD, and Rosalie A. Kane, PhD

Summary their personal research histories is really a history of the field



Geriatric Nurse Practitioners

Effects of a Geriatric Nurse Practitioner on Process and Outcome of Nursing Home Care

ROBERT L. KANE, MD, JUDITH GARRARD, PhD, CAROL L. SKAY, BA, DAVID M. RADOSEVICH, RNC, MSPH, JOAN L. BUCHANAN, PhD, SUSAN M. McDERMOTT, RNC, MPH, SHARON B. ARNOLD, MSPH, AND LOYD KEPFERLE, MEd

Abstract: We compared measures of quality of care and health services utilization in 30 nursing homes employing geriatric nurse practitioners with those in 30 matched control homes. Information for this analysis came from reviews of samples of patient records drawn at comparable periods before and after the geriatric NPs were employed. The measures of geriatric nurse practitioner impact were based on comparisons of changes from pre-NP to post-NP periods. Separate analyses were done for newly admitted and long-stay residents; a subgroup of homes judged to be best case examples was

analyzed separately as well as the whole sample. Favorable changes were seen in two out of eight activity of daily living (ADL) measures; five of 18 nursing therapies; two of six drug therapies; six of eight tracers. There was some reduction in hospital admissions and total days in geriatric NP homes. Overall measures of medical attention showed a mixed pattern with some evidence of geriatric NP care substituted for physician care. These findings suggest that the geriatric NP has a useful role in nursing home care. (*Am J Public Health* 1989; 79:1271-1277.)



Impact of Nurse Practitioner Research on Nursing Homes

- Geriatric NPs improve care quality, particularly for long stay residents
- Evidence Based Results incorporated into the creation of EverCare
- Kane's Observational Studies of EverCare reveal some benefits of NP presence in NH
- Large increases in NPs in NH's particularly more recently



Expansion of NPs in NH

Table. Physician, Nurse Practitioner, and Physician Assistant Billing in 2007, 2010, and 2014

Billing Category	2007	2010	2014
Physicians, No.	435 943	419 299	459 895
Ever billing in an SNF, ^a No. (%)	59 724 (13.7)	50 814 (12.1)	45 070 (9.8)
Billing ≥90% in an SNF, ^a No. (%)	1496 (0.34)	1697 (0.40)	2225 (0.49)
Nurse practitioners or physician assistants, No.	64 393	80 029	131 986
Ever billing in an SNF, ^b No. (%)	7528 (11.7)	8309 (10.4)	12 470 (9.5)
Billing ≥90% in an SNF, ^b No. (%)	1678 (2.6)	2021 (2.5)	2074 (2.2)
Evaluation and management code bills at SNF, No.	4 731 367	4 538 967	5 205 865
By physician billing ≥90% in an SNF, ^c No. (%)	550 425 (11.6)	584 952 (12.9)	747 106 (14.3)
By nurse practitioner or physician assistant billing ≥90% in an SNF, ^c No. (%)	49 145 (10.4)	581 235 (12.8)	895 830 (17.2)

Abbreviation: SNF, skilled nursing facility.

^a For the physicians ever billing in an SNF or physicians billing 90% or more in an SNF, the denominator is physicians billing Medicare in that year.

^b For nurse practitioner or physician assistant billing, the denominator is nurse

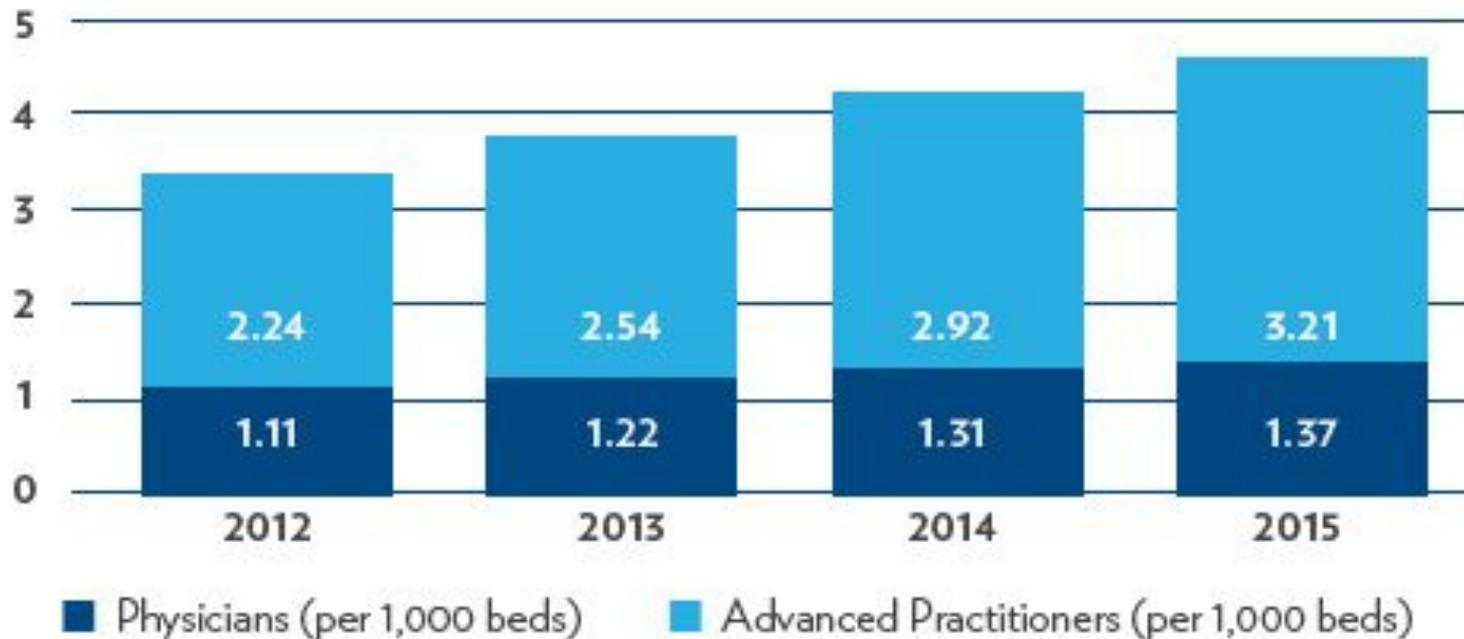
practitioners or physician assistants billing Medicare in that year.

^c The denominator for physicians, nurse practitioners, and physician assistants billing at 90% or more is the number of evaluation and management codes billed in a nursing home or SNF in the year 2007, 2010, or 2014.



Continuing Expansion of Nurse Practitioners

FIGURE 1.
NURSING HOME SPECIALISTS PER 1,000 OCCUPIED BEDS
(2012-2015)

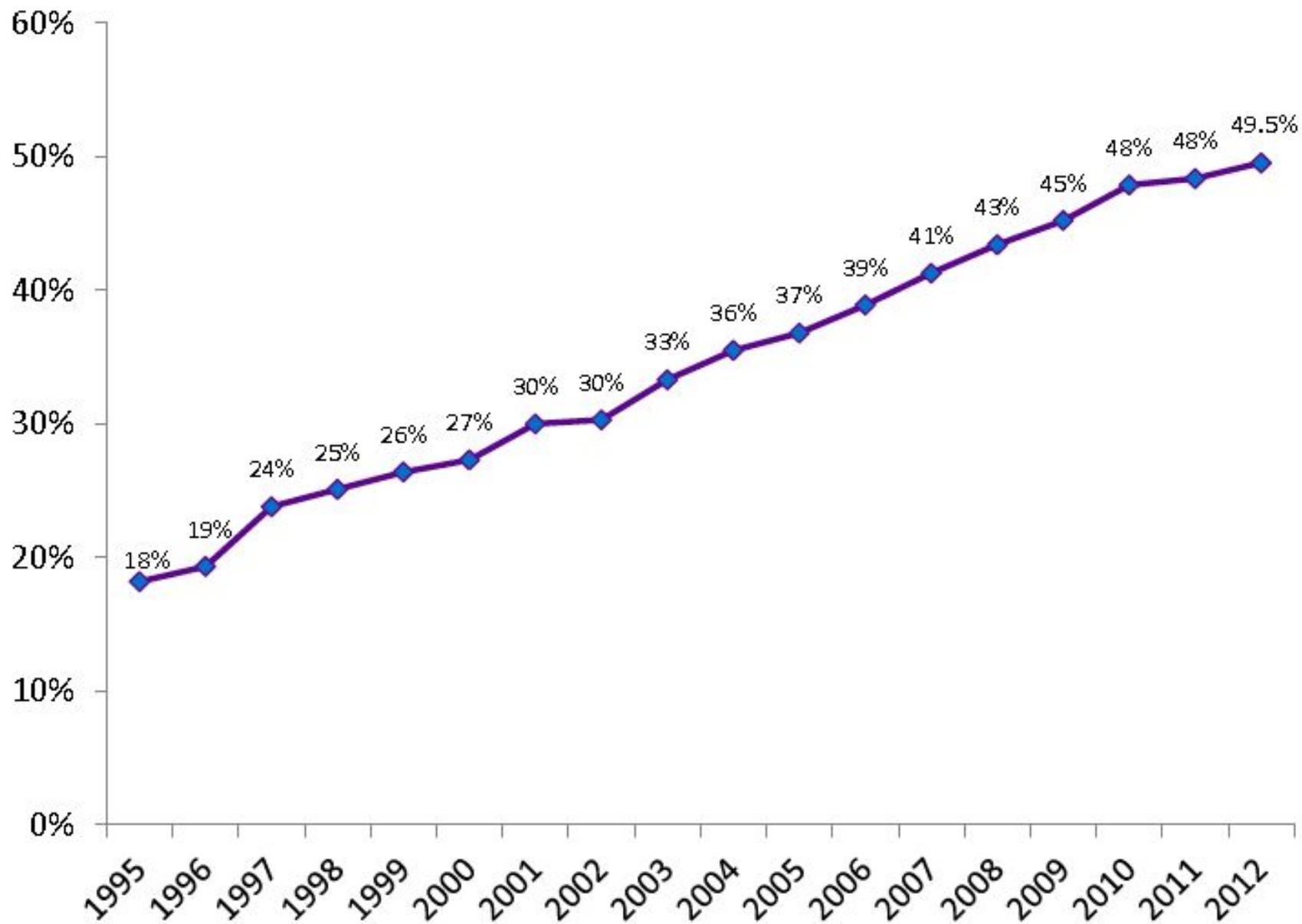


Re-Balancing Long Term Care

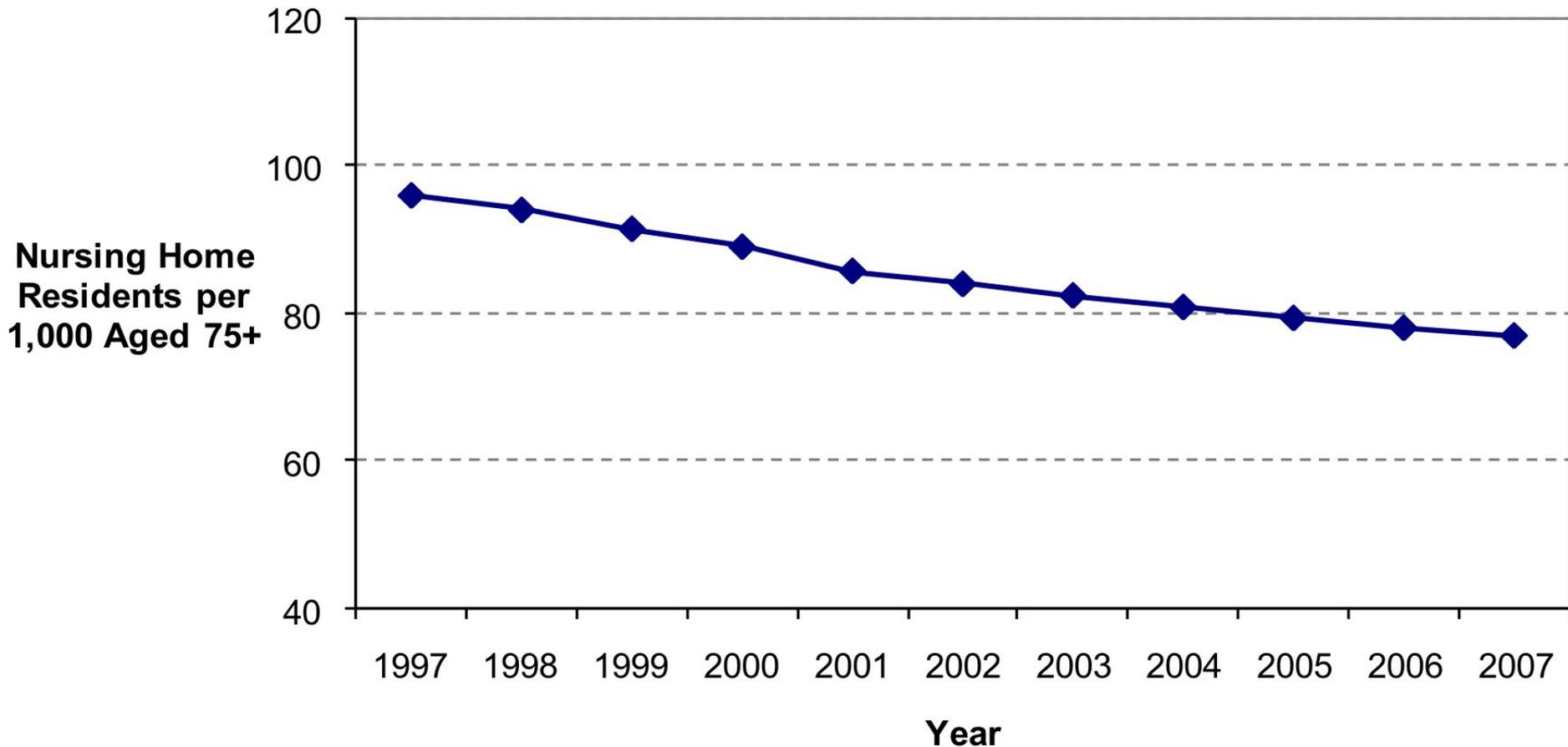
- Kane Research on Assisted Living in Oregon reveals transfer out of NH possible
- Research evaluating Community Long Term Care waiver demonstrations reveals only small “wood-work” effect
- Leads to huge proportionate increases in state funding of Community based services
- Actual declines in NH beds/1000 and occupancy rates



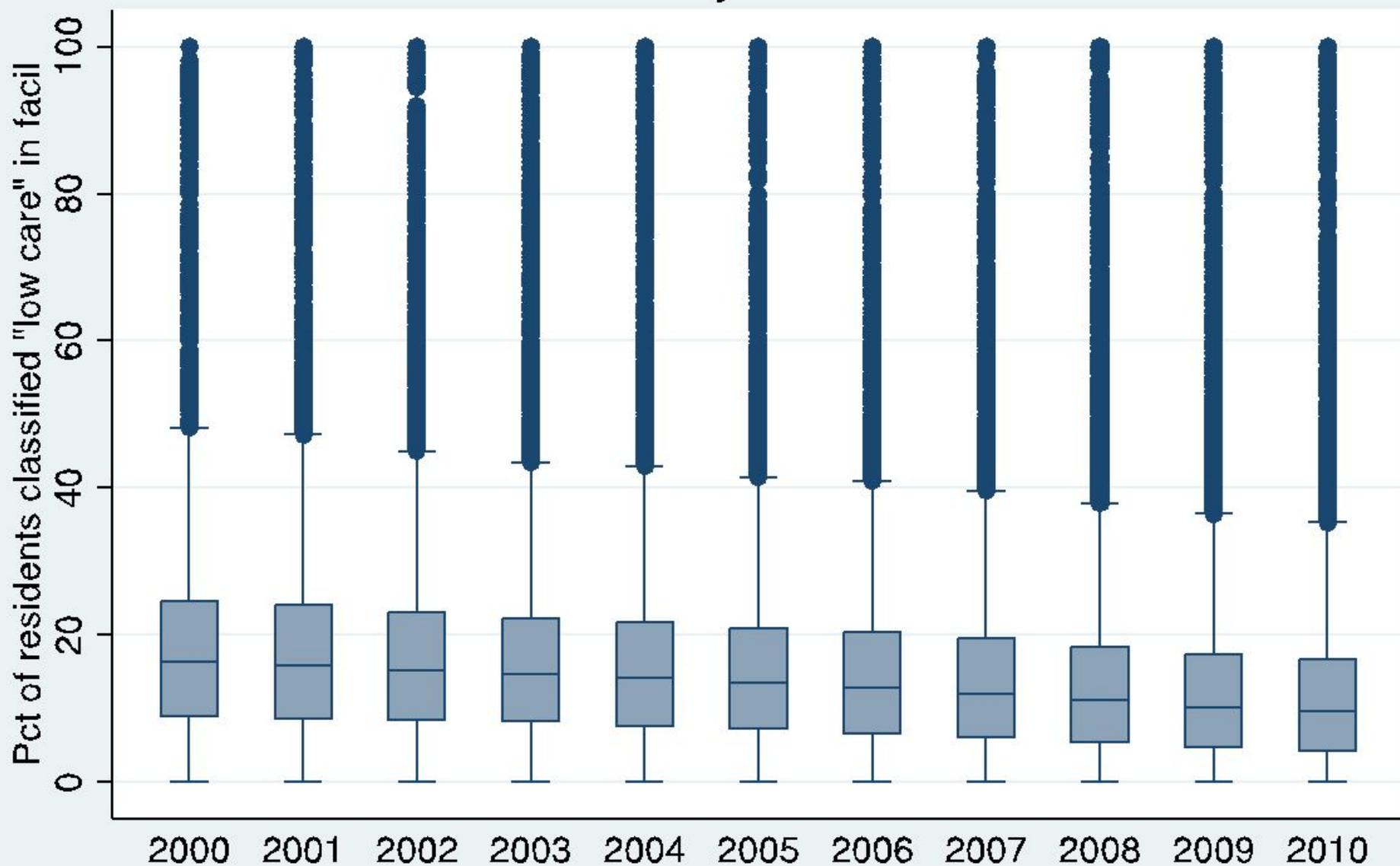
Figure 3. Medicaid HCBS Expenditures as a Percent of Total Medicaid LTSS Expenditures, FFY 1995-2012



U.S. Nursing Home Residents per 1,000 People Aged 75 and Older, 1997–2007



Prevalence of Low Care Residents By Year



Summary Impact of Re-Balancing Research Innovation

- Policy often follows or reflects changes in public attitudes; BUT researchers provide the “language”
- Increased HCBS spending not the only trend
- Rise in Assisted Living for wealthier whites
- Terrible reputation of nursing homes
- Ethos of “aging in place” reflected in policies AND
- NH bed supply stabilized, allowing states to increase HCBS;
- All predictions about NH bed need were WRONG



Geriatric Assessment

SPECIAL ARTICLE

EFFECTIVENESS OF A GERIATRIC EVALUATION UNIT

A Randomized Clinical Trial

LAURENCE Z. RUBENSTEIN, M.D., M.P.H., KAREN R. JOSEPHSON, M.P.H., G. DARRYL WIELAND, PH.D., M.P.H.,
PATRICIA A. ENGLISH, M.S., JAMES A. SAYRE, DR.P.H., AND ROBERT L. KANE, M.D.

Abstract We randomly assigned frail elderly inpatients with a high probability of nursing-home placement to an innovative geriatric evaluation unit intended to provide improved diagnostic assessment, therapy, rehabilitation, and placement. Patients randomly assigned to the experimental ($n = 63$) and control ($n = 60$) groups were equivalent at entry.

At one year, patients who had been assigned to the geriatric unit had much lower mortality than controls (23.8 vs. 48.3 per cent, $P < 0.005$) and were less likely to have initially been discharged to a nursing home (12.7 vs. 30.0 per cent, $P < 0.05$) or to have spent any time in a nursing

home during the follow-up period (26.9 vs. 46.7 per cent, $P < 0.05$). The control-group patients had substantially more acute-care hospital days, nursing-home days, and acute-care hospital readmissions. Patients in the geriatric unit were significantly more likely to have improvement in functional status and morale than controls ($P < 0.05$). Direct costs for institutional care were lower for the experimental group, especially after adjustment for survival.

We conclude that geriatric evaluation units can provide substantial benefits at minimal cost for appropriate groups of elderly patients, over and above the benefits of traditional hospital approaches. (N Engl J Med 1984; 311:1664-70.)



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ASSESSING OLDER PERSONS

MEASURES,
MEANING, AND
PRACTICAL
APPLICATIONS

Edited by

ROBERT L. KANE
ROSALIE A. KANE

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Geriatric Assessment to Mandatory Assessment

- Evidence Based success of Geriatric Assessment translated into IoM Report
- IoM Report integrated into OBRA '87
- Minimum Data Set (MDS) for Nursing Home Resident Assessment Mandated
- BUT, geriatricians very disappointed in summary approach in original MDS
- In time, value of mandatory assessment acknowledged resulting in MDS 3.0



The Resident's Voice

- Kane & Kane pioneered efforts to measure quality of life and to require asking resident
- Research proved that most residents could and did respond to questions
- These insights integrated into MDS 3.0 and cognition, mood and pain items successful
- Kane & Kane kept advocating for quality of life



Paying for Performance: An Innovative Paradigm

- In 1976 Kane proposed paying long term care providers for quality and outcome performance
- Almost 50 years later still grappling with implementing this vision
- Much closer due to uniform geriatric assessment and available data
- Kane and Darling worked with Minnesota to develop a system; ongoing updates



Paying for Performance

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A Quality-Based Payment Strategy for Nursing Home Care in Minnesota

Robert L. Kane, MD,¹ Greg Arling, PhD,² Christine Mueller, PhD, RN,³
Robert Held, MBA,⁴ and Valerie Cooke⁴



A Brief History

- Early RCT of quality based payment was not effective in changing behavior or outcomes
- More recent CMS multi-state demonstration also showed no effect
 - TOO COMPLICATED and savings had to come from reduced hospitalizations
- Several states tried quality based “bonuses”
- Minnesota developed comprehensive system



Minnesota DRAFT Quality Point System

Table 1. Quality Points System

Quality Measure	Brief Definition	Point Assignment	Quality Points	Proposed Quality Points
Direct care staffing level	Case-mix adjusted/wage-adjusted direct care staff hours per day (e.g., registered nurses, licensed practical nurses, nursing assistants, activity directors, and other direct care staff).	Each of three peer groups (standard, hospital attached, and boarding care homes) will be assigned thresholds for achieving maximum and minimum points. Points will be distributed on a straight line between these two points.	0	10
Staff turnover	Number of nursing staff who left between October 1 of one year and September 30 of the following year divided by number of staff.	0 points if turnover rate > .70; 15 points if turnover rate < .20; otherwise, points are distributed proportionately according to rates between .70 and .20.	15	0
Staff retention	Number of nursing staff on October 1 who were still employed on September 30 of the following year divided by number of staff.	0 points if retention rate < .50; 25 points if retention rate > .80; otherwise, points are distributed proportionately according to rates between .50 and .80.	25	20
Use of pool staff	Pool staff hours as a percentage of total nursing hours.	0 points if > .10 pool staff hours; 10 points if no pool staff hours; otherwise, points are distributed proportionately according to rates between .10 and 0.	10	5

Minnesota DRAFT Quality Point System (cont.)

Table 1. Quality Points System

Quality Measure	Brief Definition	Point Assignment	Quality Points	Proposed Quality Points
QIs from the Minimum Data Set	Summary QI score (range = 0–100) based on facility rates on 24 QIs in care domains such as behavior or depression symptoms, incontinence, skin care, pain, psychotropic drugs, and nutrition.	0 points if QI score = 0; 40 points if QI score > 40; otherwise, points are distributed proportionately according to rates between 0 and 80.	40	35
Survey deficiencies	Survey deficiencies at Level F or higher for patient care-related F-tags.	0 points if facility had deficiency of H or higher; 10 points if all deficiencies were below F; and 5 points if highest deficiencies were F or G.	10	10
Resident quality of life and consumer satisfaction	Average facility score on a standardized resident interview covering quality of life and consumer satisfaction. Interviews are to be carried out by an independent contractor with approximately 10,000 residents per year.	To be determined.	0	20

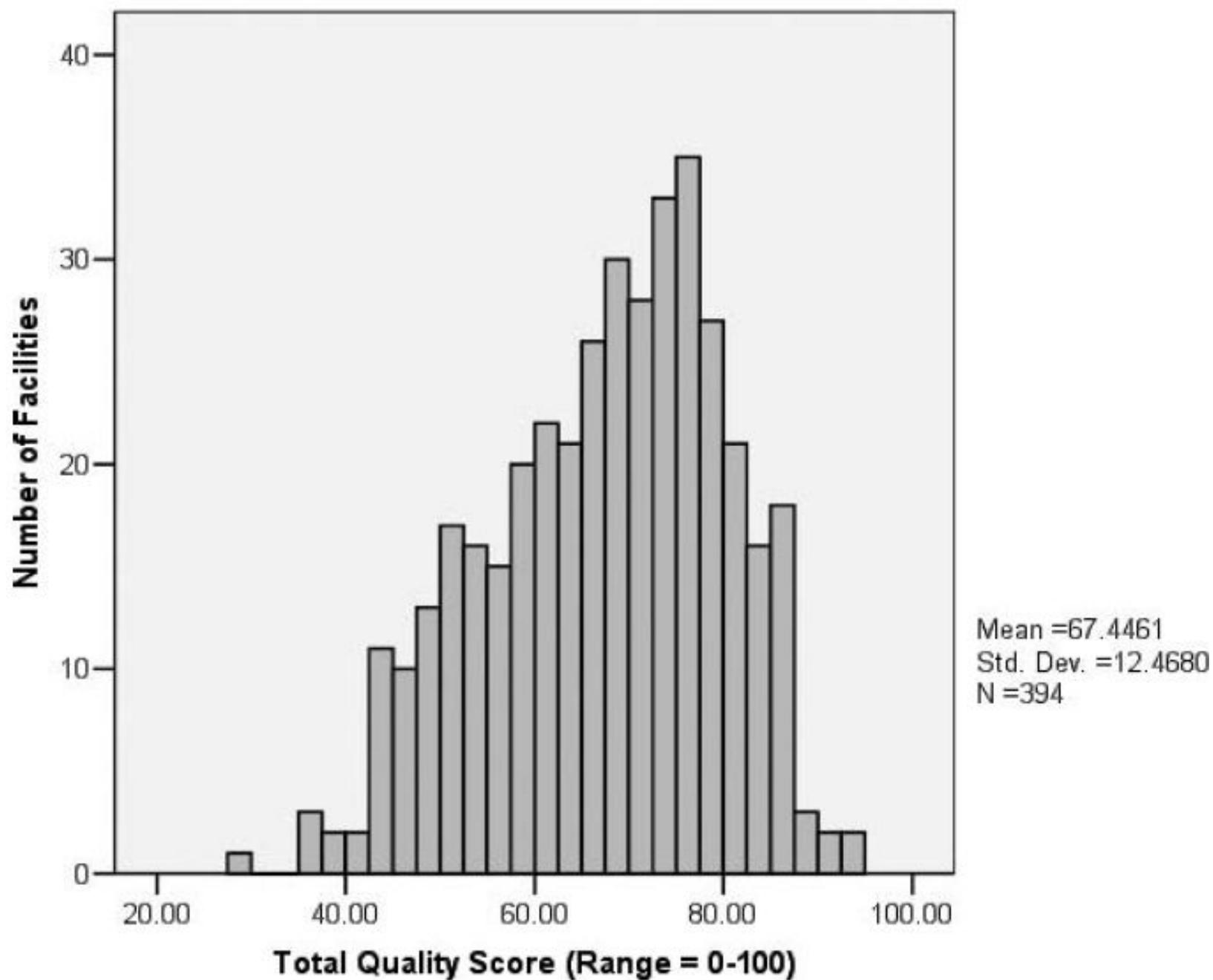


Figure 1. Minnesota nursing facilities by quality score.

Performance Payment Requires Unbiased Quality Measures

- Assumes that quality is measured the same way across NHs or inspectors
- Assumes that the mix of residents is very similar across NHs being compared
- Assumes that the measures of quality are important AND subject to modification
- Assumes that there is agreement about this



Quality Measures

- Suggest the possible existence of a “problem” at the provider/agency or area level with a particular specific aspect of quality
- While could be positive, most often poor scores on measures reflect poor care
- The measure represents a “sign” of high or low quality



Types of Quality Measures

- Structure
 - Staffing Levels
 - Compliance with standards (inspection)
- Process
 - Treatments given (or not) to those “in need”
 - Physical restraints, ant-psychotics, therapy minutes
- Outcomes



Desired Quality Measure Properties

- Cover key dimensions of quality
- Clinical content validity of definition (numerator, denominator, covariates)
- Addresses areas which can be influenced by clinical care practices



CMS Five Star Quality Measures

- Long-Stay Residents:
 - Percent of residents whose need for help with activities of daily living has increased
 - Percent of high risk residents with pressure ulcers (sores)
 - Percent of residents who have/had a catheter inserted and left in their bladder
 - Percent of residents who were physically restrained
 - Percent of residents with a urinary tract infection
 - Percent of residents who self-report moderate to severe pain
 - Percent of residents experiencing one or more falls with major injury
 - Percent of residents who received an antipsychotic medication
- Short-stay residents:
 - Percent of residents with pressure ulcers (sores) that are new or worsened
 - Percent of residents who self-report moderate to severe pain
 - Percent of residents who newly received an antipsychotic medication



Constructing Quality Measures

Operationally applied at the level of the individual patient or client

THEN, aggregated up to the level of the provider

Take count of patients with condition of interest (numerator)

Take count of patients served by provider, or in group of patients defined as “at risk” of condition of interest (denominator)

Determine time frame to which measure applies

Observed rate: ratio of these counts in the NH



Different Types of Outcome Measures

- Prevalence
 - Average Level of Patient Satisfaction
 - Daily Pain or Uncontrolled Pain
- Incidence
 - Falls
 - Hospital Acquired Infections
- Change in Status
 - Rate of Decline in Physical Functioning
 - Improvement in Mood or Depression



Issues in Incidence or Change Quality Measures

- Applies only to long stay population
- Facility differences in mortality or hospital use will affect validity of the quality indicator
- Short stay “change” measures compromised by variation in Facility Length of Stay since assessments done on fixed intervals
- Even short stay QI’s using discharge assessments biased by Length of Stay

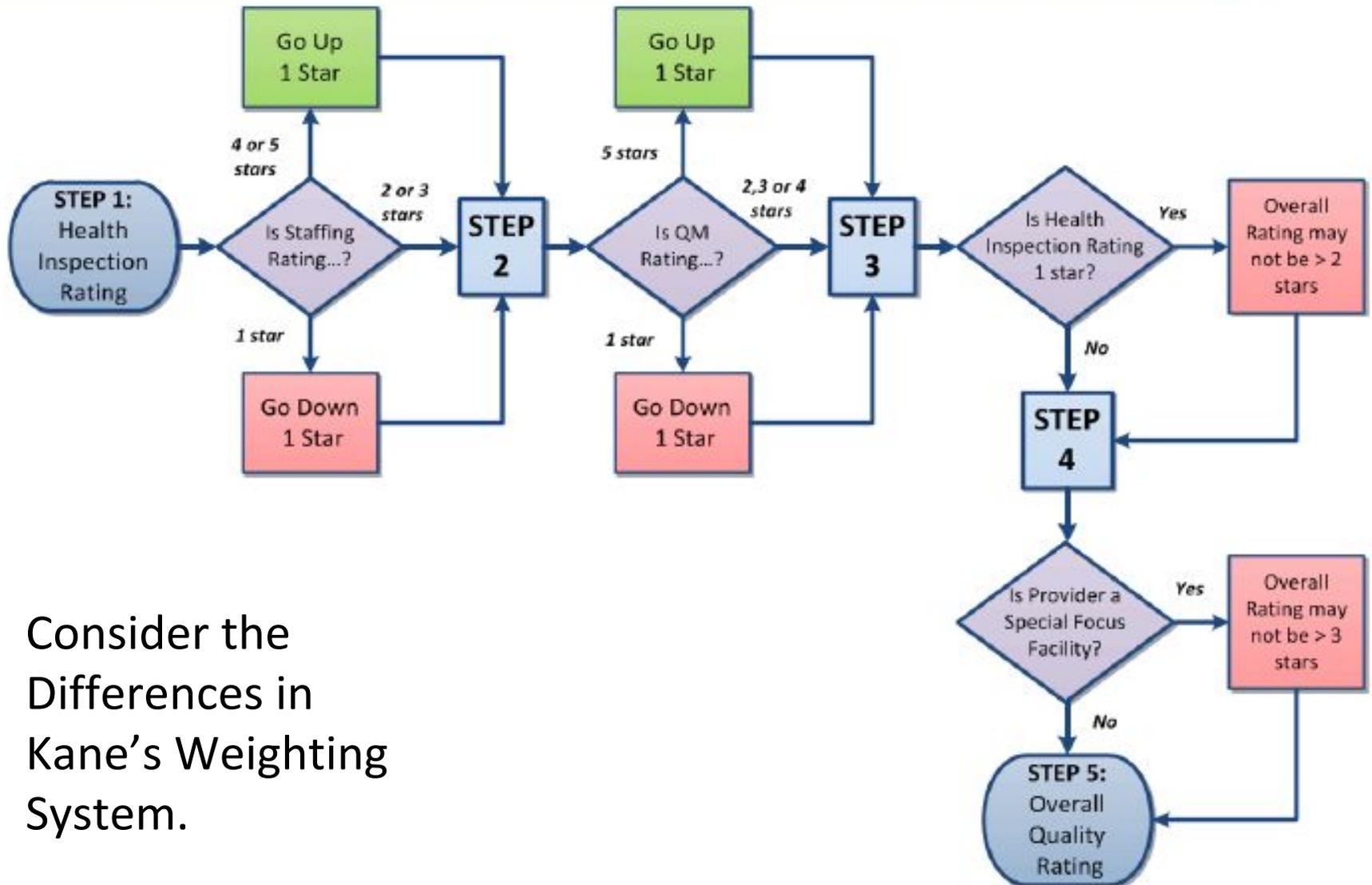


CMS Take on Quality Performance

- Five Star rankings introduced to give consumers and advocates information for choice
- Many iterations but created as a composite of MDS based quality measures, state inspections and nurse staffing levels
- Added new outcome measures over time
- Changed data sources (e.g. staffing)

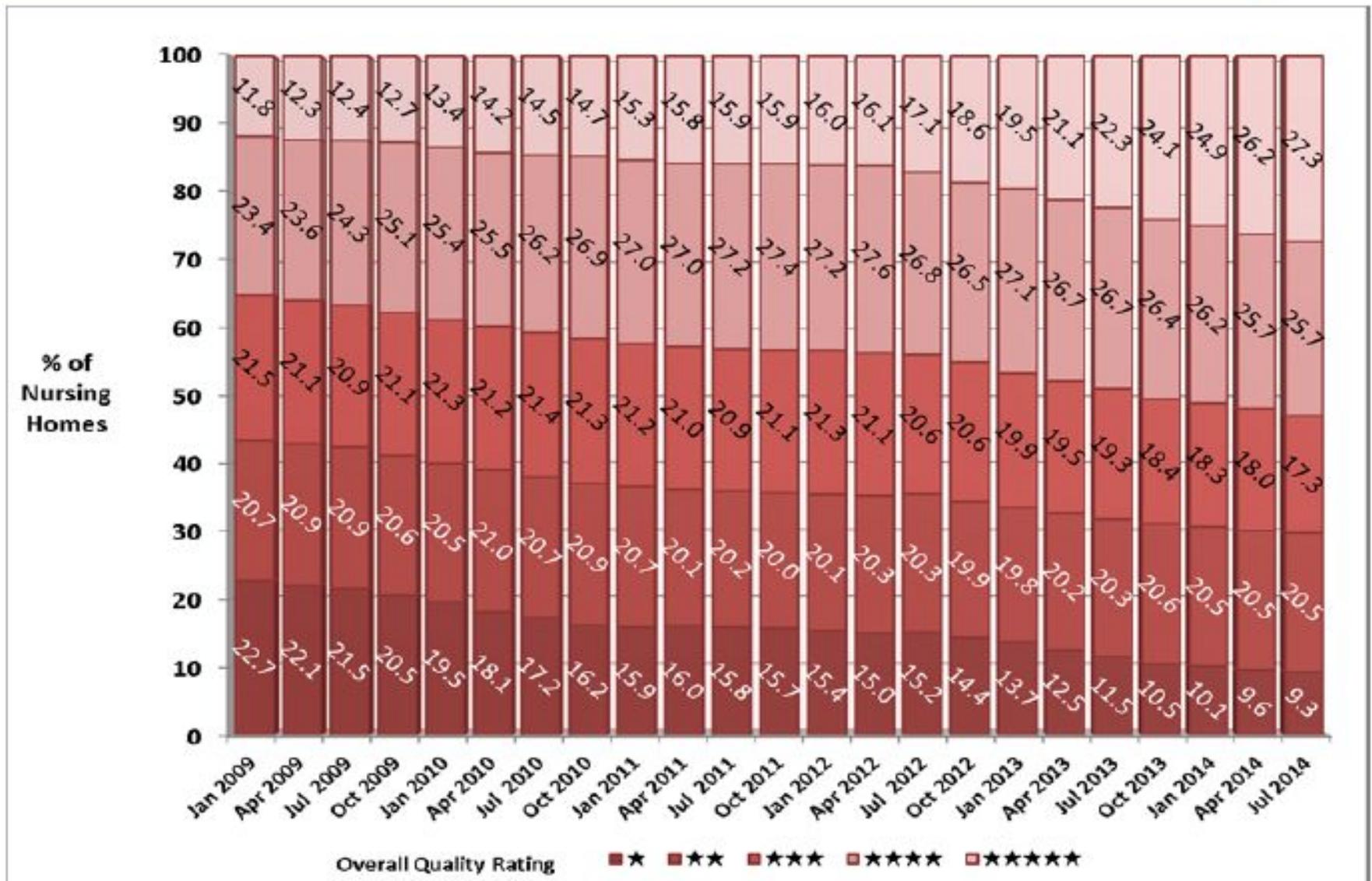


Five-Star Rating Methodology: Computation of Overall Rating



Consider the Differences in Kane's Weighting System.

Trends in Overall Rating: 2009-2014



Problems with Composite Measures

- Adding uncorrelated measures reduces precision unless weighting is very strong
- Providers at the top and bottom of the range do poor or well on most components; BUT between 10th and 90th percentile vague
- An NH at the 70th percentile could have MAJOR deficits in some or be above average on all
- Component scores are relative, not absolute
- Ranks create differences where none exist



SNF 30-Day Measure: Observed and Risk-Standardized Readmission Rates (2011)

Nursing Facility 30-Day All Cause Readmission Rates by Overall and QM Rating (as of December 2011)		
	Observed	Risk-standardized
Overall Rating		
1-Star	22.0%	21.6%
2-Stars	20.9%	21.3%
3-Stars	20.2%	21.2%
4-Stars	18.9%	20.9%
5-Stars	17.7%	20.8%
QM Rating		
1-Star	20.6%	21.3%
2-Stars	20.4%	21.3%
3-Stars	20.0%	21.1%
4-Stars	19.7%	21.1%
5-Stars	19.2%	20.9%

Source: Abt Analysis of Readmission file from RTI and December 2011 Rating file

Paying for Quality Performance

- Requires a Single Measure OR a Composite
- Performance Bonus can be based on NH comparisons OR on Improvements OR some combination
- CMS Value Based Purchasing demo relied on “savings” from reduced hospitalizations
 - No bonuses without aggregate savings
- No improvements; system too complicated
 - (As Kane predicted)



Implications for Performance Payment

- \$\$ translate into a uni-dimensional ranking no matter how many measures combined
- Mix of Post-Acute and Rehab patients key to measuring relevant performance
- Large selection effect present in data
- Up-coding hard to detect even via audit
- Measures **MUST** be sensitive to efforts to improve the outcomes
- Financial incentive **MUST** be worth it!



Summary

- Kane's Research Innovations changed practice and launched new avenues of investigation
- Geriatric Assessment now routine; provides a source of data for facility quality measurement
- Kane's vision of performance based payment continues to elude policy makers
- So, there is still room for former students to contribute to the field and extend the legacy

