NIHR | National Institute for Health and Care Research

The economic determinants of English home care quality

Steve Allan and Florin Vadean
PSSRU, University of Kent

NIHR Policy Research Units and Social Care Webinar Series - 6th April 2022

NIHR | Policy Research Unit in Adult Social Care

Introduction

- Rationale
  - Important for policy to understand factors that affect the quality of care in social care, and to what extent, so as to:
    - Sustain and improve quality of social care services and workforce
    - Ensure that public funds are spent efficiently
  - Staff play a key role in delivery of home care
  - Lack of research evidence
- Objective
  - To determine the factors which affect English home care provider quality
    - Including staffing characteristics

NIHR | Policy Research Unit in Adult Social Care

Previous research

- US Home care quality differs by:
  - Sector, i.e. for profit vs not for profit
    - Higher costs, i.e. greater use of service (Grabowski et al., 2009; Cabin et al., 2014)
    - Lower quality (Cabin et al., 2014)
  - Location (Wang et al., 2017; Ma et al., 2022)
- UK – limited evidence
  - Location:
    - Delayed hospital discharges higher in areas with fewer home care providers (Allan et al., 2021)
  - Care home quality
    - Staffing factors, e.g. retention, vacancies and wage, significantly influence quality (Allan and Vadean, 2021; Towers et al., 2021)

NIHR | Policy Research Unit in Adult Social Care

Theoretical background

- Production of welfare approach (Knapp, 1984; Malley and Fernandez, 2010)
- Resource (e.g. staffing, equipment) and non-resource inputs (user characteristics, staff attitudes) into output of home care
- Final output is the wellbeing of those using the services
- Measure of quality for the analysis: CQC quality rating
  - Positive association between residents' quality of life and care home quality ratings (Towers et al., 2019; 2021)

Data

- Adult Social Care Workforce Data Set (ASC-WDS) for 2016-2018
- Provider-level information on:
  - Quality rating: 'Inadequate'/'Requires improvement' = 0, 'Good'/'Outstanding' = 1
  - Sector, size, registration status
- Staffing data:
  - Care worker average wage, staff to service user (SU) ratio, training indicators, vacancy/turnover rates, zero-hours contracts and female staff proportions
- Matched to local area data:
  - Indicators for commissioning decisions (average LA unit cost), supply (level of competition and female JSA uptake), need (attendance allowance uptake) and wealth/income (house prices and pension credit uptake)

NIHR | Policy Research Unit in Adult Social Care

Statistical methods

- Actual quality of HC provider (q^a) is dependent on staffing factors (**S**) and other provider-level characteristics and user characteristics (**X**):

$$q_{it}^{a} = \alpha_1 + \alpha_2 \boldsymbol{S}_{it} + \alpha_3 \boldsymbol{X}_{it} + v_{it}$$

  - Observed quality (i.e. quality rating, q^o) is then dependent on the decision rule:

$$q_{it}^{o} = 0 \; if \; q_{it}^{a} < 0$$
$$q_{it}^{o} = 1 \; if \; q_{it}^{a} \geq 0$$

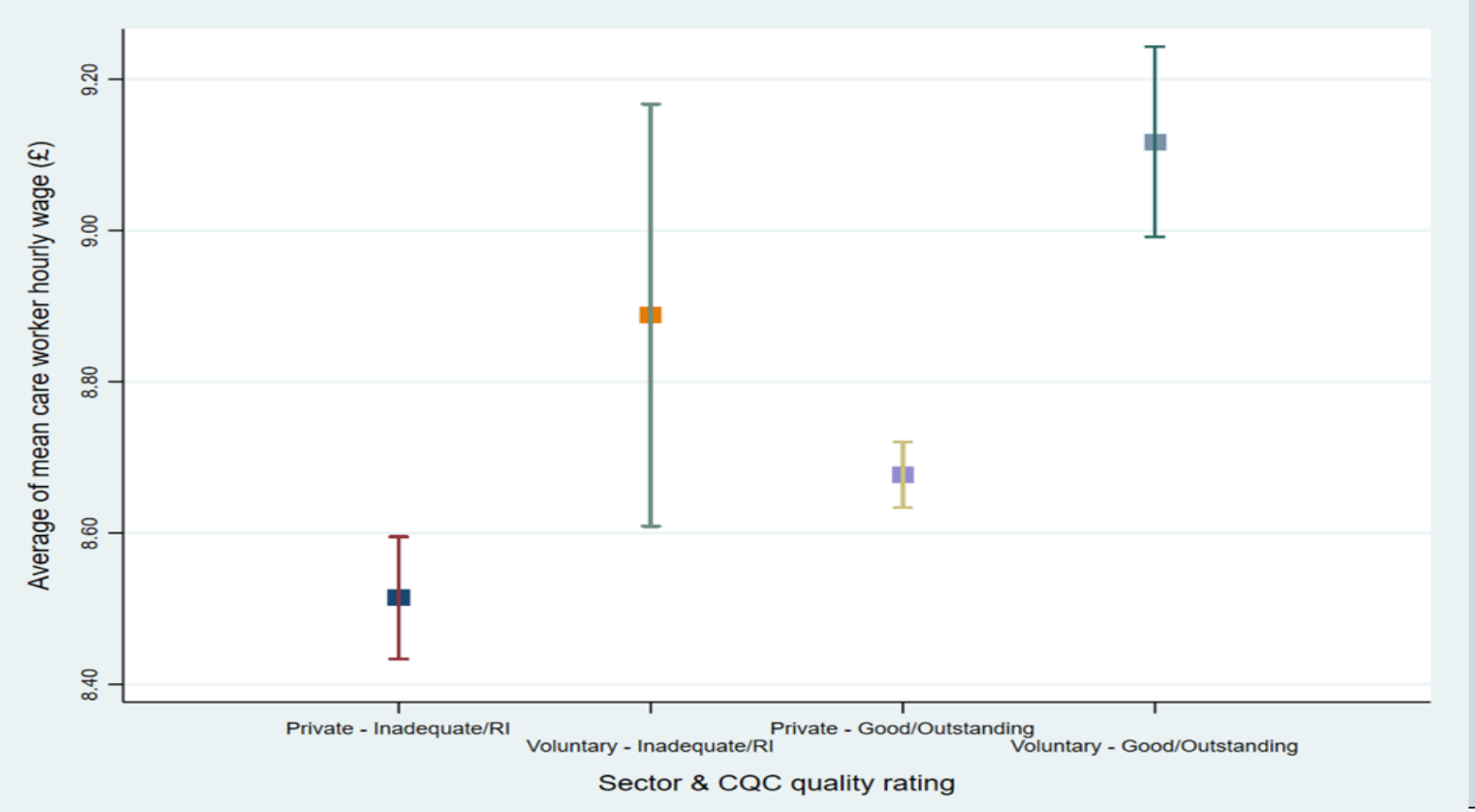
- Linear probability model (i.e. OLS) used to estimate q^o (Wooldridge, 2010)
  - Instrument for wage using exogenous changes in minimum wage
  - Used multiple imputation to address missing data
    - Staffing data unlikely to be missing completely at random (Allan and Vadean, 2021)

NIHR | Policy Research Unit in Adult Social Care

Mean sample characteristics, by quality rating

Quality	'Inadequate'/'Requires improvement'	'Good'/'Outstanding'	Test statistic
Home care provider characteristics			
Voluntary sector	0.081	0.148	-5.48***
Care for older people	0.916	0.837	6.14***
Care for dementia	0.823	0.780	2.94***
Provider size (Medium/Large)	0.430	0.372	3.35***
Competition	34.83	29.38	6.79***
Home care worker characteristics (provider level)			
Mean hourly wage	£8.55	£8.75	-4.52***
DC worker to SU ratio	0.609	0.723	-4.54***
Female employee proportion	0.872	0.869	0.46
Dementia trained staff proportion	0.276	0.288	-0.80
Dignity/PCC trained staff proportion	0.124	0.161	-2.96***
Zero-hour contracts proportion	0.566	0.428	6.45***
Turnover rate	44.87	44.15	0.35
Vacancy rate	9.57	9.36	0.35

Care worker wage, by sector and CQC rating



NIHR | Policy Research Unit in Adult Social Care

Results

	CC RE LPM	MI RE LPM	MI RE IV LPM	MI RE IV LPM (OP providers)	MI RE IV Probit
	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)
Mean hourly wage	0.022 (0.115)	0.088 (0.066)	0.190 (0.125)	0.224 (0.140)	1.092 (0.683)
DC worker to SU ratio	0.073 (0.053)	0.078*** (0.026)	0.078*** (0.026)	0.060* (0.032)	0.456*** (0.161)
DC worker to SU ratio Squared	-0.027 (0.018)	-0.018** (0.008)	-0.018** (0.008)	-0.009 (0.011)	-0.105* (0.054)
Female employee proportion	0.174 (0.119)	0.125* (0.064)	0.120* (0.065)	0.147* (0.079)	0.718** (0.357)
Zero-hour contract proportion	-0.069** (0.028)	-0.073*** (0.021)	-0.073*** (0.021)	-0.070*** (0.022)	-0.409*** (0.120)
Dementia trained staff proportion	0.0001 (0.036)	0.028 (0.022)	0.030 (0.022)	0.030 (0.024)	0.161 (0.132)
Dignity/PCC trained staff proportion	0.030 (0.039)	0.021 (0.024)	0.021 (0.024)	0.028 (0.027)	0.151 (0.157)
Turnover rate	-0.0001 (0.0002)	-0.00004 (0.0001)	-0.00003 (0.0001)	-0.00001 (0.0001)	-0.0001 (0.001)
Vacancy rate	0.001 (0.001)	0.00004 (0.001)	0.0001 (0.001)	0.0001 (0.001)	0.0003 (0.003)

NIHR | Policy Research Unit in Adult Social Care

Results

- Staffing
  - Wage not significant in affecting HC provider quality
  - Higher DC worker to Service User ratio significantly increases HC provider quality
  - Higher proportions of employees on Zero-hours contracts significantly reduces quality
- Other factors:
  - Higher quality for providers in voluntary sector and wealthier areas (some indication)
  - Lower quality for providers: registered to support older people; facing higher competition; that are medium/large enterprise (for some underlying KLOE indicators, i.e. caring/responsive)
  - LA average hourly unit cost did not significantly influence HC provider quality in multivariate model

Discussion

- Quality linked to staffing factors
  - More staff to service users increases quality
    - More frequent/longer visits, 'double-up' care
    - Effect strongest for 'Safe' KLOE
  - Higher proportion of staff on zero hours contracts reduces quality
    - Stress of ZHCs? (Ravalier et al., 2019)
- Wage not a factor in determining quality
  - Finding is different to previous care home analysis
  - Reasons?

Policy implications

- Improving recruitment and retention in social care workforce
  - Conditions of employment, e.g. contract type, an important factor driving home care quality
- Consider competition effects of growing market
  - Competition and size of provider have negative effect on aspects of quality
- Quality of service important
  - Range of high quality services available in LAs
  - Potentially influence overall public health and social care spend

NIHR | Policy Research Unit in Adult Social Care

Disclaimer

- This study is funded by the National Institute for Health and Care Research (NIHR) Policy Research Programme (Reference PR-PRU-1217-21101). The views expressed in this presentation are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

NIHR | Policy Research Unit in Adult Social Care