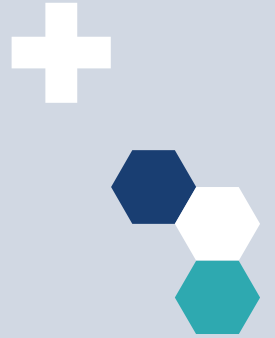
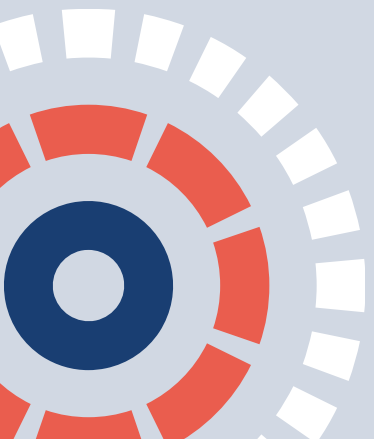


Improving social care outcomes: Do staff employment conditions make a difference? A quantitative analysis using secondary data from England.



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Disclaimer

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Introduction

- Staff play a key role in supporting people requiring long-term care (Donabedian, 1988)
- Emerging evidence on the importance of pay and conditions as drivers of labour supply (Moriarty et al., 2018; Vadean & Saloniki, 2021; Vadean et al., 2024)
- Wage effects on quality of care (Allan & Vadean, 2023a; Ruffini, 2022; Cawley et al., 2006)
- Appropriately valuing improvements to pay and conditions
- We estimate the influence of staffing factors on individual care outcomes and social care-QALY gains from changes in pay



Theoretical motivation

- Care quality and productivity
 - Quality of care as element of social care productivity (Yang et al., 2017)
 - An increase in staff productivity will a) reduce time taken to complete task and/or b) increase care quality itself
 - Limits to productivity increases
- Care quality and staffing
 - Link wage, training and contract type to care quality via labour economic theory
 - E.g. efficiency wage theory (Allan and Vadean, 2023a)



Data – Adult Social Care Survey

- Adult Social Care Survey data for 2017-2019 & 2021
 - Annual survey of adults 18+ that are supported by public funds through LAs
- Data on: Support setting, age, gender, ethnicity, needs (ADL count), self-rated health, unpaid care support, primary support reason and funding situation (i.e. private top-up)
- Social care-related quality of life (SCRQoL) – ASCOT
 - Eight domains with four outcome states: ideal state (all needs met), no unmet needs, some unmet needs, and high unmet needs
 - ASCOT is preference weighted, i.e. can be converted into social care-QALY (Netten et al., 2012)
 - Values ranging from -0.171 (worse than dead) to 1



Data - Workforce

- LA-level estimates of workforce and conditions provided by Skills for Care
 - Using Adult Social Care Workforce Data Set (ASC-WDS)
- Data available on average hourly pay, training (percentage of staff with relevant social care qualifications) and contract type (percent of workers employed on a ZHC).
- We matched data for independent sector care workers only to ASCS data by year, LA and setting
 - To minimise differences in staff quality, e.g. type and sectoral differences
 - Also controlled for average age, gender (% female), nationality (% British), and average experience in social care



Data – Controls at LA-level

- Wealth/income: Income support & pension credit uptake, house ownership rates, self-funding estimates (latter for 2019 & 2021)
- Needs: Living alone (%) and Disability Living Allowance (DLA) & Attendance Allowance (AA) uptake
- LA population/policy: Population (density) and local authority adult social care expenditure per person receiving care
- Labour supply: Median wage of all workers in the LA
- Unpaid care: Carer-related measures from Survey of Adult Carers in England (SACE)



Methodology

- Estimated a model of SCRQoL:

$$SCRQoL_{ij} = \alpha_{ij} + \beta I_{ij} + \gamma A_j + \varphi S_j + \mu_{ij}$$

- Where quality of life depends on person-level (I) and LA-level (A) characteristics in addition to staffing characteristics (S)
- Staffing measures at LA-level – should control for endogeneity as natural spatial instrument
- We controlled for clustering of outcomes at LA-level using multi-level models.
 - Not significant difference to OLS models
- Estimate model using pooled data and for individual years



Amount of care

- No measure of amount of care in model
 - Impact on quality of life
- Assumed that other controls act as proxies in the model
 - e.g. number of ADLs, care top-ups, age, support setting, primary care reason
- Estimate model with and without amount of care proxy controls
 - Expect estimated effect to fall (bias towards zero)



Estimating QALY gains and cost per QALY

- Assumed LAs paying a higher average wage as an ‘intervention’,
 - Control group: LAs paying national average wage
- Average QALY gain per care recipient for £0.25, £0.50, £0.75 & £1 higher wage estimated from model
 - Estimated a range of confidence in these figures
- Total QALY gain for average LA at each wage calculated using Short and Long Term Care (SALT) data on people receiving support
- Wage costs per person supported estimated using number of FTE care workers in average LA for each wage increase
 - Ignored knock-on increases in costs to providers (e.g. pensions, NI, pay differentials)



Incremental cost effectiveness ratios (ICERs)

- Calculated ICER for each 'intervention' compared to control group
 - Equal to difference in wage cost per person supported divided by QALY gain per person in 'intervention'
- Using assumed comparability we compared across 'interventions' to assess which was more cost effective



Descriptive statistics – individual level

	2017	2018	2019	2021
Care recipient level				
Social Care Related Quality of life	0.781 (0.209)	0.778 (0.213)	0.777 (0.214)	0.749 (0.224)
Primary support reason (Physical = 0 / Other = 1)	0.231 (0.422)	0.229 (0.420)	0.209 (0.407)	0.204 (0.403)
Independent ADLs (0-7)	3.62 (2.22)	3.56 (2.20)	3.58 (2.19)	3.62 (2.22)
Top-up care (No = 0/ Yes = 1)	0.413 (0.492)	0.417 (0.493)	0.418 (0.493)	0.425 (0.494)
Health (Very bad = 1 to 5 = Very good)	3.09 (0.99)	3.07 (1.00)	3.08 (0.99)	3.01 (1.01)
Informal care (No = 0 / Yes = 1)	0.848 (0.359)	0.849 (0.358)	0.849 (0.358)	0.842 (0.365)
Ethnicity (White = 0 / Not white = 1)	0.104 (0.306)	0.110 (0.313)	0.101 (0.301)	0.114 (0.318)
Age (18-64 = 0 / 65+ = 1)	0.749 (0.434)	0.753 (0.431)	0.756 (0.430)	0.733 (0.422)
Gender (Male = 0 / Female = 1)	0.668 (0.471)	0.664 (0.472)	0.667 (0.471)	0.662 (0.473)
Support setting: Residential care home (ref Community)	0.234 (0.424)	0.247 (0.431)	0.232 (0.422)	0.145 (0.352)
Support setting: Nursing care home (ref Community)	0.074 (0.262)	0.073 (0.260)	0.086 (0.280)	0.048 (0.214)



Descriptive statistics – staffing at LA-level

Staff characteristic	Setting	2017	2018	2019	2021
Average hourly pay	Non-residential	8.21 (0.42)	8.54 (0.41)	8.93 (0.39)	9.78 (0.40)
	n	144	146	146	148
	Residential care home	7.94 (0.35)	8.25 (0.32)	8.62 (0.32)	9.45 (0.28)
	n	146	143	143	144
	Nursing care home	7.79 (0.26)	8.12 (0.23)	8.50 (0.26)	9.39 (0.28)
	n	134	133	127	136
Proportion with Zero-Hours Contract	Non-residential	0.602 (0.185)	0.592 (0.194)	0.589 (0.183)	0.575 (0.192)
	n	129	132	130	136
	Residential care home	0.116 (0.060)	0.110 (0.053)	0.108 (0.054)	0.113 (0.055)
	n	149	148	147	147
	Nursing care home	0.100 (0.060)	0.096 (0.057)	0.090 (0.046)	0.094 (0.053)
	n	145	147	145	147
Proportion with social care qualification	Non-residential	0.455 (0.114)	0.450 (0.114)	0.419 (0.115)	0.403 (0.115)
	n	146	148	147	150
	Residential care home	0.566 (0.114)	0.550 (0.116)	0.535 (0.120)	0.486 (0.141)
	n	141	143	140	149
	Nursing care home	0.494 (0.182)	0.486 (0.189)	0.485 (0.173)	0.434 (0.176)
	n	143	148	146	145



Results

Table 7: OLS results of estimation of social care related quality of life, model 1, by year

	2017	2018	2019	2021	Pooled
Setting: All					
Average hourly pay	0.009 (0.008)	0.021** (0.010)	0.011 (0.014)	0.025** (0.010)	0.012** (0.005)
Proportion with Zero-Hours Contract	-0.016 (0.018)	0.001 (0.016)	-0.061** (0.024)	-0.017 (0.016)	-0.010 (0.011)
Proportion with social care qualification	-0.007 (0.023)	0.008 (0.023)	-0.013 (0.024)	0.040* (0.021)	0.009 (0.011)

- Size of effect: £1 average hourly wage rise increases SCRQoL by 0.012 (1.6% of average SCRQoL)
- Average hourly pay coefficient of 0.003 ($p=0.659$) when care receipt proxy variables not included (pooled CS)



Cost effectiveness – All settings

	Average hourly pay	AHP + £0.25	AHP + £0.50	AHP + £0.75	AHP + £1
Pooled cross section					
QALY (adjusted mean)	0.770 (0.767 – 0.773)	0.773 (0.769 – 0.776)	0.776 (0.771 – 0.781)	0.779 (0.772 – 0.787)	0.783 (0.772 – 0.794)
Outcome vs control (per person)		0.003** (0.0003 – 0.005)	0.006** (0.001 – 0.010)	0.009** (0.002 – 0.016)	0.013** (0.003 – 0.023)
cost vs control (per person, £)		374.41	748.83	1,123.24	1,497.66
ICER (£ per QALY)		140,386	131,027	122,834	115,606

- Home care setting, ICER ranges from £82,000 (£0.25 per hour) to £53,000 (£1 per hour).
- Care homes settings, interventions dominated by control



Discussion

- Policies aimed at improving retention and filling staff vacancies could have knock-on effects on quality of care
- We have found evidence to support this – increasing wages improves individual outcomes
 - Size of effect small – to be expected given level of staffing data?
- Cost-effectiveness estimates
 - Exploratory, but first for England
 - Important for policy decisions



Limitations

- Little evidence of diminishing marginal returns
- More granular staff data required to confirm these findings
- Potential limitation of lack of data on care receipt
- Not able to discern reasons for higher pay – research required on LA wage policy and its effects
- Exploratory cost-effectiveness analysis
 - Does not include staffing outcomes
 - Only direct hourly wage costs considered
 - Effect on self-funders?



Thank you!

