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25 / 06 / 24

Home Care Optimisation

Health Innovation
West of England

Why home care needs fixing

1. 500,000 people are on waiting list for homecare (Care Quality Commission)
2. 28% of home care staff leave every year (Skills for Care)
3. Delayed discharge from hospital is costing the NHS £2 billion per year (King's Fund, March 2023)

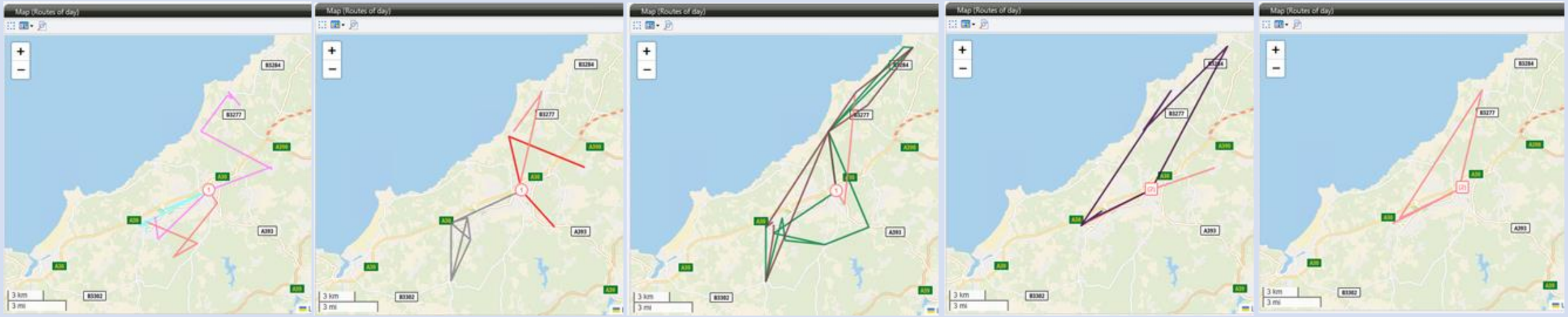
Home Care Programme Overview

Original aim	Supporting the domiciliary care **workforce**
Partners	Health Innovation West of England, Health Innovation South West and Health Education England
Innovator	Procomp (Finnish, AI logistics planning and optimisation company) and now on the **NHS Innovation Accelerator**
Subsequent aims	Making home care more effective and efficient
Pilot	Strategic optimisation (for local authorities) and some operational planning (with domiciliary care providers).
Hosts	Bristol City Council, Cornwall Council, NHS Kernow and domiciliary care providers in Bristol and Cornwall
Evaluator	Unity Insights; evaluating changes in the real-world

Issue 1: Manual planning = every day is different

Example: Monday to Friday, service users planned visits

Service user is located at point (1) on the map.



General findings:

- Rounds are different every day
- Poor continuity of care worker (example above 9 workers in the week)
- Variation in visit start time (by up to 4 hours)
- Some visits cut short

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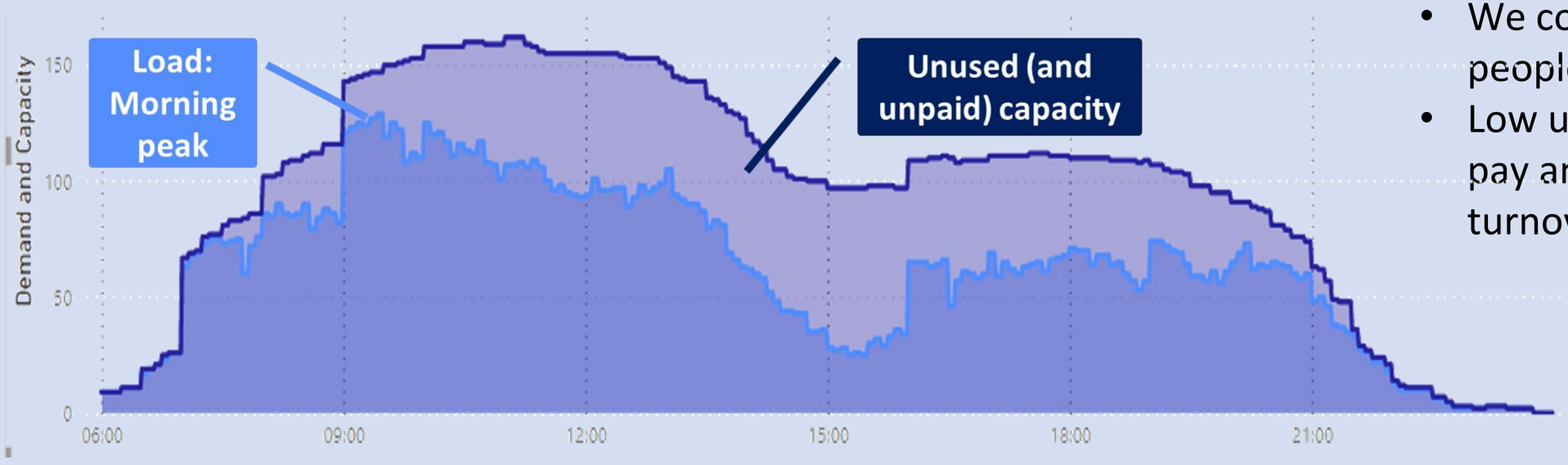
Issue 2: Care Workers Poorly Utilised

Example: Data from 6 providers over 1 day
Workforce under-utilised by 35%



General findings:

- The headline “shortage of 165,000 care workers” (Source: Skills for Care) is only accurate if we continue to poorly utilise the workforce
- We continue to throw people at the problem
- Low utilisation, leads to low pay and high worker turnover

In homecare, inefficiency is paid for by the care workers

Issue 3: High number of double-ups

40-50% of visits were double ups
(in Finland it’s 3%)

Issue 4: UK Domiciliary Care Workers Drive 1.5 Billion Miles Per Year

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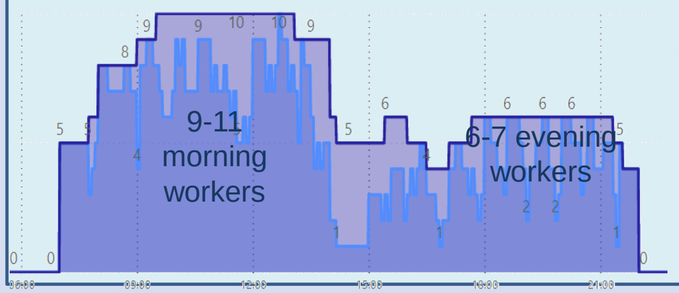
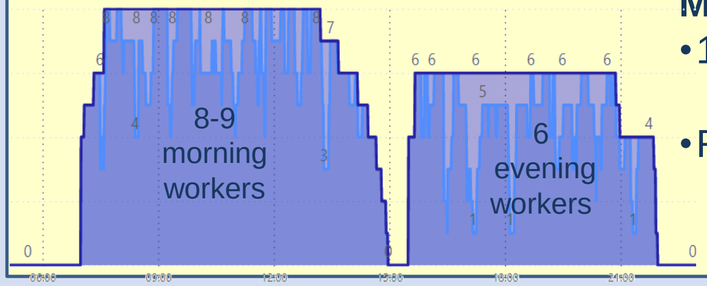
- Care workers drive 4 million miles per day (Source: Homecare Association)
- Can be overlooked in Net Zero plans

Solution 1: Flexible Visit Time + Optimisation



Actual: Baseline (based on analysis of existing plans over 7 days)

- 2480 miles: 2.9 miles per visit
- Sharp peaks and corresponding troughs in the load profile
- Insufficient travel time, i.e. visits cut short



Model A: +- 45 minutes visit start-time flexibility and using Procomp software

- 1670 miles: 1.9 miles per visit (33% reduction)
  - 9% increase in service time (47 hours) as full travel time now planned
- Releases ~20% additional capacity to deliver more home care

Model B: Morning, Lunch, Tea, Bed timeframes and using Procomp software

- 1502 miles: 1.75 miles per visit (39% reduction)
  - 9% increase in service time (47 hours) as full travel time now planned
- Releases ~34% additional capacity to deliver more home care

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Solution 2: Shaping the market

Providers' current routes

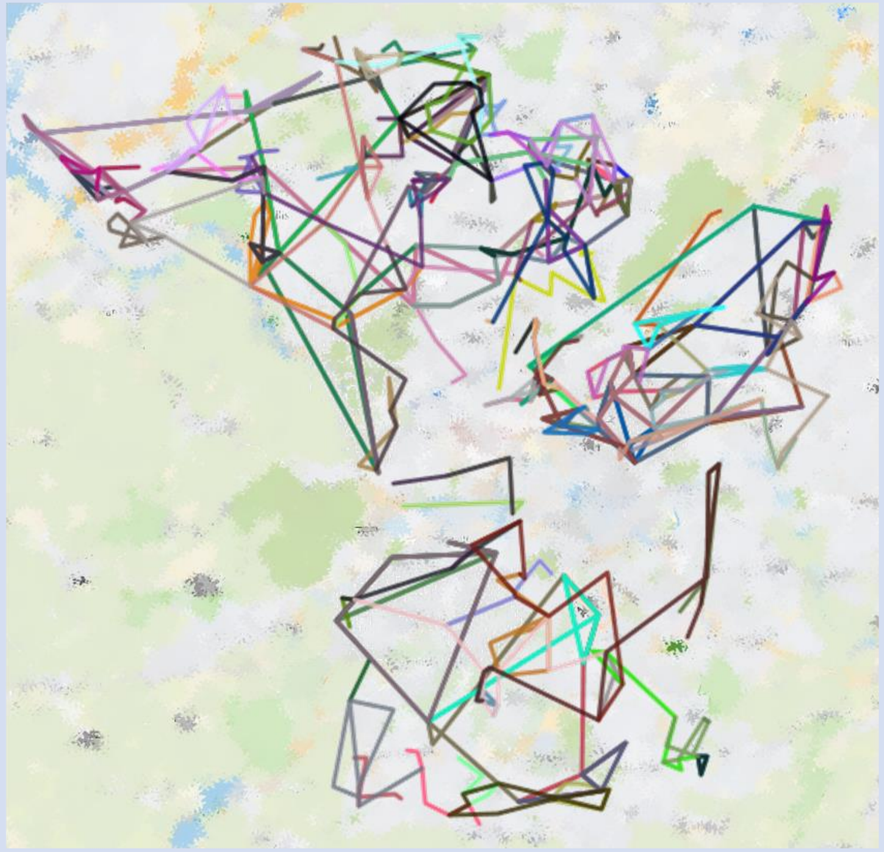
(6 providers, ~60 % of care packages)

Many overlapping routes

Routes with 3 consolidated areas

Mileage reduced by 65 %

35 % fewer care workers needed each day



Modelled:

- 10'500 visits
- 7'500 hours

Results:

- 118 care workers in morning
- 75 workers in evening
- 0.45 miles/visit (from 1.33)
- 4,700 miles (from 13,800 miles)
- 300 hours additional service time due to full travel time and no overlaps

100% of data shows 85% mileage reduction possible (care workers travelling 7x further than need to)

Recommendation

Local authorities, community health services, and other NHS organisations should analyse their data, establish strategic goals, and implement operational optimisation tools to enhance efficiency and outcomes and reduce travel.

In homecare, a smaller, better trained workforce (perhaps on shift pay) with higher retention, delivering better care is possible with better worker utilisation

Find out more

- News story and evaluation report: https://www.healthinnowest.net/news/trial-of-ai-based-optimisation-technology-demonstrates-opportunities-for-the-domiciliary-care-sector-to-transform-provision-of-homecare/
- Happy to meet and discuss further
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