**Supplementary material**

Here we provide some further details for the network construction algorithm.

* Number of households receiving care, $N\_{HH}$;
* Number of full-time ($N\_{FTCW}$) and part-time ($N\_{PTCW}$), giving $N=N\_{HH}+N\_{FTCW}+N\_{PTCW}$ nodes in the network;
* Distribution of the number of visits a household or client receives/needs $=1=Bin(3,μ=2/3)$, which then translates to numbers drawn from this distribution, i.e. $N\_{visits\_{HH}}^{i}$, where $i=1,2, …, N\_{HH}$;
* Number of visits by full-time care workers is $n\_{FTCW}$ and it is $n\_{PTCW}$ for part-time care workers;
* We now allocate a proportion $p\_{FTCW}=n\_{FTCW}N\_{FTCW}/(n\_{FTCW}N\_{FTCW}+n\_{PTCW}N\_{PTCW})$ of all household stubs to full-time care workers and the remaining ones to part-time care workers. At this point the stubs are not yet allocated to care workers.
* The number of visits made by care workers is now allocated based on $N\_{visits\_{FTCW}}=floor\left(\left(\sum\_{i=1}^{N}N\_{visits\_{HH}}^{i}\right)×p\_{FTCW}\right)+remaining-visits\_{allocated}-at-random$, with a similar formula for the part-time care workers. This means that some care workers will have $\pm 1$ or so stubs compared to $n\_{FTCW}$ or $n\_{PTCW}$. But such differences are minimised by a careful choice of the number of care workers of different type;
* Create a list/array by placing copies/labels of HH in a list as many times as their number of visits requires;
* Do the same for full-time and part-time CW in a different list;
* Pick elements at random from both lists and connect them up;
* This will produce a network where most links have only been realised once, with some duplicate links occurring;
* This is then refined to allow multiple links between the same household and CW leading to weighted edges. This is done as follows. Once a HH and a CW is connected, the algorithm looks for any of stubs belonging to the same HH and CW and connects them with probability $p\_{overlap}$.