



Improving the Delivery of End of Life Care

Following NHS reform, West Kent, a newly formed CCG, wanted to improve services for people at the end of their life including enabling people to die in the place of their choice, which for many people would be their own home.

With the support of the NHS Institute for Innovation and Improvement and SIMUL8 Corporation, West Kent CCG brought together a wide group of stakeholders and used simulation to help develop a greater understanding of the current use of services and which interventions would best help them to achieve their aims.

Working through a series of workshops, the stakeholders developed a simulation pathway in Scenario Generator software to represent the services accessed by people in the last year of their life that helped to define the End of Life Care strategy for the CCG.

“It helped me step back from my part of the service and really understand the challenges people face and the services people access as move through the pathway.”

Hospice Worker, West Kent

Simulating End of Life Care in West Kent

There are many healthcare professionals that can be involved in providing end of life care, depending on the needs of the patient. Hospital doctors and nurses, GPs, community nurses, hospice staff might all be involved, as well as social services.

In deciding to improve this service for their community, West Kent needed to be sure of the impact any change would have on each service in this complex network.

Understanding the current process

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Working through a series of workshops, the stakeholders developed a simulation pathway to represent the services accessed by people in the last year of their life.

The pathway helped everyone to understand what services were being used and the relationships between the different providers. One important question was to understand the difference between the services accessed by someone who was registered as being at the end of their life, and someone who wasn't.

Age Banding Ratio											
0+	1 - 4	5 - 15	16 - 19	20-24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
0.06	0.00068	0.00021	0.00054	0.00055	0.00043	0.00088	0.00086	0.0011	0.012	0.042	0.119

Figure 1. SIMUL8 data entry screen showing death rates by age band

The National End of Life Care Programme

The National End of Life Care Programme working with Whole Systems Partnerships had based their modelling using published research on functional decline which shows that there are different patterns of decline depending on disease type and/or cause of death.

West Kent CCG wanted to use the same assumptions, and undertook an in depth analysis of their Primary Care Mortality database using similar categories. The results showed that the proportion of deaths in these categories tended to stay the same over time.

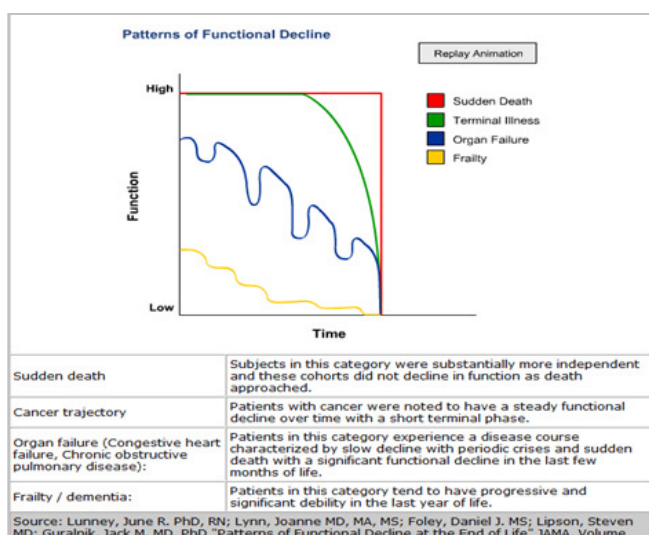


Figure 2.

WK CCG Mortality Data 2010/11 and 2011/12				
	%			
	2010/11	2011/12	2010/11	2011/12
All deaths	3768	3659		
Deaths from Organ Failure	1194	1111	32	30
Deaths from Cancer	1083	1086	29	30
Other Deaths	815	793	22	22
Death from Frailty	557	563	15	15
Deaths Other Terminal	23	20	1	1
Sudden Deaths	96	86	3*	2*

Figure 3.

For deaths from Organ Failure, Figure 5, on the other hand, a much greater proportion die in hospital.

Key Findings

This finding led West Kent to make their first big decision. They would concentrate initially on trying to improve the pathway for deaths from organ failure (or people with long term conditions) given that this was the biggest group of deaths and the group most likely to die in hospital.

West Kent data showed that over 70% of people on the End of Life Care Register were cancer patients, which helped to explain the difference in the types of care and place of death between organ failure and cancer death groups.

This led to a helpful discussion about the difficulties of identifying end of life patients with long term conditions and to the “light-bulb” moment that planning for good end of life care for this group of patients involved the same interventions as good long term conditions care.

The key interventions for improvement interventions were agreed to be:

- An electronic data-sharing system across providers
- A 24/7 Rapid Response Service

Cancer Place of Death		%
UPR	Home	20.31
	Care Home *	4.55
	Hospital	0.00
Other Place	Care Home *	9.02
	Hospice	29.51
	Hospital	34.97
	Other	1.64

Figure 4.

*Note : in tables in Figure 4 and Figure 5 care homes appear twice. A distinction has been made between deaths in care homes where the care home is the usual place of residence, and deaths in care homes where this is because it has been recognised that the person is in need of end of life care.

Organ Failure Place of Death		%
UPR	Home	23.57
	Care Home	8.67
	Hospital	0.09
Other Place	Care Home	5.20
	Hospice	2.17
	Hospital	57.89
	Other	2.43

Figure 5

Experimenting with change

What if a 24/7 rapid response service, including availability of emergency oxygen, IV fluids and antibiotics, and carer support were available in the community?

Assessing the impact on Social Care

Kent County Council was keen to understand the possible impact of changing health services on the need for social care. It was assumed that if more people died at home, then more social care support, as well as community nurse support might be required. The model was extended to show these impacts.

The following scenarios were tested in the simulation shown in Figure 6:

- What if more patients were identified as being at the end of life and 60% of patients were identified as being at the end of their life?
- What if an electronic data-sharing system was in place and 80% of patients used it, avoiding unnecessary hospital admission?
- What if a 24/7 rapid response service, including availability of emergency oxygen, IV fluids and antibiotics, carer support were available in the community and was accessed by 50% of patients not on the End of Life Register?

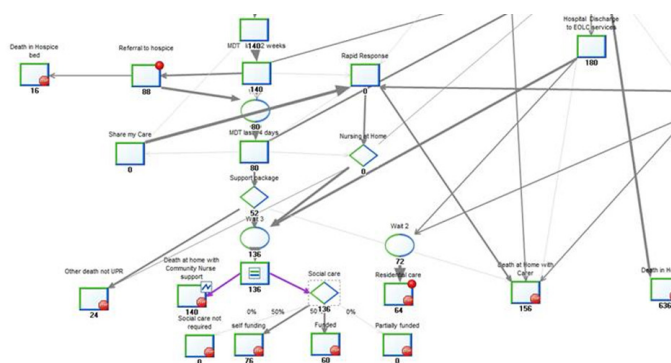


Figure 6 - West Kent Simulation

Simulation Results

Scenario	Death at home with carer	Death at home with nursing support	Death at home with social care support	Hospital Admission	Death in Hospital	Death in residential care not UPR	Rapid Response Activity	Death in Hospice	£m	Social care £
Baseline	133	139	127	841	668	64	0	23	£3.3	74.9k
60% of patients on EoLC register (680)	63	207	188	716	570	53	0	88	£3.14	86.4k
50% of patients not on EoLC register use Rapid Response Service	357	265	242	412	326	30	445	23	£2.7m	87.8k
80% of patients on EoLC pathway use electronic data-sharing	203	160	147	770	612	58	137	4	£3.12m	76k
60% of patients on EoLC register (680) + 80% of patients using E d-s	318	289	262	444	352	33	510	17	£2.93m	95.5k
60% of patients on EoLC register (680) + 80% of patients using electronic data-sharing + 50% of patients not on EoLC register use Rapid Response Service at Exacerbation	425	343	313	243	193	18	719	17	£2.67m	100k

Conclusions

Following this work the key elements of the End of Life Care strategy were agreed to be the development of an electronic data-sharing system between partners and a 24/7 Rapid Response service.

The group agreed that good Long Term Conditions care will also be good End of Life care, and joint business cases for both interventions are currently being developed.

More action was agreed to be necessary to identify End of Life care patients from the long term conditions group, and risk profiling is expected to help.

For more information on the project and using simulation to improve End of Life Care services please contact:

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“It’s a great way of focusing on the things we can do that will really make a difference. We would definitely use simulation again when working through an issue like this.”

West Kent CCG
