

Improvements in End-of-Life Care with a Protocol-based Pathway for Cancer Patients Dying in a Singapore Hospital

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Abstract

Introduction: More than half of all deaths in Singapore occur in hospitals. Little is known about the quality of care received by dying patients in hospitals. The Liverpool Care Pathway (LCP) provides a framework of providing good end-of-life care for dying patients and has been used with success in the United Kingdom (UK). In this study, we investigate whether adoption of a modified LCP in a Singapore hospital translated to better end-of-life care for cancer patients. **Materials and Methods:** The LCP was adapted and implemented as a pilot project on an oncology ward in Singapore General Hospital. A baseline review of 30 consecutive death records was performed, followed by a 4-month pilot and post-implementation audit of 30 consecutive patients on the adapted LCP. **Results:** Five types of end-of-life symptoms were analysed. There was only 1 uncontrolled symptom at death in the post-implementation group compared to 24 uncontrolled symptoms in the retrospective audit group. The prescription of breakthrough medications for symptom control increased from 21% in the retrospective audit group to 79% in the post-implementation group. Inappropriate monitoring was discontinued in 25 patients in the post-implementation group compared to none in the retrospective audit group. The documentation of resuscitation status and religion of the patient was improved, achieving full documentation in the post-implementation group. **Conclusion:** This study shows promising results for improving end-of-life care in cancer patients with a protocol-based pathway in a Singapore hospital. Extension of this care pathway to other settings should be explored to maximise its benefits to patients dying from all causes in hospital.

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Key words: End-of-life care, Liverpool Care Pathway, Symptom control

Introduction

In 2010, there were 17,125 recorded deaths in Singapore, of which 9893 (55.3%) occurred in public sector hospitals.¹ Singapore General Hospital (SGH) is the largest tertiary public sector hospital in Singapore with more than 1500 beds.² Between January 2010 and December 2010, 19.5% (434/2218) of all deaths in the hospital occurred in the medical oncology ward in SGH (Singapore General Hospital, unpublished data). To date, there is scant data regarding the quality of end-of-life care received by patients in Singapore. One study of elderly dying patients in Singapore showed that end-of-life care received in hospital significantly improved with specialist palliative care input.³

The Liverpool Care Pathway for the Dying Patient (LCP)

has been recognised as the gold standard for end-of-life care for dying patients in the United Kingdom (UK).⁴ The LCP gained National Health Service (NHS) beacon status in 2000 and has been recommended by the National Institute of Clinical Excellence (NICE) in 2004 as a framework that enables the hospice approach to care of the dying to be implemented in all care settings.^{5,6} The importance of the LCP was further affirmed by the UK Government White Paper in 2006.⁷ In the UK End of Life Care Strategy published in 2008, palliative care teams were strongly recommended to ensure that the LCP is adopted within their practice.⁸

In 2007, the Care of the Dying clinical coordinated Pathway (CDP) was adapted from the LCP with the aim

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of providing better symptom control and overall care for dying patients in a Singapore hospital. A pilot project was initiated in a medical oncology ward in SGH to assess whether the adoption of the CDP translated to better end-of-life care to dying patients. The ultimate aim of the CDP is to improve and standardise the level of care rendered to all dying patients in SGH.

Materials and Methods

The project was conducted in 4 phases. In the first phase, the LCP was adapted for local use together with identified stakeholders in the project, namely 4 oncology ward nursing officers, 1 medical oncologist, 1 CDP nurse coordinator, 1 hospital quality management staff and members of the specialist palliative care team. Minor adaptations were made from the original LCP version (Appendix 1), such as removal of goals of care associated with communication with the general practitioner (GP) practice, which is less relevant to our local practice where unlike in the UK, GPs do not play a central coordinating role.

A retrospective audit of 30 consecutive deaths in the inpatient oncology ward was carried out between May 2007 and July 2007 in the second phase, looking at care received in the last 48 hours of life. This was done using the LCP baseline audit tool, which looked at the level of documentation (e.g. resuscitation status, religion, recording of next-of-kin contact information, whether family wanted contacting overnight should the patient deteriorate) as well as physical comfort (e.g. whether patients were assessed for symptoms, number of common end-of-life symptoms experienced on initial assessment and prior to death, whether actions were taken to alleviate symptoms and if these actions were subsequently reviewed for effect, anticipatory prescribing of medications and discontinuation of inappropriate treatments).

In the third phase, the modified LCP was introduced to the medical oncology team as well as the ward nurses with the help of a palliative care physician and a CDP nurse coordinator. The educational sessions involved 2 lectures each lasting about 60 minutes, one outlining holistic care for the dying and the other focusing on the practical use of the CDP. These lectures were delivered to doctors in medical oncology and nurses.

The fourth phase began with the recruitment of 30 patients onto the CDP between November 2007 and February 2008. During this period, our nurse coordinator was in the wards to guide the teams in initiating the use of CDP and documentation. The palliative care team was also onsite to provide advice as needed. A post-implementation audit was subsequently performed on these 30 patients, looking at similar parameters as the baseline audit. Comparison

of pre- and post-implementation data was analysed using Microsoft Excel.

Results

Patient Characteristics

In the retrospective audit group of 30, the mean age of patients was 60.5 years and 16 were males. There were 25 Chinese, 4 Malays and 1 Indian. Fifty-seven percent had a length of stay between 1 and 7 days, 13% between 8 and 14 days and 30% more than 15 days.

The first 30 patients in the post-implementation group were recruited onto the CDP between November 2007 and February 2008. The mean age of patients in this group was 62.8 years and 13 were males. The CDP group consisted of 26 Chinese, 3 Malays and 1 Indian. Forty percent had a length of stay between 1 and 7 days, 33% between 8 and 14 days, and 27% more than 15 days. Of the 30 patients recruited onto the CDP, 3 were discharged home while the rest passed away in the hospital. Table 1 summarises the comparison of baseline characteristics between the 2 groups, which was similar. The mean number of days on CDP was 2.3 days, with a range of 3 hours to 12 days, whilst the median number of days on CDP was 1 day. Eight patients received palliative care input in the retrospective audit group, as compared to 15 patients in the CDP group.

Physical Comfort

For symptoms experienced by patients at end-of-life, 23 patients (77%) in the retrospective audit group had dyspnoea on initial assessment, while 11 (37%) had pain, 6 (20%) respiratory tract secretions (RTS), 3 (10%) restlessness and 3 (10%) nausea/vomiting. Around the time of death, 12 patients (40%) experienced dyspnoea, 6 (20%) respiratory

Table 1. Patient Characteristics in the Retrospective Audit and Post-Implementation Groups

Characteristics	Retrospective Audit Group n = 30	Post-implementation Group n = 30
Mean Age	60.5 years	62.8 years
Gender	16 males 14 females	13 males 17 females
Ethnicity	25 Chinese 3 Malays 1 Indian	26 Chinese 4 Malays 1 Indian
Length of Stay		
1 to 7 days	57%	40%
8 to 14 days	13%	33%
>15 days	30%	27%

tract secretions, 3 (10%) pain and 3 (10%) nausea/vomiting.

In the post-implementation group, the number of symptoms on initial assessment upon initiating CDP were 17 (57%) for dyspnoea, 7 (23%) pain, 9 (30%) RTS, 4 (13%) restlessness and 4 (13%) nausea/vomiting. This was subsequently lower at time around death, where only 1 patient experienced nausea/vomiting. Figure 1 summarises the comparison of the number of symptoms between both groups on initial assessment and at time around death. The differences observed in total number of symptoms experienced at time around death between the retrospective cohort and the post-implementation cohort are significant, as evidenced by the 2 proportion Z test at $\alpha = 0.05$, $P = 0.0015$.

All patients were assessed for symptoms during their admission and had action taken to alleviate symptoms when present. There was also documentation that the action taken to alleviate symptoms was subsequently reviewed for effect. This was similar between both baseline audit and post-implementation groups.

For anticipatory prescription of medications, as and when necessary pro re nata (PRN) prescriptions for the 5 common

end-of-life symptoms increased from 29% in the baseline audit group to 71% in the post-implementation group. Figure 2 shows the comparison data for PRN prescription in both groups. The differences observed in the prescription of breakthrough medication for symptom control between the retrospective cohort and the post-implementation cohort are significant, as evidenced by the 2 proportion Z test at $\alpha = 0.05$, $P \text{ value} = 0.0011$.

With the CDP, consideration of discontinuing non-essential monitoring and non-essential oral medications are encouraged, so as to maximise comfort to the patient. Twenty-five patients in the post-implementation group had blood pressure (BP) and pulse oximetry recordings discontinued, as compared with none in the baseline audit group. The differences observed in discontinuation of inappropriate monitoring between the retrospective cohort and the post-implementation cohort are significant, as evidenced by the 2 proportion Z test at $\alpha = 0.05$, $P \leq 0.0001$. In contrast, fewer patients in the post-implementation group had non-essential drugs stopped, as compared to the baseline audit group (23 vs 26 patients). The post-implementation

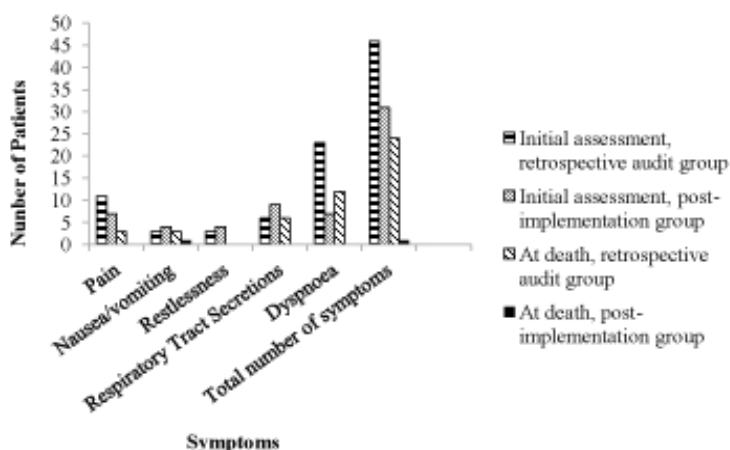


Fig. 1. Number of symptoms present at initial assessment and at death.

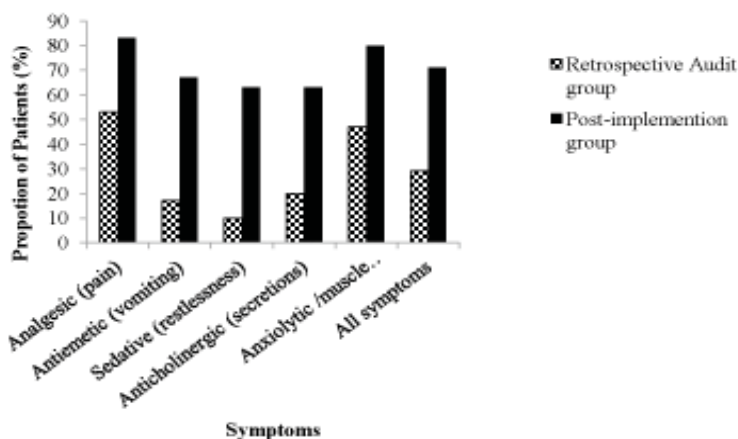


Fig. 2. Comparison of anticipatory prescription of medications in the retrospective audit and post-implementation groups.

cohort had 6 out of 7 patients continued on antibiotics because of underlying chest infection ($n = 3$), physician's preference ($n = 2$) and family's request ($n = 1$). One of these 7 patients had medications continued due to availability of nasogastric (NG) tube, resulting in less consideration for stopping oral medication.

Level of Documentation

With regard to documentation of care, all patients in the post-implementation group had their religion recorded clearly, compared to 28 in the baseline audit group. All patients had their next-of-kin's contacts and on whether family wanted contacting overnight documented in both study groups. All patients in the post-implementation group (as compared to 29 in the baseline audit group) had decisions of 'not to resuscitate' documented.

Discussion

Integrated care pathways were introduced in the United States more than 20 years ago with the aim of improving healthcare services in terms of evidence-based practice and appropriate resource allocation. Several versions of end-of-life clinical pathways exist around the world.⁹⁻¹³ However, few have achieved the worldwide reach of the UK LCP, which has been officially adopted in at least 17 different countries.¹⁴ In Singapore, the LCP has been adapted for use in several care settings in the last decade, extending its reach to hospital services, inpatient hospice and home care. In our large tertiary hospital, implementation of the Care of the Dying Pathway was done in a stepwise fashion involving one medical discipline at a time, so as to improve dissemination of education on care of the dying.

In this pilot study, the baseline characteristics of the retrospective audit and post-implementation groups were similar, affording a good basis for comparison between the 2 groups. There was only 1 uncontrolled symptom at death in the post-implementation group compared to 24 uncontrolled symptoms in the retrospective audit group. The 42% increase in prescription of breakthrough medications for symptom control in the post-implementation group meant that patients who develop the 5 common end-of-life symptoms have improved access to medications when required. Inappropriate monitoring was discontinued in 25 patients in the post-implementation group compared to none in the retrospective audit group, which serves to ensure a less intrusive care environment for the patient at end-of-life. Notably, fewer patients in the post-implementation group had non-essential drugs stopped, largely due to the fact that antibiotics were deemed necessary. This reflects the flexibility of the pathway in allowing clinicians to continue interventions while monitoring for response even

as the patient is dying. The documentation of resuscitation status and religion of the patient was marginally improved, achieving full documentation in the post-implementation group. The small improvement in figures reflects the high level of existing care in the medical oncology ward. These psychosocial and spiritual goals also helped to focus care on communicating with the family and providing comfort.

In comparison to the results of the UK National Care of the Dying Audit – Hospitals (NCDAH) Round 2, which is a nationwide audit of 155 UK hospitals involving 3893 patients, prescription of PRN medications was inferior in our group of patients, ranging from 63% to 83% for the 5 symptoms as compared to 72% to 90% in the UK group.¹⁵ Our lower rates of anticipatory prescription were also evident when compared to an audit in The Netherlands.¹⁶ However, these rates are similar in comparison to data from Queensland, Australia.¹⁷ On the other hand, control of end-of-life symptoms prior to death appears superior in our audit as compared to comparison data from the Rotterdam, Liverpool and Hong Kong.¹⁸ The duration of CDP use concurred with that of the NCDAH and the Hong Kong audit, where the median number of days on a similar pathway was 24 hours.^{15,18}

This study is limited by its small sample size and the use of a retrospective cohort as comparison. The increased involvement of the palliative care team in the CDP group may have contributed to the improved symptom control seen in this audit. However, as this study was not designed to determine the effect of palliative team involvement, the size of this effect remains unknown. Nonetheless, the improvements seen in the prescription of breakthrough medications and discontinuation of inappropriate monitoring in the post-implementation cohort is more likely due to the function of the CDP than the effect of palliative team involvement.

Much difficulty surrounding the use of the CDP lies in the discomfort of diagnosing dying and communicating to patients as well as family members about end-of-life issues. The hospital culture focuses on cure and as a result, a dying patient may be perceived as a failure of care. In addition, healthcare professionals who feel ill-equipped to look after dying patients may choose to continue active treatment.

In addition, there has been much controversy surrounding the use of the LCP in recent years. An article in *The Telegraph* in 2009 highlighted the concerns of a group of palliative care physicians who felt that indiscriminate use of the LCP was resulting in patients being "wrongly put on the pathway".¹⁹ Subsequent improvement of patients on pathway may often be missed by physicians who assume that these patients were deteriorating according to prediction. Concerns about patients being terminally sedated and having fluids or drugs withdrawn at end-of-life

resulting in hastening of death were also highlighted. These allegations were subsequently publicly refuted as being not accurate, with the report criticised as alarmist press coverage.²⁰ In response, the Marie Curie Palliative Care Institute Liverpool, where the LCP was pioneered, issued a statement, which further clarified issues surrounding the use of the LCP.²¹ This was followed by an editorial in the British Medical Journal (BMJ), clearing misconceptions regarding the pathway, stressing the importance of training and education in the use of a tool like the LCP.²² A subsequent study demonstrated that median doses used for agitation and restlessness at end-of-life in LCP patients were low in comparison to doses used in continuous deep sedation, refuting suggestions of sedating patients to death.²³ Despite the absence of randomised control trial data backing the use of end-of-life care pathways, the end-of-life care pathway remains an important tool to standardise care delivery, promote end-of-life education and improve patient care.²⁴⁻²⁶

Subsequent to completion of the audit cycle, a stakeholders meeting was held to identify areas for improvement in the continued use of the pathway. The results of the audit were shared with the oncology team; and nurse champions within the ward were identified. These nurse champions continued to advocate the use of the pathway within the ward as well as institute regular training programmes for new and existing staff.

Conclusion

The results of our audit show improved end-of-life care in terms of symptom control, anticipatory prescribing of medications, discontinuation of inappropriate monitoring and improved documentation of care. Implementation of the pathway has also helped to increase awareness of the needs of the dying amongst the medical oncology team. Extension of this care pathway into non-oncological settings is ongoing in order to maximise its benefits to patients dying from all causes in the hospital.

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REFERENCES

1. Singapore Demographic Bulletin, December 2010. Registry of Births and Deaths, Singapore Immigration and Checkpoints Authority. Available at: http://www.ica.gov.sg/data/resources/docs/Media%20Releases/SDB/SDB_December%202010.pdf. Accessed 7 November 2011.
2. Singapore General Hospital. Quick Facts. Facts at a glance for FY 2010. Available at: <http://www.sgh.com.sg/about-us/more-about-sgh/pages/quickfacts.aspx>. Accessed 7 November 2011.
3. Seah ST, Low JA, Chan YH. Symptoms and care of dying elderly patients in an acute hospital. *Singapore Med J* 2005;46:210-4.
4. Ellershaw J, Smith C, Overill S, Walker SE, Aldridge J. Care of the dying: setting standards for symptom control in the last 48 hours of life. *J Pain Symptom Manage* 2001;21:12-7.
5. NHS Beacon Programme 2001. NHS Beacon learning handbook: spreading good practice across the NHS. Volume 4:2001/2002. Petersfield: NHS Beacon Programme.
6. National Institute of Clinical Excellence (NICE). Improving supportive and palliative care for adults with cancer – guidance on cancer services. NICE, 2004.
7. Department of Health. Our Health, Our Care, Our Say: a new direction for community services. London: DH, 2006.
8. End of Life Care Strategy. Promoting high quality care for all adults at the end of life. UK Department of Health, July 2008.
9. Bookbinder M, Blank AE, Arney E, Wollner D, Lesage P, McHugh M, et al. Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005;29:529-43.
10. Bailey FA, Burgio KL, Woodby LL, Williams BR, Redden DT, Kovac SH, et al. Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005;165:1722-7.
11. Walling AM, Brown-Saltzman K, Barry T, Quan RJ, Wenger NS. Assessment of implementation of an order protocol for end-of-life symptom management. *J Palliat Med* 2008;11:857-65.
12. Fowell A, Finlay I, Johnstone R, Minto L. An integrated care pathway for the last two days of life: Wales-wide benchmarking in palliative care. *Int J Palliat Nurs* 2002;8:566-73.
13. Jackson K, Mooney C, Campbell D. The development and implementation of the pathway for improving the care of the dying in general medical wards. *Int Med J* 2009;39:695-9.
14. The Marie Curie Palliative Care Institute website. About us. Available at: <http://www.mcpcil.org.uk/about-us/index.htm>. Accessed 7 November 2011.
15. National Care of the Dying Audit Hospitals 2008/2009. Round 2 Generic Report. Available at: http://www.mcpcil.org.uk/pdfs/Generic_NCDAH_2nd_Round_Final_Report_PRINTABLE.pdf. Accessed 7 November 2011.
16. Veerbeek L, van Zuylen L, Gambles M, Swart SJ, van der Heide A, van der Rijt CC, et al. Audit of the Liverpool Care Pathway for the Dying Patient in a Dutch Cancer Hospital. *J Palliat Care* 2006;22:305-8.
17. Hardy JR, Haberecht J, Maresco-Pennisi D, Yates P; Australian Best Care of the Dying Network, Queensland. Audit of the care of the dying in a network of hospitals and institutions in Queensland. *Int Med J* 2007;37:315-9.
18. Lo SH, Chan CY, Chan CH, Sze WK, Yuen KK, Wong CS, et al. The implementation of an end-of-life integrated care pathway in a Chinese population. *Int J Palliat Nurs* 2009;15:384-8.
19. Kate Devlin. Sentenced to death on the NHS. *The Telegraph*. Available at: <http://www.telegraph.co.uk/health/healthnews/6127514/Sentenced-to-death-on-the-NHS.html>. Accessed 7 November 2011.
20. Joan Blakewell. The Liverpool Care Pathway brings the subject of dying into the open. Available at: <http://www.thetimes.co.uk/tto/health/article1965156.ece>. Accessed 7 November 2011.

21. Ellershaw J, Murphy D. LCP Central Team statement in response to continuing media coverage regarding care of the dying. Available at: http://www.liv.ac.uk/mcpcil/pdfs/LCP_Statement__Updated_14_Oct_2009%5B1%5D.pdf. Accessed 7 November 2011.
 22. Edmonds P, Burman R, Prentice W. End of life care in the acute hospital setting. *BMJ* 2009;339:b5048.
 23. Gambles M, McGlinchey T, Latten R, Dickman A, Lowe D, Ellershaw JE. How is agitation and restlessness managed in the last 24h of life in patients whose care is supported by the Liverpool Care Pathway for the Dying Patient? *BMJ Support Palliat Care* 2011;1:329-33.
 24. Chan R, Webster J. End-of-life care pathways for improving outcomes in caring for the dying. *Cochrane Database of Syst Rev* 2010;Jan 20:CD008006.
 25. Phillips JL, Halcomb EJ, Davidson PM. End-of-life care pathways in acute and hospice care: an integrative review. *J Pain Symptom Manage* 2011;41:940-55.
 26. Costantini M, Ottonelli S, Canavacci L, Pellegrini F, Beccaro M; LCP Randomised Italian Cluster Trial Study Group. The effectiveness of the Liverpool care pathway in improving end of life care for dying cancer patients in hospital. A cluster randomised trial. *BMC Health Serv Res* 2011;11:13.
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Appendix 1



Singapore
General Hospital
SingHealth

Care of The Dying COORDINATED CLINICAL PATHWAY	<i>Affix Patient Label here</i>												
<u>Inclusion Criteria</u> The multidisciplinary team has agreed that the patient is dying with little chance of recovery, and at least two of the following may apply. The patient is: ☐ Bed bound ☐ Semi-comatose ☐ Only able to take sips of fluid ☐ No longer able to take tablets	DRUG ALLERGY STICKER DRUG (S) ALLERGIC TO:												
Date and Time Started: _____ Primary Diagnosis: _____ Secondary Diagnosis: 1. _____ 2. _____ 3. _____ 4. _____	Known to Community Hospice: ☐ Yes ☐ No If YES, please tick one service provider ONLY: <table border="0"> <tr> <td>HOME CARE</td> <td>IN-PATIENT CARE</td> </tr> <tr> <td>☐ Assisi Hospice</td> <td>☐ Assisi Hospice</td> </tr> <tr> <td>☐ HCA Hospice Care</td> <td>☐ Dover Park Hospice</td> </tr> <tr> <td>☐ Metta Hospice Care</td> <td>☐ Bright Vision Hospital</td> </tr> <tr> <td>☐ Singapore Cancer Society</td> <td>☐ St Joseph's Home & Hospice</td> </tr> <tr> <td>☐ Agape Methodist Hospice</td> <td></td> </tr> </table>	HOME CARE	IN-PATIENT CARE	☐ Assisi Hospice	☐ Assisi Hospice	☐ HCA Hospice Care	☐ Dover Park Hospice	☐ Metta Hospice Care	☐ Bright Vision Hospital	☐ Singapore Cancer Society	☐ St Joseph's Home & Hospice	☐ Agape Methodist Hospice	
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Date and Time Exit: _____ Reason Exited Pathway (please tick): ☐ Patient Improved ☐ Discharged to Inpatient Hospice ☐ Discharged Home ☐ Transfer to Ward _____ (which is Not using this CCP)	Death details: Date and Time of Death: _____ Death checklist completed: ☐ Yes ☐ No Post Mortem: ☐ Yes ☐ No Cause of Death: _____ _____ _____ _____												

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This Coordinated Clinical Pathway is an adapted version of the Liverpool Coordinated Pathway that represents a planned programme of care for dying patients. However, the condition and needs of individual patients may differ and management may sometimes vary from this guideline to meet individual patient requirements.

Care of the Dying Coordinated Clinical Pathway

Date: ____/____/____

Section 1A	INITIAL ASSESSMENT (TO BE COMPLETED BY DOCTOR WITHIN 4 HOURS OF INITIATION OF PATHWAY)					
Physical Condition	Unable to swallow	Yes ☐	No ☐	Agitation or Restlessness	Yes ☐	No ☐
	Pain	Yes ☐	No ☐	Confused	Yes ☐	No ☐
	Nausea / Vomiting	Yes ☐	No ☐	Drowsy	Yes ☐	No ☐
	Dyspnoea	Yes ☐	No ☐	Constipated	Yes ☐	No ☐
	Respiratory tract secretions	Yes ☐	No ☐	Others (pl specify) _____	Yes ☐	No ☐
If you have charted a "No" against the Goals 1 - 6, please indicate what variance occurred / action taken						
Treatment / Interventions	Goal 1:	Current medication assessed and non-essentials discontinued				
		Appropriate oral drugs converted to SC / IV / PR route Yes ☐ No ☐ N.A ☐				
		Inappropriate medication discontinued, e.g. vitamins, lipids lowering drugs Yes ☐ No ☐ N.A ☐				
	Goal 2:	PRN SC / IV / PR medications written up for the list below (Refer to Flow Chart)				
		Symptoms	Classification			
		Pain	Analgesia	Yes ☐	No ☐	
		Nausea and vomiting	Anti-emetic	Yes ☐	No ☐	
		Agitation	Sedative	Yes ☐	No ☐	
		Respiratory tract secretions	Anticholinergic	Yes ☐	No ☐	
		Dyspnoea	Anxiolytic / Opioid	Yes ☐	No ☐	
Psychological / Insight	Goal 3:	Consider the following and discontinue if inappropriate				
		1. Blood test (including blood sugar monitoring) Yes ☐ No ☐ N.A ☐				
		2. Antibiotics Yes ☐ No ☐ N.A ☐				
		3. SC / IV fluids > 500 ml/day Yes ☐ No ☐ N.A ☐				
		4. Hourly blood pressure monitoring Yes ☐ No ☐ N.A ☐				
		5. Pulse oximetry monitoring Yes ☐ No ☐ N.A ☐				
	Goal 4:	Insight into condition assessed				
Summary		Aware of diagnosis	a. Patient	Yes ☐	No ☐	Comatose / Confused ☐
			b. Family / others	Yes ☐	No ☐	
		Aware patient is dying	a. Family / others	Yes ☐	No ☐	
	Goal 5:	Plan of care explained and discussed with				
		a. Patient	Yes ☐	No ☐	Comatose / Confused ☐	
	b. Family / others	Yes ☐	No ☐			
	c. Maximal Ward Management / Conservative Management / Do Not Resuscitate (DNR) recorded	Yes ☐	No ☐			
	d. Deactivate cardiac defibrillators	Yes ☐	No ☐	N.A ☐		
	If yes, contact Cardiologist					
Variance	Goal 6:	a. Family/Others informed of patient's impending death Yes ☐ No ☐				
		b. Patient's or family's preferred place of death identified				
		Place of death is hospital / home / hospice / others _____ Yes ☐ No ☐				
Variance	Goal No.	What variance occurred / Why / Action taken / outcome				
Name/Designation of Doctor:				Signature:		

Care of The Dying Coordinated Clinical Pathway

Date: ____/____/____

[illegible]

DAILY CARE RECORD (TO BE COMPLETED BY NURSE)

Date: ____/____/____

Care of the Dying Coordinated Clinical Pathway		Affix Patient Label Here					
Section 2A	SYMPTOM CONTROL	D		E		N	
		0800	1200	1600	2000	2400	0400
Pain	Goal 9: Patient is pain free						
	▪ Patient verbalised / appeared pain free at rest and on movement						
	▪ Consider analgesic / reposition for comfort						
Dyspnoea	Goal 10: Patient is not distressed by breathlessness						
	▪ Patient verbalised / appeared comfortable						
	▪ Consider anxiolytic / opioids / oxygen therapy / reposition / good ventilation						
Nausea and vomiting	Goal 11: Patient does not vomit or feel nauseous						
	▪ Patient has no nausea / vomiting and is comfortable						
	▪ Consider anti-emetics / review total intake						
Respiratory tract secretions	Goal 12: Patient does not have excessive secretions						
	▪ Patient has no excessive secretion.						
	▪ Consider reposition / anti-cholinergic / suctioning and reassure family						
Agitation	Goal 13: Patient is not restless / agitated						
	▪ Patient is not restless / agitated						
	▪ Exclude reversible causes e.g. urine retention, constipation. Consider sedatives.						
Section 2B	NURSING CARE						
Mouth Care	Goal 14: Mouth is moist and clean						
	▪ Perform mouth care 4 hourly						
	▪ Family / Others involved in mouth care						
Micturition difficulties	Goal 15: Patient does not have difficulty passing urine						
	▪ Patient has no difficulty passing urine						
	▪ Consider urinary catheter if in retention or diapers if incontinent						
Medication	Goal 16: All medication is given timely and accurately						
	▪ Set up syringe pump within 2 hours of doctor's order and monitor 4 hourly						
Initial of Nurse							

Enter the columns : ✓ = Achieved X = Variance N.A = Not Applicable.

If X is marked, please complete the variance and action taken.

Pg ____

DAILY CARE RECORD (TO BE COMPLETED BY NURSE)

Date: ____/____/____

[illegible]