

Liverpool Care of Dying Pathway (LCP) is a protocol that standardizes the quality of care for dying patients and their families as well as helping to discontinue inappropriate medical interventions, particularly in hospitals and hospices. Developed in the UK, it was originally designed for cancer patients, but was quickly adapted for other groups of patients. LCP is designed to provide high quality medical, psychological and spiritual care to the dying patient. It is one of several such protocols commonly used throughout the world. This article presents a description of the pathway, its origin and use as well as the proposal to include it in the Polish standards.

Key words: Liverpool care pathway, death, standardization, palliative care.

What is the alternative to persistent therapy? The English proposal for standardized procedures applied in the last hours of the oncological patient's life

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What is the Liverpool Care of Dying Pathway?

The Liverpool Care of Dying Pathway (LCP) was developed in the late 1990s in Great Britain as the answer to the growing need to improve the care both of the patients with cancer at the end of their lives and of their families. It was created by The Specialist Palliative Care Team at the Royal Liverpool and Broadgreen University Hospitals NHS Trust and the Marie Curie Hospice, Liverpool. Their aim was to transfer the hospice model of care to the hospital setting in order to provide patients with the same, highest level of multidisciplinary expertise of the shifting personnel. The pathway offers patients not only medical care, but also psychological and spiritual support. The needs of both the patient and his family are included. Limiting the number of unnecessary and painful medical procedures was the goal [1- 5]. Protocols resembling the LCP have been in use in the British health care system for years, facilitating work and eliminating the personnel's mistakes [1].

The health care workers are obliged to fulfil the individual needs of every patient they assist, and those are specific for certain groups. The LCP emphasizes what to focus on and what should, or even must be discontinued in the treatment of the dying patient. Additionally, it provides continuity of care and eliminates the mistakes and negligence derived from the lack of communication between the shifting personnel. The importance of non-medical aspects of dying is stressed in the LCP, reminding about the obligation to provide up-to-date information about the patient to him and his family as well as to give them psychological and spiritual support.

The LCP is becoming more and more popular in Great Britain. To facilitate its understanding and application, numerous training courses are conducted. In 2001 the protocol was recognized as a model of best practice in the end-of-life care by the national health care system in Great Britain (Beacon Programme) and was then incorporated into the National End of Life Care Programme in 2004. Following the governmental recommendations it is a main tool of care of a patient in the last hours of his life in the UK.

The National Care of the Dying Audit published in September 2009 showed that the patients receive higher quality of care when the LCP is used. The assessment covers the use of the LCP in 155 hospitals, looking at the records of almost 4000 patients. The audit was led by the Marie Curie Palliative Care Institute Liverpool in collaboration with the Clinical Standards Department of the Royal College of Physicians [6]. It was the second such audit – the first one was carried out in 2007 [7]. The results of both of them accordingly suggest that after the introduction of the LCP, the level of care during the last 24 hours of the patient's life was significantly improved and the patients had the best

possible quality of life in their final moments. The audit showed that 65% of patients needed no continuous subcutaneous infusion of medication to control pain and anxiety, 31% had low doses of drugs and the remaining 4% high doses. The results indicate that, when supported by the LCP, dying patients receive comprehensive clinical care tailored to their individual needs. Currently, the audit is running for the third time to assess the following parameters: the spread of LCP, prediction of critical symptoms in the last hours or days of life, and compliance with the LCP. According to the authors of numerous publications, medications that neither prolong the patient's life nor relieve the symptoms are prescribed less often when supported by the LCP [8].

The form can be obtained from the Marie Curie Palliative Care Institute Liverpool (www.mcpcil.org.uk), where further information about the protocol is available.

There are some protocols similar to the LCP, such as the Australian Best Care of the Dying (ABCD) Network [9], which has been in use in Australia since 2005. It was introduced in two phases: in the first one the records of the dying patients were analysed to define possible problems, and in the second one efforts were made to find solutions. In the USA, the Palliative Care for Advanced Disease pathway has been in practice for years [10].

Use of the pathway in different groups of patients in end-of-life care

Although the LCP was primarily designed only for oncological patients, the fact of it being clear and easy to use has encouraged professionals to prepare alternative pathways for other groups of patients with fatal diseases, such as heart or renal failure, neurological diseases as well as for children and for patients in intensive care units [11-17]. Different versions of the protocol focus on signs and symptoms typical for the particular disease, psychological aspects of a certain group of patients as well as the use of specific medications.

The nephrological pathway, edited in 2008, refers to patients with estimated glomerular filtration rate under

30 ml/min. The key fact that opioid metabolites accumulate in renal impairment and may lead to significant toxicity was considered. The pathway was properly modified in order to optimize the analgesic treatment [13, 18].

A retrospective audit concerning end-of-life care was carried out in two English paediatric units. Attention was drawn to the psychological aspects of the long-lasting, intensive care that fatally ill young patients typically go through [15].

In the project dedicated to heart failure, treatment of dyspnoea and implantation of cardioverter defibrillators were stressed [12].

Elements of the end-of-life care included in the protocol (oncological version)

LCP is a protocol dealing with the last moments (about 48 hours, in some modifications up to even 12 days) of the patient's life [4, 19]. It only requires from the medical professionals ticking the right option on the form or choosing one out of two one-letter codes.

There are three inclusion criteria on the first page of the LCP: the causes of the condition must be irreversible; the multidisciplinary specialist team has to confirm that the patient is dying; and it must confirm that he meets two out of four additional criteria – for example that he is unable to take tablets.

It should be remembered that the pathway itself does not help to predict the patient's imminent death. The LCP is aimed at providing the highest quality of care to the person who is dying, according to multidisciplinary professionals.

The protocol is composed of three sections.

1. The first one contains data from **the initial assessment** presented in the form of "yes" or "no" answers to several questions. The general clinical condition as well as presence of several symptoms, such as nausea and vomiting, constipation, dyspnoea, pain, respiratory tract secretion and the ability to swallow are estimated. Several goals concerning the patient's comfort and the guidelines to achieve them are listed here (an example of the goals together with the guidelines is shown in Table 1). One of the goals is the ad-

Table 1. Exemplary goals to be attained and the guidelines (section 1 of the protocol)

		Yes	No
GOAL 1	Discontinuation of inappropriate interventions		
Exemplary guidelines	Blood test		
	Antibiotics		
	Intravenous fluids and medications administration		
GOAL 2	Assessment of current medication and discontinuation of non-essentials		
	(conversion of appropriate oral drugs to subcutaneous route and commencement of syringe driver if appropriate; discontinuation of inappropriate medication)		
GOAL 3	Religious/spiritual needs assessment		
	With the patient		
	With the family/other		
GOAL 4	Explanation and discussion about the plan of care		
	With the patient		
	With the family/other		

ministration of only symptom-controlling drugs (for example analgesics, antiemetics), subcutaneously rather than orally or intravenously. In this part of the pathway, the discontinuation of unnecessary medical procedures such as blood testing or cardiopulmonary resuscitation is promoted. Inappropriate nursing interventions such as a routine turning regime should also be ceased. The ability to communicate verbally in English and the insight into the condition of both the patient and his family should be assessed. Stress is laid on fulfilment of spiritual needs of the patient and his relatives. Contact details of the patient's family and of the general practitioner (still not practised in Poland) should be added to the protocol. Information about visiting times and hospital facilities such as car parking or pay-phones should be provided to the relatives. The plan of care ought to be discussed with the patient and his family. They may also be informed about the use of the LCP.

2. The second section of the protocol is dedicated to the **ongoing** assessment of the patient's clinical condition and procedures performed. There are daily sheets with tables to be filled in with the correct letter standing for the management or lack of it of a certain parameter (an example of assessment of five parameters with the coding rules is shown in Table 2). In case of any variance from the LCP, it should be recorded and explained separately at the end of the document.

Every four hours the pain, respiratory tract secretion, nausea and vomiting as well as dyspnoea and agitation are assessed. The mouth care, micturition difficulties (urinary catheter if in retention) and number and type of medication administered are also checked. Any symptoms not included in the pathway, but demonstrated by the patient, should also be listed.

Other goals are assessed 12-hourly. These are skin integrity, need for positional change or special mattress, personal hygiene, bed bath and eye care. Bowel function is assessed as well. Attention is put on the psychological and insight support for the patient and his family – for example checking their understanding of the situation and its acceptance. Fulfilling the spiritual and religious needs of the patient and his relatives as well as providing facilities (for example giving information about the canteen or internet access in the hospital) for those attending the patient is also important.

3. The third section concerns **care after death**. It is obligatory to note the time of death and names of the persons present. The third section contains a list of different goals with "yes" or "no" answers dependant on their achievement (three examples are shown in Table 3). They check if the general practitioner was contacted as well as if the family was assisted with hospital procedures, for example by receiving "What to do after death" booklets. The relatives should be informed about the post mortem procedures and collection of the death certificate. Taking care of the patient's valuables and belongings is also included in the LCP.

At the end of the protocol, any procedures or interventions not included in the protocol that have been performed should be explained (for example blood tests, transportation of the patient, administration of additional medication). As a result, it is not discontinuation, but carrying out procedures that could be uncomfortable for the patient that needs explanation. Us-

Table 2. Example of the evaluation of physiological parameters performed every four hours (section 2 of the protocol)

Time	4:00	8:00	12:00	16:00	20:00	24:00
Pain						
Agitation						
Respiratory tract secretion						
Nausea and vomiting						
Dyspnoea						

Coding (to be filled in the table): A – achieved, V – variance. Any variance should be explained at the end of the document

Table 3. Example of the assessment of care after death (section 3 of the protocol)

	Yes	No
GOAL 1 GP Practice contacted re patient's death (date) – if out of hours contact the next day Message can be left with receptionist		
GOAL 2 Giving information on hospital procedures to family/other (hospital information booklet about necessary legal tasks, collecting death certificate)		
GOAL 3 Following hospital policy for patient's valuables and belongings (signing by identified person, packing for collection, listing and storing safely)		

ing the pathway allows us to eliminate situations where the patient dying from an irreversible disease receives expansive and, first of all, uncomfortable and unnecessary treatment. It should be stressed that the document does not replace the everyday clinical assessment by the multidisciplinary professional team.

The LCP also contains guidelines of administration of particular medications (or groups of them) controlling the symptoms typical for the last hours or days of dying. The drugs are adjusted to the type of protocol, for example for the paediatric or cardiological one. The version for cancer patients contains algorithms for pain, agitation, respiratory tract secretion, nausea and vomiting as well as dyspnoea control. Information about the precise doses and ways of administration of certain medications in case of the presence or lack of a particular symptom is included. Supportive notes such as alternative anti-emetics to cyclizine for nausea management in case of heart failure are attached to each algorithm. Many authors have drawn special attention to the fact that the LCP does not recommend deep sedation (but allows it in certain cases) and does not exclude intravenous hydration (just the explanation of its use is required).

Use of the protocol in the Polish reality

A lot of patients die in Polish hospitals alone, with the sense of being forgotten by the health care system. What is more, many patients undergo unnecessary, expensive pro-

cedures, often prescribed by physicians who do not believe in the efficacy of these interventions. It is known that many of these actions are taken by the health care professionals in the fear of being accused of neglecting their duties. However, one of the most common reason for complaints about the doctors by the dying patients' families is the inappropriate, according to their opinion, care during the last hours of life and improper conditions of dying [8].

There are a couple of documents in Polish law concerning end-of-life care. Under the Health Care Institutions Act, article 19, the patient has the right to "die in peace and dignity". The Medical Code of Ethics defines the role of the doctor assisting a dying patient. According to its article 30 "The doctor should put every effort possible into providing his patient with humanitarian end-of-life care and dignified dying conditions. The doctor ought to decrease the patients' suffering during his last moments of life until its very end, and maintain, to the highest extent possible, its proper quality". Additionally, article 32, point 1, discharges the doctor from "the obligation to undertake and continue resuscitation and/or persistent therapy as well as taking extraordinary measures". However, the law does not define what the "extraordinary measures" are, or the range of procedures that would be justifiable in the last days/hours of life and that would not interfere with "dignified dying conditions". Introducing and spreading the LCP, adapted to the Polish reality, could be helpful in solving these difficult issues. Article 32, point 2 of the Medical Code of Ethics states: "the decision to discontinue reanimation lies with the doctor and is directly connected to the assessment of the treatments' success". It should be remembered that introducing pathways such as the LCP does not exempt the physician from making the decision mentioned above but facilitates the treatment in the cases where such a decision has already been made.

In Poland in 2007 in the Palliative Care Unit in Bydgoszcz, an Integrated Case System (ICS), based on the LCP, was introduced as a pilot study and in 2009 it was included in the standards of care in that unit. A retrospective analysis of records of 36 cancer patients, who were put on the ICS, was done. It revealed a statistically significant decrease in the number of medications administered after the patient's enrolment in the pathway. The number of medical interventions and measurements of life parameters was significantly limited while the satisfactory control of symptoms was maintained [20, 21].

Weak points of the protocol

The aim of the authors was to show how the patients could benefit from the LCP. However, there are some critical voices, afraid of the mistakes that might result from the use of the pathway, which point out that using the pathway does not lead to a survival benefit. Certainly, the course of an illness, including a fatal one, and the risk of death are unpredictable, despite the huge progress in medicine. Therefore, there is a risk of putting on the pathway a patient who is not dying. The LCP opponents admit that the pathway might be a useful tool, but believe it cannot completely replace the patient's clinical assessment. Some critics even claim that patients on the LCP are too often in deep sedation or suffer from dehydration [22].

In hospitals, hospices and nursing homes where the LCP was introduced, there have been cases reported of patients who were placed on the pathway and were then taken off it because their condition suggested that death would not come in the next 48 hours. Commencing the LCP means that, according to the medical knowledge available, the patient will probably die in the coming hours, but does not allow one to neglect extraordinary measures in case of sudden improvement of the patient's condition.

Summary

It is hard to differentiate between the discontinuation of persistent treatment and not performing emergency procedures, even in the case of a dying patient. The LCP stresses the spiritual, psychological and social aspects of dying, defining them and facilitating achievement of the goals related to them. The pathway seems to the present authors a proper tool to fulfil individual needs of every patient by clearly defining what is important in the last hours of human life.

The crucial criterion for efficacy of the pathway is proper training of the health care professionals in using the form, understanding its goals and gaining the necessary experience [17]. It is also important to adjust the document to the local conditions. Finally, it is worth remembering that the pathway will not replace everyday clinical assessment of the dying patient.

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