

KTI 7. CLINICAL PATHWAYS

WHAT ARE CLINICAL PATHWAYS?

CLINICAL PATHWAYS DESCRIPTION:

- A document-based tool that provides a structured multidisciplinary care plan that healthcare professionals can follow.
- It includes details about essential steps of care required for a specific medical condition or healthcare intervention.
- These tools provide recommendations, processes, and time frames for the management of specific medical conditions or interventions.
- Clinical pathways can be implemented on their own or in combination with other interventions (e.g. professional education, informational technology support, local opinion leaders).

CLINICAL PATHWAY GOALS(S):

- Helps to increase the use of clinical guideline information in local protocols and clinical practice.
- To assist healthcare professionals in providing care that is evidence-based.

CURRENT FINDINGS FROM THE EVIDENCE:

- Clinical pathways are associated with reduced in-hospital complications and improved documentation without negatively impacting length of patient stay or hospital costs.

POINTS TO KEEP IN MIND:

- The concept and use of terms for clinical pathway is broad and varies, therefore, there is a range of interventions that could be considered a clinical pathway.

SYSTEMATIC REVIEW OF THE EVIDENCE FOR CLINICAL PATHWAYS

Source: Rotter T, Kinsman L, James EL, Machotta A, Gothe H, Willis J, Snow P, Kugler J. Clinical pathways: effects on professional practice, patient outcomes, length of stay and hospital costs. The Cochrane Library. 2010 Jun.

EVIDENCE FROM THE SYSTEMATIC REVIEW	
Description of Clinical Pathways	All clinical pathway interventions included in the review had a structured multidisciplinary plan of care. They were also required to contain 3 or all of the following points: <ul style="list-style-type: none">• The intervention was used to incorporate guideline recommendations or evidence into local protocols and care.• The intervention provided detailed steps about the course of treatment or care in a plan, pathway, algorithm, guideline, protocol or other “inventory of actions”.• The intervention provided time-frames or criteria-based progression (i.e. steps were taken if designated criteria

	<p>were met).</p> <ul style="list-style-type: none"> The intervention aimed to standardize care for a specific clinical problem, procedure, or episode of care. <p>In some studies clinical pathways were paired with another KT intervention (e.g., reminders, educational posters).</p>
Setting	<p><u>Healthcare settings:</u> hospitals, general acute wards, extended stay facilities, intensive care units, emergency departments, a mental health clinic</p> <p><u>Healthcare topic:</u> Various</p> <p><u>Study location:</u> USA (n=13); Australia (n=4); Japan (n=3); UK (n=2); Canada (n=2); Thailand (n=1); Taiwan (n=1); Norway (n=1)</p>
Intervention Deliverer	Not specified
Intervention Recipient	Physicians, nurses and other care providers
Quality of the systematic review	Unclear risk of bias (Assessment tool: ROBIS)
Quality of studies included in systematic review	<p>5 High quality</p> <p>16 Medium quality</p> <p>2 interrupted time series met the minimum inclusion criteria</p>
OUTCOMES FROM SYSTEMATIC REVIEW	
Comparisons:	<ol style="list-style-type: none"> Clinical Pathway vs. usual care. Clinical pathway in multifaceted approach vs usual care.
Patient clinical outcomes:	<ol style="list-style-type: none"> Clinical Pathway vs. usual care. <p>In-hospital complications:</p> <ul style="list-style-type: none"> Clinical pathways significantly reduced in-hospital complications. For patients recovering from surgery, the absolute risk reduction was 5.6%[n=5 trials]: Interpretation, the use of a clinical pathway corresponds to the prevention of one complication for every 17 patients treated. The pooled odds ratio for in hospital mortality was 0.84 (95% CI: 0.61 to 1.11) in favour of clinical pathways but did not reach a statistically significant level and statistical heterogeneity was not present among the studies ($I^2 = 0\%$).
Health care provider process outcomes:	<ol style="list-style-type: none"> Clinical Pathway vs. usual care. <p>Quality and quantity of documentation in medical records:</p> <ul style="list-style-type: none"> 1 study found no change; 2 studies pooled their results and were given an odds ratio of 11.95 (95%CI 4.72 to 30.30) indicating improved documentation by healthcare staff.
System/organization outcomes:	<p>Length of stay in hospital:</p> <ul style="list-style-type: none"> 11 studies reported significant reductions in length of stay with use of a Clinical pathway and highly likely that clinical pathways are associated with reduced length of stay. 7 studies (4 clinical pathway studies and 3 clinical pathway with multifaceted approach studies) reported no

	<p>statistically significant differences.</p> <ul style="list-style-type: none"> • Results for hospital readmission and mortality rate were not statistically significant. <p>Hospital Resources:</p> <ul style="list-style-type: none"> • Studies that implemented only a clinical pathway on pneumonia (n=2), myocardial infarction (n=2), and mechanical ventilation (n=4) care all found reduced uses of resources without patient outcomes adversely affected
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OPERATIONALIZATION OF CLINICAL PATHWAYS:

Reporting of implementation processes was generally poor, therefore further analysis on the impact of specific characteristics of clinical pathways on their effectiveness could not be done.

STUDY EXAMPLE OF CLINICAL PATHWAYS FROM THE SYSTEMATIC REVIEW

Source: Marelich GP, Murin S, Battistella F, Inciardi J, Vierra T, Roby M. Protocol Weaning of Mechanical Ventilation in Medical and Surgical Patients by Respiratory Care Practitioners and Nurses: Effect on Weaning Time and Incidence of Ventilator-Associated Pneumonia. Chest. 2000 Aug 1;118(2):459-67.

STUDY INFORMATION	
Goals of intervention	To standardize the care described in the single ventilator management protocol (clinical Pathway).
Description of intervention	<p>Clinical Pathway Development</p> <ul style="list-style-type: none"> • Created during a multidisciplinary planning • The pathway contained the same standard ventilator management practice that physician would use when managing mechanical ventilation care • Designed to require no additional support staff <p>Training Received by Staff using the Clinical Pathway</p> <ul style="list-style-type: none"> • Described as minimal <p>Control</p> <ul style="list-style-type: none"> • Managed as to standard ICU practice, required a physicians' order for all ventilation changes and weaning assessments. • Trauma service unit had a printed standardized approach before the study began. • Medical ICU did not have any structured approach.
Setting	Healthcare setting: medical and surgical intensive care units Study location: California, USA
Intervention Deliverer	Not specified

Intervention Recipient	Nurses, and respiratory therapists applied the protocol. Note: Physicians were the only healthcare professional being assessed in the control intervention
Quality of the Study	High Quality
STUDY OUTCOMES	
Comparisons	1. Clinical pathway vs. a printed standardized approach 2. Clinical pathway vs. no structured approach
Health care provider process outcomes:	<p>1. Clinical pathway vs. a printed standardized approach</p> <ul style="list-style-type: none"> • Median duration of mechanical ventilation for patients discontinued from ventilatory support in the first 96 h was 52 h in the physician weaning group (control) and 33 h in the clinical pathway group (intervention). <p>2. Clinical pathway vs. no structured approach</p> <ul style="list-style-type: none"> • Median duration of mechanical ventilation was 232 h in the physician weaning group (control) and 78 h in the clinical pathway group (intervention). <p>Combined group analysis indicated</p> <ul style="list-style-type: none"> • Mechanical ventilation duration was decreased from a median of 124 h for all physicians' patients to 68 h in the clinical pathways group. • Median duration of mechanical ventilation was reduced by 2.33 days without affecting ventilator discontinuation failure rates (i.e. patients needing to be placed on ventilation again).

VENTILATOR MANAGEMENT PROTOCOL (VMP) FROM CASE STUDY

