



Quantitative Research Article

Clinical Chart Audits as a Potential Process Improvement Strategy Within the Radiation Therapy Department of a Community-Based Cancer Center

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ABSTRACT

Purpose: Within the health care profession, many organizations rely on routine clinical chart audits to detect areas for enhancement and potential triggers for error. Effective clinician documentation within the electronic treatment record is mandatory should high-quality care be maintained. This study aimed to determine what type of information might be obtained from radiation therapy treatment chart audits. This information would help to inform areas for improvement within the department and to determine whether introducing clinical chart audits as routine would be of benefit.

Methods: A chart audit tool was piloted at the host institution and subsequently finalized as a result of the pilot. Clinical chart audits of radiation treatment records ($n = 196$) were completed over a four-month time span. Data analysis included the calculation of proportions to examine the completeness of each of the identified tasks within the chart audit tool.

Results: Areas of excellent practice (achieving or exceeding a benchmark measurement of 90%) tend to correlate well with tasks that are currently embedded into routine quality assurance checks, such as a checklist. Areas for improvement (below set benchmark) have a commonality; they all required best practices to be followed and did not have a prompt built in to the process.

Conclusions: Areas of further related research would focus on engaging radiation therapists in the successful implementation of chart audits within this radiation therapy department.

Keywords: Quality; safety; leadership; documentation; assessment; checklist

RÉSUMÉ

But : Au sein des professions de la santé, plusieurs organisations s'appuient sur des vérifications des tableaux cliniques pour détecter les domaines d'amélioration et les déclencheurs d'erreurs potentielles. Une documentation clinique efficace doit être tenue dans le dossier de traitement électronique pour maintenir des soins de qualité. Cette étude vise à déterminer quel type d'information peut être tiré de la vérification des tableaux de traitement de radiothérapie. Cette information aiderait à éclairer les domaines d'amélioration potentielle dans le service et à déterminer s'il serait utile d'établir des vérifications de routine des tableaux cliniques.

Méthodologie : Un outil de vérification des tableaux cliniques a été élaboré sous forme de projet pilote dans l'institution hôte et ensuite finalisé. La vérification des tableaux cliniques des dossiers de radiothérapie ($N=196$) a été réalisée sur une période de quatre mois. L'analyse des données comprenait un calcul des proportions afin d'établir si chacune des tâches identifiées dans l'outil de vérification des tableaux cliniques avait été complétée.

Résultats : Les domaines d'excellence (atteinte ou dépassement d'un seuil de référence de 90%) tendent à présenter une bonne corrélation avec les tâches qui sont actuellement comprises dans les vérifications de routine d'assurance de la qualité, comme une liste de vérification. Les domaines d'amélioration potentielle (sous le seuil de référence établi) présentent un point commun: ils exigent tous que des pratiques exemplaires soient suivies et aucun déclencheur n'est inscrit dans le processus.

Conclusions : Des recherches subséquentes mettraient l'accent sur la participation des radiothérapeutes à la mise en œuvre réussie de la vérification des tableaux cliniques dans ce service de radiothérapie.

Introduction

For decades, health records have been used to perform clinical chart audits as a tool for quality assessment [1]. A clinical chart audit is an examination of a health record (electronic or hard copy), to determine what has been completed and

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to ascertain what improvements may be required [2]. There are a number of performance components that may be measured in a chart audit, including adherence to clinical procedures, patient adherence, and provider compliance [3]. Clinical chart audits may be performed on an individual case, for review of a significant incident, perhaps, or a population-based review, which allows insight into patterns of behavior [1].

Routine clinical chart audits were not part of the quality assurance (QA) program within the department where this research was undertaken. This research aimed to determine what type of information might be obtained from radiation therapy treatment chart audits to guide additional areas for improvement within the department. Analysis of chart audit data could enable the leadership team to make recommendations for process improvement.

Materials and Methods

Approach

This research used a pilot survey and documentary analysis as its primary methodologies and had full ethical approval before commencement of the study.

Although *implicit* chart reviews have commonly been used in the past to determine whether care was met, the reviewer does not have defined criteria and relies on general guidelines to make conclusions [4]. This type of *implicit* chart review tends to result in high inter-rater variation and low levels of reliability. Without a standardized approach, it is difficult for a reviewer to determine appropriate care levels, especially for complex cases. To maximize reliability of the results, *explicit* chart reviews were used during the audits conducted in this research.

To perform *explicit* chart reviews [5], a standardized data collection tool is required. Consideration must be taken when prioritizing clinical audit topics, with a focus on obtaining information that will potentially improve the quality or safety of the care being provided [6].

This chart audit tool was developed and categorized based on significant steps taken along the radiation treatment trajectory. Because there were no previous attempts at chart audits within the department, this meant using knowledge of potential practice gaps to drive audit topics or categories to be assessed. The chart audit tool was adapted (with permission) from a tool developed at the Northeast Cancer Centre radiation therapy department.

The Pilot Survey

Six front-line radiation therapists (RTs) were randomly selected and surveyed. Randomization was performed using a stratified random sampling method to ensure the characteristics of the whole population were accounted for. The RTs were asked to complete a chart audit using the tool provided on the same unique patient chart. The purpose of surveying the RTs and piloting the chart audit tool was to

measure the inter-rater reliability of the tool and to provide an opportunity to modify the tool based on feedback from staff. The aim of a chart audit review is to produce consistent results with good inter-rater reliability [5].

As a result of the pilot, the first section of the chart audit tool was changed to a table format for ease of data entry. The following categories were added: *code #*, *treatment intent*, *comments*, and *treatment start date* to create the final version of the chart audit tool. The *Imaging* and *Patient Care Documentation* categories were expanded to capture additional information and streamline data collection. For example, the initial check of patient care documentation was to assess RTs documentation for completeness according to guidelines; however, it became apparent that the correlation between documentation of RTs and other health care professionals was not being analyzed. Thus, an item was added to determine whether RTs patient care documentation reflected the radiation oncologist (RO) and nursing documentation, which are both performed at a minimum of once per week in review clinic.

The Analysis of Documentary Evidence

The inclusion criteria for the study were identified as any new patients starting radiation treatment during a selected one-month time frame. This period was selected to compare RT documentation before and after a significant practice change had been introduced into the department. Before the research study, there was anecdotal evidence to suggest patient care documentation performed by RTs during a patient's course of radiation treatment was minimal at best and appeared to be by exception only. The practice change included the introduction of a minimum weekly electronic patient care documentation requirement since it has been well established that timely and complete documentation facilitates continuity of care and keeps the entire interprofessional team updated on the patient's health status [7].

To ensure the sample was representative of the target population, all cancer disease sites were included. Audits of ($n = 196$) electronic radiation treatment charts and the resulting analysis were performed by the researcher over four months. Each chart audit took approximately 20 minutes to complete.

The final audit tool consisted of a checklist (for ease and standardization of data collection) and a section for comments after each area assessed. Checklist options were YES, NO, or N/A. After reviewing the data, a lack of qualitative themes emerged and, therefore, only quantitative analysis was performed. It must be acknowledged a mix of qualitative and quantitative data are preferred when conducting research [8]. Once the data were tabulated, this was scanned for unusual entries, and any errors subsequently rectified. This method was selected over a complete rereview of the entire data due to the large sample size [9].

Data Analysis

When reviewing data from clinical chart audits, complex statistical analysis is often not necessary or appropriate [10],

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