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Workflows in Cancer Treatment and their Influence upon Clinical Documentation

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Abstract

To establish single source cancer documentation for a complete comprehensive cancer center CCC we performed a systematic analysis of diagnostic, therapeutic and documentation workflows for 13 cancer entities. Results suggest that we will need three types of clinical documentation to cover all cancer entities of the Erlangen CCC. We expect to have a workflow for solid entities with inpatient treatment, one for solid entities treated ambulatory and one for non solid cancer entities.

Keywords:

Clinical documentation, workflow, cancer documentation

Introduction

Erlangen University hospital is comprehensive cancer center (CCC) since 2010 and certified oncological center since 2011. The strategy for cancer documentation at Erlangen university hospital is based on a single source concept where data is captured once in the hospital information system HIS and then reused for various purposes such as registry documentation, cancer research, annotation of biosamples etc [1,2].

Methods

A systematic workflow analysis was performed for the cancer entities prostate, bladder, kidney, colon, rectum, bronchial, thyroid, cervix, mamma, malignant melanoma, acute myeloic lymphoma, plasmocytoma and multiple myeloma. In a first step literature was searched for guidelines and clinical pathways. From these a set of workflows was drafted using MS Visio. These draft workflows were discussed in two structured interview rounds with 12 experienced clinical specialists in seven departments. With this information the draft workflows were further adjusted to clinical reality and standardized. In the feedback interviews the refined workflows were re-discussed with the clinical partners and finalized.

Results

A total of 66 diagnostic and therapeutic workflows were consented for the 13 cancer entities. Among the diagnostic workflows we found similarities for the entities prostate, kidney, bladder, colon and rectum cancer with typical and common diagnostic and staging activities. The second group were bronchial and thyroid carcinoma with an emphasis on xray and biopsies. The third group leukemia and plasmocytoma showed marked deviations, necessitating e.g. blood examinations, bone marrow punction, cardiac echo and lung function tests. For therapeutic workflows we could also distinguish between the non solid entities (leukemia and plasmocytoma), the solid entities treated primarily with surgery (prostate, kidney, bladder, cervix, colon, lung) and solid cancer types requiring additional treatment, e.g. thyroid surgey combined with radiochemotherapy. The documentation workflows could be grouped into ambulatory treatment (melanoma), inpatient treatment (leukemia, plasmocytoma) and inpatient treatment with ambulatory follow up.

Summarizing, these cancer entities can potentially be covered within three types of clinical documentation:

- A generic clinical documentation for solid cancer entities with primary surgery (inpatients)
- A modified documentation workflow for ambulatory treated solid entities
- A documentation for non solid cancer entities.

Conclusions

It is impossible to cover all cancer entities of a comprehensive cancer center with only one clinical documentation workflow and a single set of clinical documentation forms, because the clinical workflows themselves differ for certain cancer entities.

We are however fairly confident that a set of three documentation workflows covering inpatient solid cancer entities, outpatient solid cancer entities and non solid cancer entities may suffice, if each of the three documentation workflows can be sufficiently adapted to various cancer stages with their respective diagnostic and therapeutic necessities.

References

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