

NSIR-RT BULLETIN

Welcome to the electronic bulletin for the National System for Incident Reporting - Radiation Treatment (NSIR-RT). This Bulletin supports continuous learning from incident data through the presentation of data trends and case studies. It will also provide system users with information on program developments and enhancements.

Highlights

NSIR-RT on the International Stage

As a recognized leader in incident reporting and learning, CPQR and NSIR-RT were again showcased at the Radiation Oncology Safety and Quality Committee (ROSCC) of the European Society for Radiotherapy and Oncology (ESTRO) held in Brussels at the end of September. The committee discussed the integration of a risk matrix system and categorization of incidents to improve efficiency using NSIR-RT and the SEVRRRA system developed in Spain and South America as case studies.

NSIR-RT Case Study

The Potential Impact of Scheduling Delays in the Delivery of Concurrent Chemoradiotherapy

Chemoradiotherapy is the combination of simultaneous chemotherapy and radiotherapy. The advent of definitive and adjuvant chemoradiotherapy has improved cancer care significantly, and in almost all solid tumours in which locoregional control is necessary, it is now the established standard of care.

One of the mechanisms by which concurrent chemoradiotherapy functions is radiosensitization; the interaction between a drug and ionizing radiation within the radiation field leads to increased cytotoxicity, improving the probability of local control. While the optimal dose and timing of such drugs when used concurrently to radiotherapy remains an area of investigation, pre-clinical and clinical trial evidence (1-3) suggest that radiosensitizing drugs should be administered in close temporal proximity to the delivery of radiotherapy to effect their benefit.

In a review of the almost 350 reported scheduling-related incidents submitted to NSIR-RT, 14% were classified as inadequate coordination of combined modality care i.e. concurrent chemoradiotherapy. While no acute medical harm to patients was attributed in any of these incidents, given the evidence that the timing of administration of radiosensitizing drugs and radiotherapy may be important to optimize cytotoxicity, delayed harm, in the form of decreased locoregional control and survival, is conceivable. At the very least, treatment was not delivered as intended to these patients with a risk of unnecessary delays in or changes to their care schedules and diminished trust in their care teams.

The most common ascribed contributing factors in these incidents were:

1. Inadequate communication or documentation (27%) and
2. Policies and/or procedures not followed (14%)

By the Numbers

Incident Submitted: 2,890

Actual Incidents: 1,679

Severity: None (1,330),
Mild (313), Moderate (32),
Severe (4)

Relevant Courses

RT Incident Investigation and Learning Online

CPQR is excited to announce the release of a new independent-learning course "*Radiation Treatment incident Learning and Investigation*". This free course will arm you with tools to implement a consistent and comprehensive approach to incident reporting and investigation locally that aligns with national metrics. [Get it here!](#)

Perhaps more concerning was that 38% of these incidents were detected at the time of treatment delivery, and 18% at the time of patient assessment during radiotherapy. Therefore in over 50% of cases the inadequate coordination of chemotherapy and radiotherapy was discovered either at the time of the first radiation fraction or after radiotherapy had started which may suggest absent or ineffective quality assurance checks in pre-treatment processes.

Recommendations

1. Create/Review Organizational policies and procedures specific for concurrent chemoradiotherapy

Having simple and clear policies and procedures that account for each step in the concurrent chemoradiotherapy process (from scheduling to quality assurance checks during the radiation planning process) and ensuring that staff understand and follow them can be the first step in both improving the coordination of concurrent chemoradiotherapy and support a more robust safety barrier.

2. Optimize communication within and between the medical and radiation oncology care teams

Using combined or connected EMRs or scheduling systems to integrate chemotherapy and radiation scheduling whenever possible can help prevent treatment delays caused by inadequate coordination of care. Centres may wish to consider using patient navigators for concurrent chemoradiotherapy patients and developing a process to empower patients to understand their care pathway by providing them with their treatment schedules and educating them regarding the importance of timing in combined modality care.

Case Study References

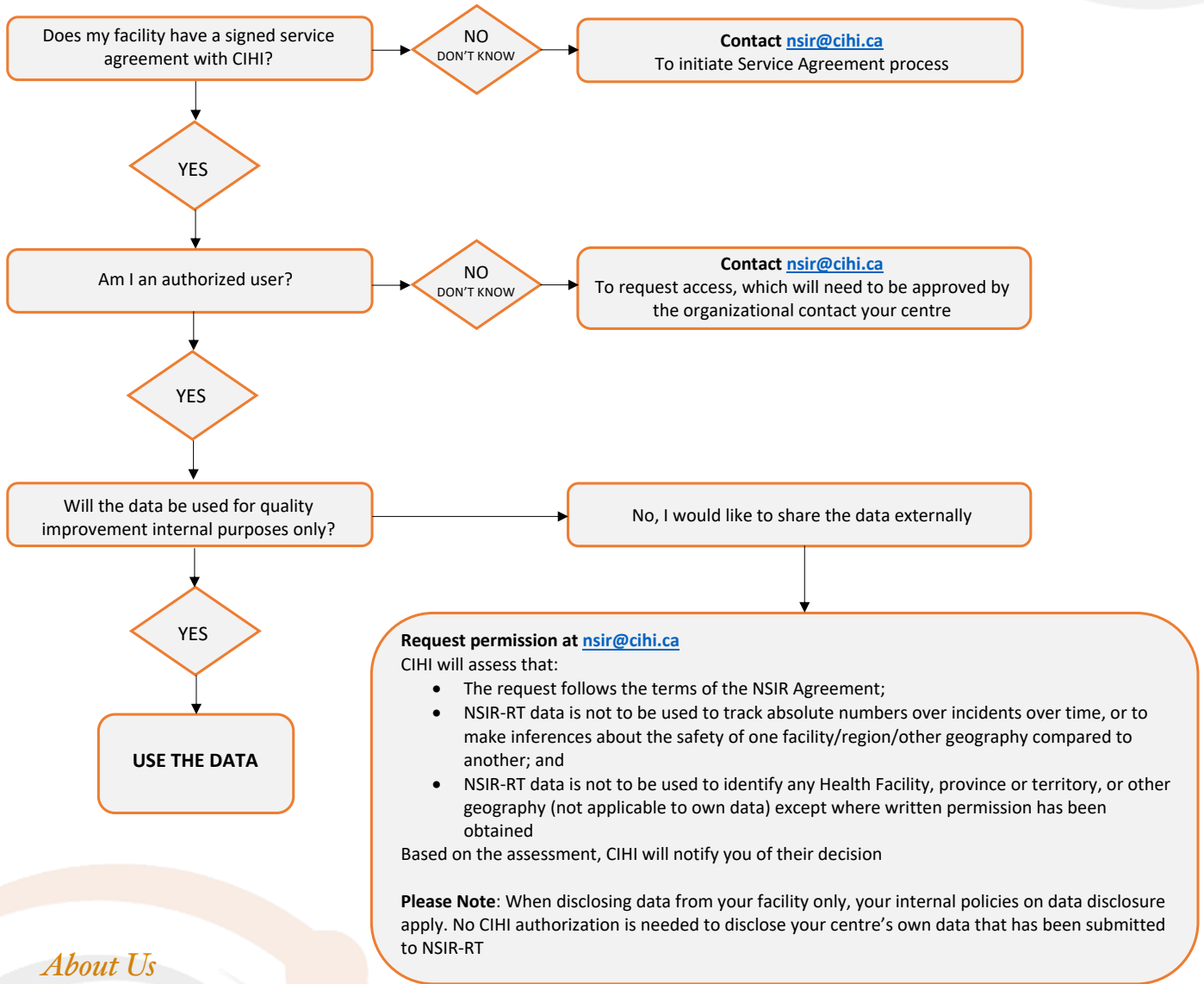
BYFIELD JE, CALABRO-JONES P, KLISAK I and KULHANIAN F: Pharmacologic requirements for obtaining sensitization of human tumor cells in vitro to combined 5-fluorouracil or ftorafur and X-rays. *Int J Radiat Oncol Biol Phys* 8: 1923-1933, 1982.

ISHIKAWA T, TANAKA Y, ISHITSUKA H and OHKAWA T: Comparative antitumor activity of 5-fluorouracil and 5'-deoxy-5-fluorouridine in combination with radiation therapy in mice bearing colon 26 adenocarcinoma. *Jpn J Cancer Res* 80: 583-591, 1989.

SCHAAKE-KONING C, VAN DEN BOGAERT W, DALESIO O, FESTEN J, HOOGENHOUT J, VAN HOUTTE P, KIRKPATRICK A, KOOLEN M, MAAT B, NIJS A: Effects of concomitant cisplatin and radiotherapy on inoperable non-small-cell lung cancer. *New Engl J Med* 326: 524-530. 1992.

Using NSIR-RT Data - A Visual How To!

With more than 2,500 submitted incidents, the NSIR-RT database is becoming a wealth of untapped information. But how do you get your hands on it? CIHI has developed this useful algorithm to help you navigate the data access process.



About Us

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that provides essential information on Canada’s health system and the health of Canadians.

The Canadian Partnership for Quality Radiotherapy (CPQR) supports and promotes the universal availability of high quality and safe radiotherapy for all Canadians through initiatives aimed at improving quality and mitigating risk.