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National Chemotherapy Database: A Pilot Study to Evaluate Requirement to Support The Collection and Central Management of Cancer Chemotherapy Data Across England

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Improving Outcomes: A Strategy for Cancer

6.19.....

- to improve the collection and publication of data on chemotherapy activity, outcomes and costs, the chemotherapy dataset will be introduced in April 2012 and this should provide commissioners, providers and others with invaluable information; and
- to enhance the information available to patients on the benefits and toxicities of treatment

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Chemotherapy Dataset coverage

- Solid tumours
- Haematological malignancy
- Paediatric tumours
- Inpatient, daycase, outpatient and community settings
- Excludes non cancer chemotherapy

Project Objectives

- Evaluate extracts from e-prescribing systems and cancer centres;
- Secure transfer of chemotherapy data;
- Technical specification for chemotherapy extracts;
- Technical specification for the automation of activity reports;
- Architectural design of the central repository;

Challenges

- Data Extraction
- Submission via the NHS Secure file transfer system
- Column headers\field names
- Variance in recording format of data
- Missing mandatory fields
- Other major issues

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NHS

Data Completeness

Field	Data %	Blanks %
Actual_dose_per_administration	91	9
Administration_date	91	9
Administration_route	44	56
Chemo_radiation	46	54
Clinical_trial	15	85
Comorbidity_adjustment	8	92
Consultant_GMC_code	51	49
Consultant_speciality_code	42	58
Date_decision_to_treat	41	59
Date_of_birth	100	0
Date_of_death	12	88
Date_of_final_treatment	45	55
Drug_name	91	9
Ethnicity	45	55
Gender_current	88	12
Height_at_start_of_regimen	81	19
Intent_of_treatment	86	14
Morphology	37	63
NHS_number	100	0
Number_of_cycles_planned	46	54

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NHS

Data Completeness (2)

Field	Data %	Blanks %
OPCS_delivery_code	8	92
OPCS_procurement_code	8	92
Organisation_code_of_drug_provider	46	54
Organisation_code_of_provider	49	51
Patient_postcode	88	12
PCT_of_registration	47	53
Performance_status_at_start_of_cycle	7	93
Performance_status_at_start_of_regimen	7	93
Primary_diagnosis	82	18
Regimen	100	0
Regimen_modification_dose_reduction	8	92
Regimen_modification_stopped_early	8	92
Regimen_modification_time_delay	8	92
Regimen_outcome_summary	8	92
Stage_of_disease_at_start_of_programme	9	91
Start_date_of_cycle	100	0
Start_date_of_regimen	91	9
Weight_at_start_of_cycle	88	12
Weight_at_start_of_regimen	81	19

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Pilot Activity Reporting

Report Manager - Microsoft Internet Explorer provided by SW Public Health Observatory

http://localhostdev/Reports/Pages/Report.aspx?benPath=%2FNational+Chemotherapy+Pilot+Study%2FData+Import+Summary+by+Trust

File Edit View Favorites Tools Help

Report Manager

SQL Server Reporting Services
Home > National Chemotherapy Pilot Study >
Data Import Summary by Trust

Home My Subscriptions Site Settings Help

Search for: Go

View Properties History Subscriptions

New Subscription

Trust: Trust1 From Date: 01/01/2011 To Date: 03/01/2011 View Report

100% Find | Next Select a format Export

Chemotherapy data loading summary: Trust1 for period 1/1/2011 to 1/3/2011

NCIN national cancer intelligence network
Loading information to improve quality & choice

File Validation Summary

Filename	Date Imported	Records	%Success	%Failure
TR1 Q1.csv	15/02/2011	9065	86.35	13.65
TR1 Q2.csv	15/02/2011	9831	86.83	13.17
TR1 Q3.csv	15/02/2011	10068	89.04	10.96

Mandatory Field Non-Compliance Errors

Filename	Date Imported	Mandatory Fields	Errors	%
TR1 Q1.csv	Feb 15 2011	Missing/invalid mandatory fields - Diagnosis and Morphology	1160	12.80
TR1 Q1.csv	Feb 15 2011	Missing/invalid mandatory field - Treatment Intent	77	0.85
TR1 Q2.csv	Feb 15 2011	Missing/invalid mandatory fields - Diagnosis and Morphology	1250	12.71
TR1 Q2.csv	Feb 15 2011	Missing/invalid mandatory field - Treatment Intent	39	0.40
TR1 Q2.csv	Feb 15 2011	Missing/invalid mandatory field - Patient Postcode	6	0.06
TR1 Q3.csv	Feb 15 2011	Missing/invalid mandatory fields - Diagnosis and Morphology	1073	10.66
TR1 Q3.csv	Feb 15 2011	Missing/invalid mandatory field - Treatment Intent	28	0.28
TR1 Q3.csv	Feb 15 2011	Missing/invalid mandatory field - Patient Postcode	2	0.02

Data Quality Errors and Warnings

Local intranet 100%

Pilot Activity Reporting (2)

• Pilot Clinical Reporting

The pilot project has produced some sample clinical reports based upon the data received.

- Colorectal cases by Regimen
- Cycles Started by Patient Age Band
- Cycles Started by Tumour Site
- Ovarian Chemotherapy Regimens Delivered, by Regimen Group
- Treatment Intent of Cycles Started by Tumour Site

Data Quality Business Rules

Centrally agreed and maintained business rules:

- Whether it is an error, warning, or informational
- Whether it is incoming data validation, cross reference validation, or internal validation
- How critical the rule is – 1 low to 5 high
- What actions to take – allow, reject, fix
- Status – active or disabled
- Who to notify of a violation of this rule

Recommendations

1. Staging data – add field 'stage type';
2. Dataset mandatory fields must include unique identifiers at each level of data
3. Templates for CSV and XML files should be made available to system developers, technical partners and data suppliers
4. A data submission threshold to be agreed by NCIN;
5. Business rules and QA rules should be codified into a single XML schema and an additional text document for distribution to technical partners and data suppliers.

Recommendations (2)

6. Units supplying data must be allocated a unique code to identify them. Files submitted should include this code in the filename along with a date range identifier for the data.
7. Units supplying data must have an N3 connection.
8. Estimates indicate the database could receive as many as 12,000,000 records each year. This will rapidly grow the database and therefore the hardware platform should be able to cope with five to ten years worth of data before being upgraded or replaced

Proposed Implementation Plan

- Phased approach from 01/04/2011 – 31/03/2014
 - **Year 1:** develop web front-end; finalise database; continue to test data from increased pool of pilot sites; engage with software suppliers
 - **Year 2:** 01/04/2012 SACT dataset mandated, sites with e-prescribing systems live; work with remaining sites; provide activity report to providers and commissioners
 - **Year 3:** 31/03/2014 all chemotherapy units supplying SACT compliant data monthly;