

# PRCCR Automated Audit Tool

## An effective solution for re-abstracting audit

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### Background

- The Puerto Rico Central Cancer Registry (PRCCR) annually performs different audits including case finding and re-abstracting in a group of hospitals. These audits are part of the PRCCR quality assurance program, in compliance with the National Program of Cancer Registries (NPCR) Standards.
- The main goal of these audits is to detect potential inconsistencies when abstracting cases and to evaluate the case-finding methods to avoid under-reporting of cases. In the case-finding audit, the auditor evaluates the current procedure in place to detect missed cases, using different sources of information including: disease index, radiation oncology, surgery log, pathology reports, among others.
- For re-abstracting cases, the auditor examines the medical records and prepares an abridged abstract using rules in compliance with standard setter organizations. The abstract prepared by auditor is compared against the original abstract produced by registrar's hospital, and discrepancies are evaluated to calculate an agreement score.
- Analysis, evaluation, scoring, and writing of audit results is time consuming and requires feedback from the audited institution.
- The final audit results must be presented to the audited institution along with its performance evaluation and recommendations of the corrective actions to be considered in the future.

### Aims

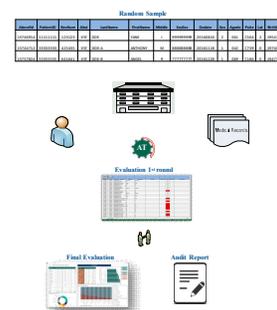
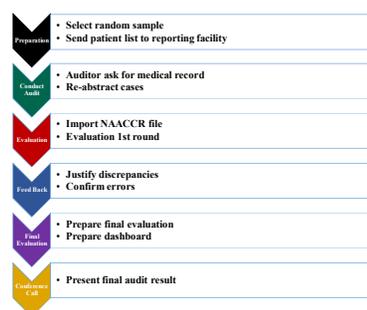
- To develop an automated audit tool (AT) that provides a complete and detailed evaluation for re-abstracted cases.
- To produce a dashboard with several panels with tables and charts, showing, dynamically, the audit results. The dashboard includes overall score and specific scores by the primary site on each audited field.

### Methods

- The AT was developed integrating a solution in Visual Studio Application, Excel template, and PowerBI (model and visualizations), accessing data stored in PRCCR Cancer SQL Server Database.
- We also used a customized version of AbstractPlus, configured by PRCCR's IT Staff, including only fields to be audited.

### Methods

A Re-abstracting audit consists of the following steps:



### Results

- The AT produces a random selection of cases to be audited, searching cases reported by the institution with a diagnostic date in the year to be audited. The sample size is established by users depending on case load.
- The AT can be configured to include different NAACCR fields and weight of each field in the evaluation score.
- Once the auditor has finished re-abstracting on cases, AT produces a workbook in Excel with the first evaluation report. This workbook allows the reconciliation and adjust of discrepancies between the original value abstracted by registrar and the value abstracted by the auditor.
- When the evaluator completes this process, the AT calculates automatically the audits overall score (Figure 1).
- The evaluation dashboard includes a distribution by primary site of all re-abstracted cases (Figure 2).
- The dashboard also shows the score ranked by primary site (Figure 3).
- AT dashboard presents in tabular form a detailed evaluation of each audited field (Table 1).
- This detailed information helps to identify the fields that need to be emphasized to improve the quality of the data (Figure 4).

### Results



Figure 1 Final score, points obtained vs maximum possible points

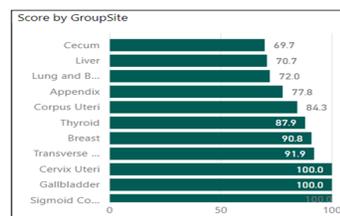


Figure 3 Ranking & score by primary site



Figure 2 Case distribution by primary site

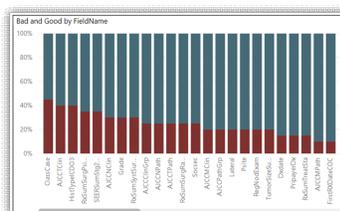


Figure 4 Ranking by accuracy of audited field

FieldName	Good	Bad	Good %	Bad %	Weight	Points	Points Max
AgeDx	19	1	95.0	5.0	1	19	20
AJCCClInGrp	15	5	75.0	25.0	2	30	40
AJCCClIn	16	4	80.0	20.0	2	32	40
AJCCPath	18	2	90.0	10.0	2	36	40
AJCCPathGrp	14	6	70.0	30.0	2	28	40
AJCTClIn	15	5	75.0	25.0	2	30	40
AJCTPath	16	4	80.0	20.0	2	32	40
AJCTClInGrp	12	8	60.0	40.0	2	24	40
AJCTPathGrp	15	5	75.0	25.0	2	30	40
BehaviorCDO3	20	0	100.0	0.0	2	40	40
BirthDate	19	1	95.0	5.0	1	19	20
ClassCase	11	9	55.0	45.0	2	22	40
C5SSFF1	6	1	85.7	14.3	1	6	7
C5SSFF10	6	0	100.0	0.0	1	6	6
C5SSFF11	6	0	100.0	0.0	1	6	6
C5SSFF12	6	0	100.0	0.0	1	6	6
Total	1125	143	88.7	11.3		1787	2048

Table 1 Detailed evaluation by field name

### Conclusion and Future Plans

- The AT performs a complete analysis of audits.
- The AT provides information to prepare an audit report, highlighting common errors and showing opportunities to improve the quality of data.
- The AT has been used successfully in 5 audits conducted in 2019, reducing drastically the time required to conduct the audit.
- The AT is an automated tool that reduces the risk of human error.
- Future plans include updates of AT and AbstractPlus when new NAACCR versions are released.
- Some updates must be done when PRCCR wants to add a field to be audited or when field weights need to be changed.

### Disclaimer

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