

Automated Clinical Data Preprocessing Accelerates Electronic Case Report Form Completion

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OBJECTIVES

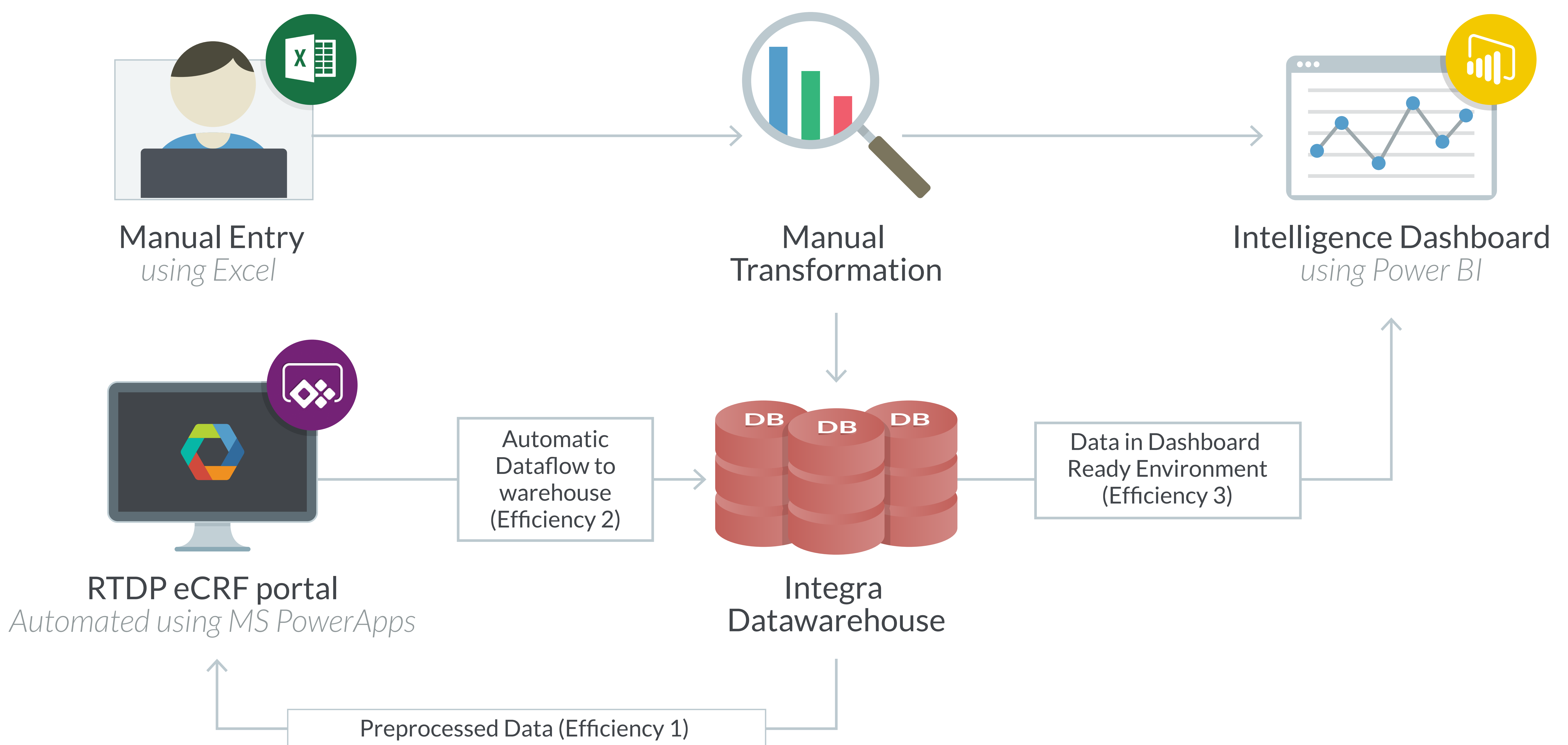
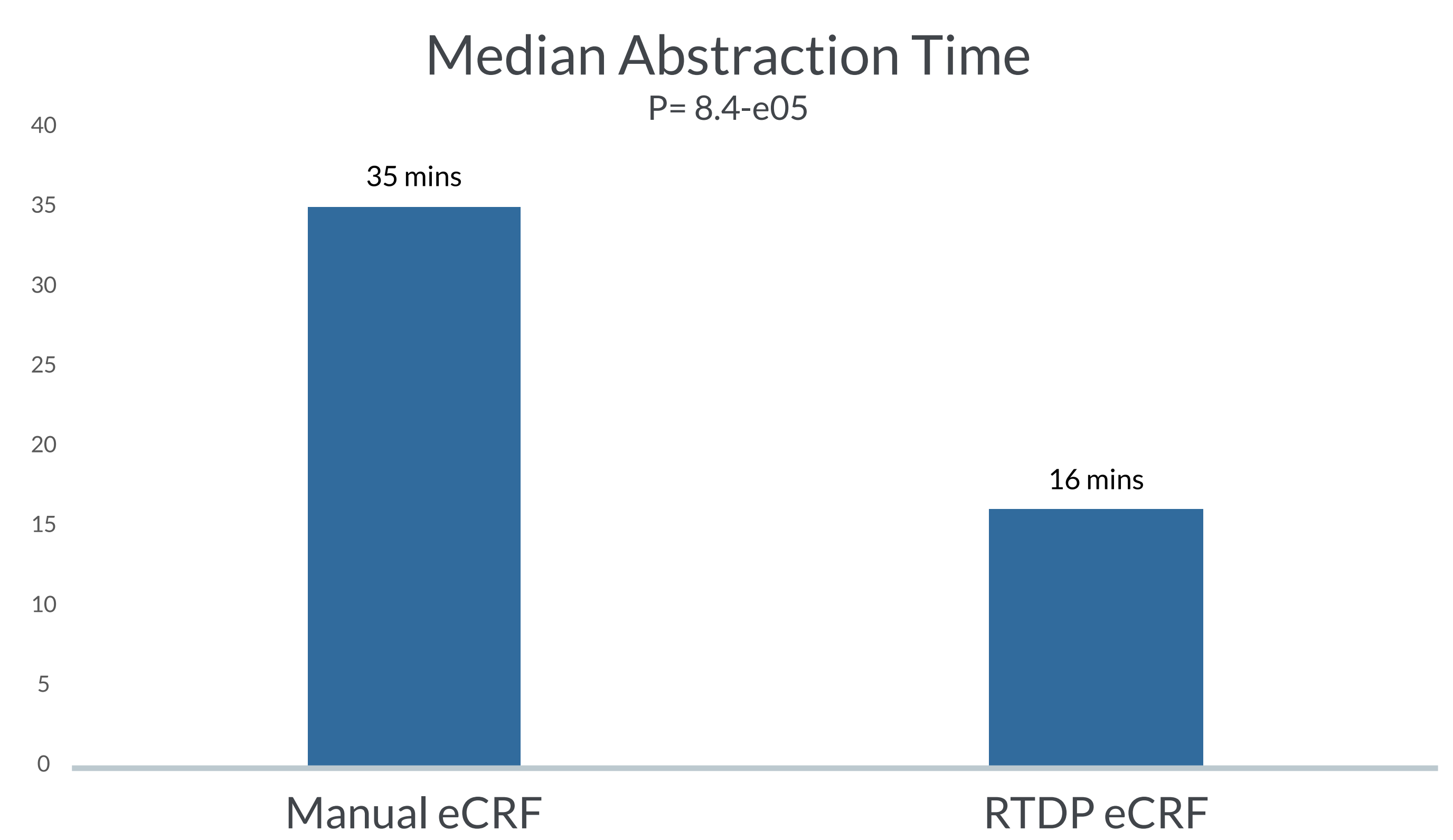
- Real-World Evidence (RWE) data is increasingly used to evaluate clinical outcomes.
- Incomplete documentation is a primary reason why manual abstraction is necessary.
- However, this is time consuming and redundant as many data is already present from structured fields e.g. in the EMR.
- For this study, we created an electronic Case Report Form (eCRF) that automatically preprocesses known data elements from Electronic Medical Record, Practice Management and other systems, to prepopulate the eCRF software and reduce chart abstraction time.

RESULTS

- Median abstraction time per patient record was reduced from 35 minutes to 16 minutes by implementing the RTDP-eCRF process (P = 8.4-e05).
- In the manual eCRF, 858 fields were filled out manually across the 22 patients, of which 60% were prepopulated by the RDTP-eCRF. 8 fields (1%) had manual entry errors, which were all prevented in the RTDP-eCRF.
- Since then, we have implemented our RDTP-eCRF software across 8 projects in Lung Cancer, Ovarian Cancer, Prostate Cancer, Leukemia, Multiple Myeloma, Beta-thalassemia, Lymphoma, and Myelodysplastic syndrome, abstracting over 7,000 patients.

METHODS

- We created a Real-Time Data Preprocessing (RTDP) eCRF portal using MS PowerApps hosted in a secure and HIPAA audited Azure environment with 2-factor authentication, which prepopulated the software with data from Integra Connects' Data Transformation and Exchange (DTX) Database.
- 2,054 cancer patient records were abstracted by a team of trained abstractors who collected tumor stage, date of diagnosis, response and genetic testing status, including mutations.
- 22 patient records were randomly assigned for a second abstraction by different team members using a standard eCRF form without RTDP and blank values.
- We electronically measured time spent (in seconds) on each patient's chart and compared the results of both methods using a Wilcoxon Rank Sum test.



CONCLUSIONS

- Using our RDTP-eCRF software reduced abstraction time by 54%.
- Efficiency was achieved by prepopulating 60% of fields.
- We found 1% of manual entries to contain errors, all of which were prevented in our RDTP-eCRF.

