Automation of Generating Registry Reports

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BACKGROUND

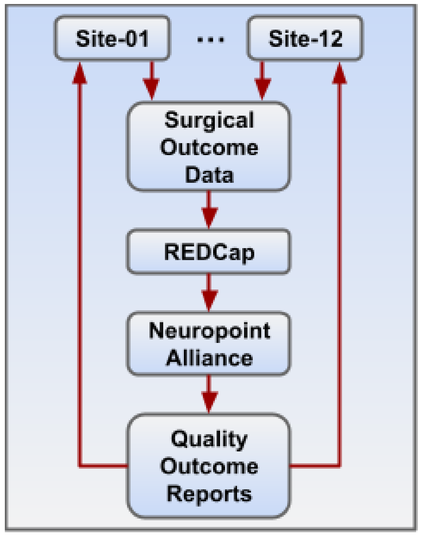
QOD TUMOR REGISTRY

- NeuroPoint Alliance[1] collects surgical outcome data of various US clinics
- The QOD Tumor registry is managed by Mayo Clinic and hosted by REDCap[2]

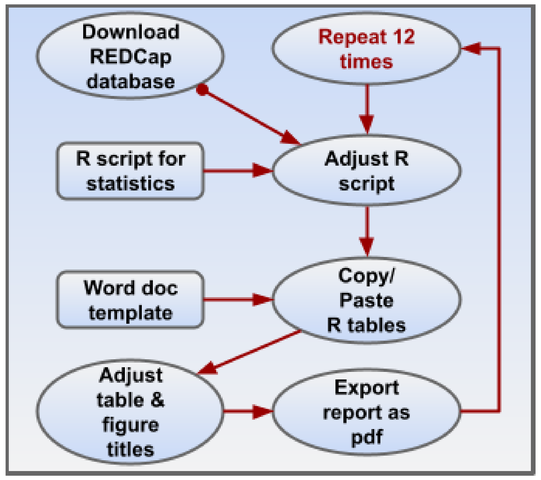
QOD TUMOR SITE REPORTS

- Individualized site reports summarize surgical outcomes and provide benchmarks
- **Each report** currently comprises
  - **115 pages**
  - **25 figures**
  - **26 tables**
  - **100+ variables**

OPERATIONAL FLOW



PREVIOUS PROCEDURE
WORKLOAD: 2-3 DAYS



OBJECTIVE

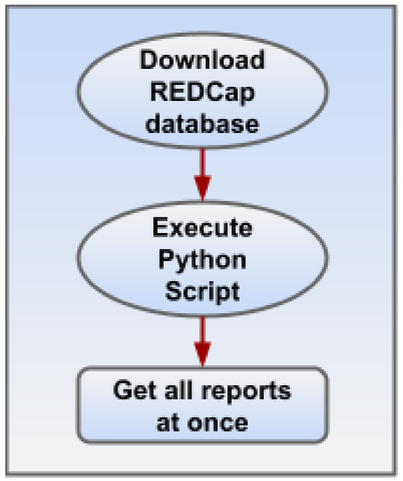
- To reduce the time spent on repetitive tasks, while not compromising on quality

METHODS

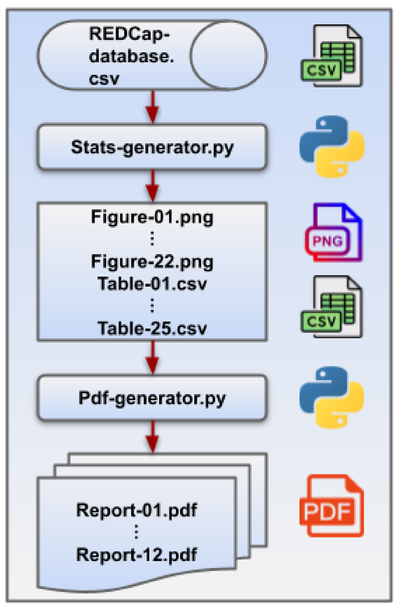
- Developed Python scripts[4] for generating statistics, tables, figures, and reports altogether.
- Used libraries/packages:
  - Reportlab[3] (pdf generation)
  - Sklearn & Statsmodels (statistics)
  - Numpy & Pandas (data handling)
  - Matplotlib & Seaborn (figures)

RESULTS

UPDATED PROCEDURE
WORKLOAD: 2-3 MINUTES



DATA FLOW



CONCLUSIONS

After an initial time investment, the automation of generating reports

- **saves time ongoingly** every quarter year the report is due
- **reduces** human-made **error** by streamlining statistics generation
- **eases** implementation of **adding more sites** to the registry
- **is being scaled up** to other registry reports
- **is generalizable** to other report types

REFERENCES

1. https://www.neuropoint.org
2. https://redcap2.mayo.edu/redcap
3. https://docs.reportlab.com