# Quality Improvement and Confirmation (QuIC) Projects: A method for rapid and verifiable improvement in focused aspects of individual performance in radiology departments

C. Matthew Hawkins, MD, Rebecca M. Pryor, BS, RT, Chris N. Alsip, BS, RT, & David B. Larson, MD, MBA

Cincinnati Children's Hospital Medical Center, Department of Radiology , Division of Quality Improvement



Cincinnati Children's®

A paper-based request form for a QuIC Project

(Figure 1) was developed which could be

department. The request specifies what

performance issue should be addressed,

straightforward tasks.

submitted by any member of the radiology

the individuals to be targeted, the perceived

focused on technologist performance and are

reserved for improving or standardizing relatively

Once a request is submitted, a meeting between

technologists, managers, etc.) is held to determine

key department stakeholders (division leaders,

a specific auditable measure and a reasonable

performance goal (less than 100%).

The purpose of the Quality Improvement and Confirmation (QuIC) Project process is to enable efficient and verifiable improvement in individual performance of relatively small but important elements that contribute to overall departmental quality.

# The goals of a QuIC Project are to:

- 1. Identify desired metrics of individual performance that are derived from evidence or local/ national consensus, are unambiguously defined, and are auditable.
- 2. Perform straightforward interventions to improve performance or influence behavior (typically individual and/or group education and feedback).
- 3. Perform continuous data auditing to confirm that performance has improved.

# To be clear, a QuIC Project is NOT:

- 1. A project requiring significant coordination, infrastructure change, or other major intervention.
- 2. A change where consensus is not clearly established at the outset.
- 3. A change where the means to reach the outcome is not clearly known.

# QuIC (Quality Improvement Confirmation) Request for I think we should do a quality review of: The issue that concerns me is: I think this is a problem: \_\_\_\_\_\_% of the time Review checklist-(Add anything you know...we'll fill in the rest) Sections included: CT MR US NM RAD FLUORO IR MD/DO Sites included: Main Liberty OPS How many studies does this affect? \_\_\_\_ How many staff does this affect? \_\_\_\_ What will we look at for baseline data? \_\_\_ What will be our measure of success (goal)?\_\_\_\_ Interventions- Education, Training, and Reminders: \_\_ Return to Becci Pryor x65993

Paper-based QuIC Project request form that can b completed by anyone within the department. After submission of the form to the Quality Improvemen team, an initial audit is performed to evaluate the validity of the concern. Future plans include development of a web-based QuIC Project request form. In these instances, the project is converted into a "QuIC Question", which is answered by the initial audit. No further data collection or intervention takes place. However, if room for improvement exists, the QuIC Project is launched.

> After obtaining baseline data, a brief education session is presented to members of the department contributing to the measured outcome (Week 1). Data are then collected on a weekly basis and posted in the department. The projects generally follow three 3-week notification phases (Figure 2): Weeks 2-4, feedback and reminders are provided to all groups affected by the change. Weeks 5-7, confidential feedback and reminders are provided to individuals who do not meet performance standards. Weeks 8-10, individuals who repeatedly do not meet performance standards and their managers are notified. Data collection continues, for up to 10 weeks, until it is confirmed that the performance standard has been met. Data collection may continue at intervals to confirm the desired change is maintained. A single-page report that is used for weekly feedback also serves to document mprovement. (Figure 3)

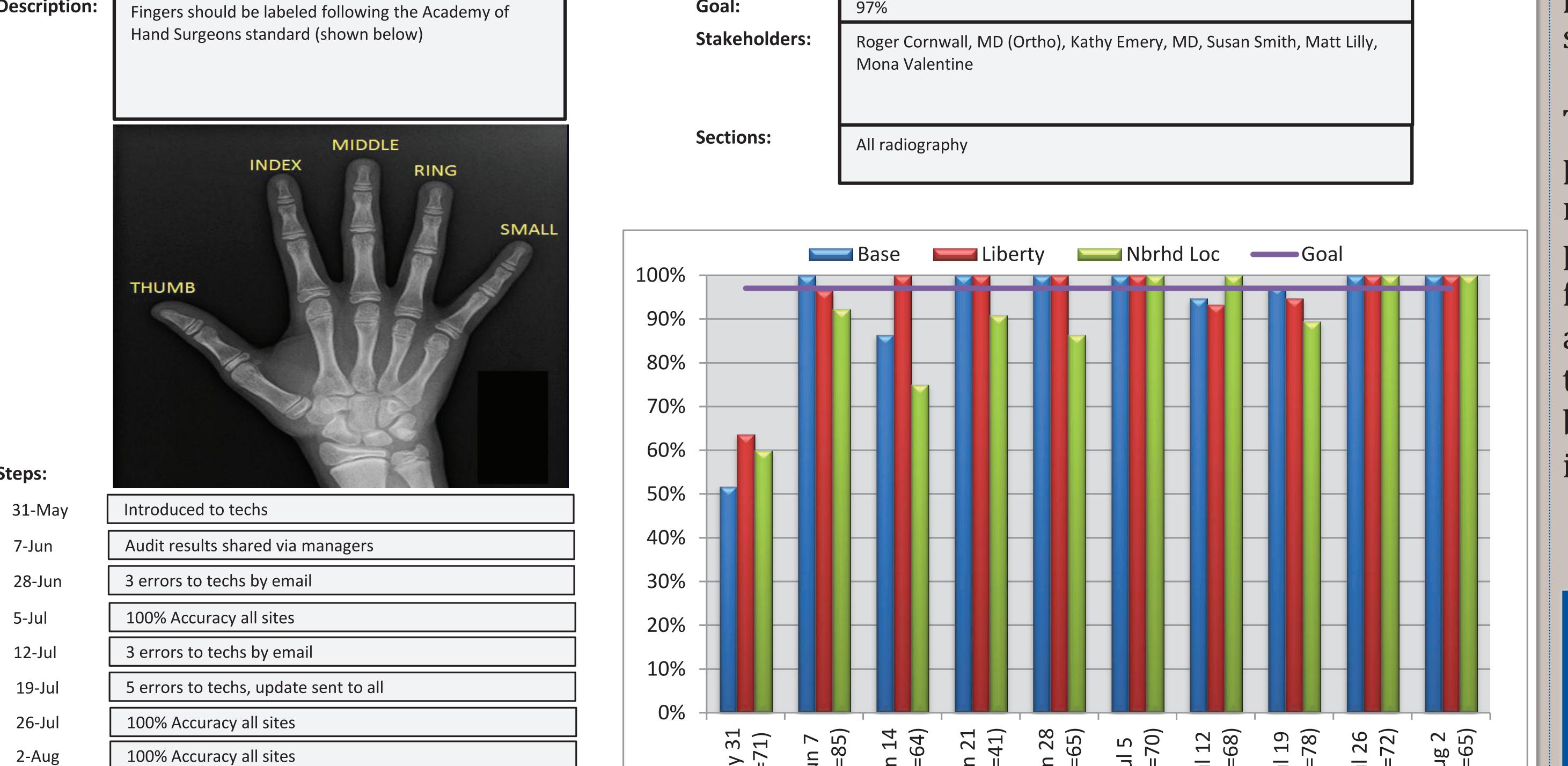
The QuIC Project process has been successfully implemented within our department. This process has allowed us to approach small, targeted performance metrics and systematically provided feedback at the group and individual level.

To this point, there have been four QuIC Projects performed and two QuIC Questions answered within 26-Jul 7 our department. The QuIC Projects are listed below and shown graphically in figures 4 a-d.

Week 1	Initial audit and education session for members of the group contributing to the measured outcome.
Weeks 2-4 (1st phase)	Group-level feedback and reminders are provided to members of the department contributing to the measured outcome.
Weeks 5-7 (2nd phase)	Confidential, individual level feedback is provided to those not meeting the target performance goal.
Weeks 8-10 (3rd phase)	For those still not meeting the performance goal, feedback is provided to both the individual and the individual's manager. If all individuals are meeting the performance goal, this phase serves as confirmation of performance sustainability.

# QulC Project: New Finger Labeling





# Radiology



outcome, and used for weekly feedback during each QuIC Project. The report is automatically generated by our data collection tool, thus limiting the man-hours required to adequately create feedback mechanisms and learning tools for our technologists.

- 1. Project: Label fingers on hand/finger radiographs using the Academy of Hand Surgeons standard nomenclature. Goal = 97%. Initial performance = 58%. Final performance = 100%.
- 2. Project: Image fewer than 5 slices above the apices and 5 slices below the lung bases on chest CTs. Goal = 90%. Initial performance = 70%. Final performance = 93%.
- 3. Project: Display only one image per plate at outpatient facilities using CR technology. Goal = 95%. Initial performance = 52%. Final performance = 97%.
- 4. Project: Utilization of standardized department protocol for patient and exam confirmation. Goal = 97%. Initial performance = 84%. Final performance = 97%.

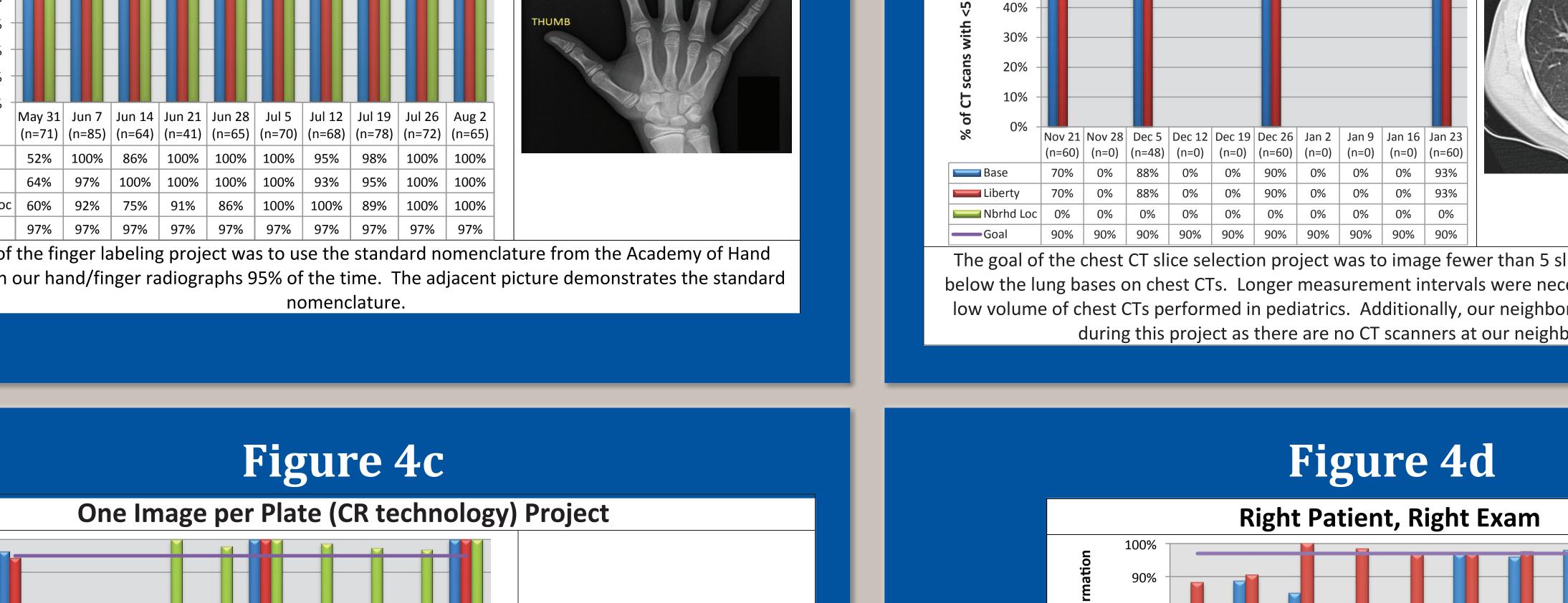
Individual level feedback was provided via personalized, standardized email. Automation of this process has not been established for QuIC Projects, however development of this automation is a future plan. Also, feedback about sub-standard individual performance, sent to division managers, performance improvement during the first (weeks 2-4) and second (weeks 5-7) phases of each project. The third phase (weeks 8-10) of each project has served as confirmation of performance

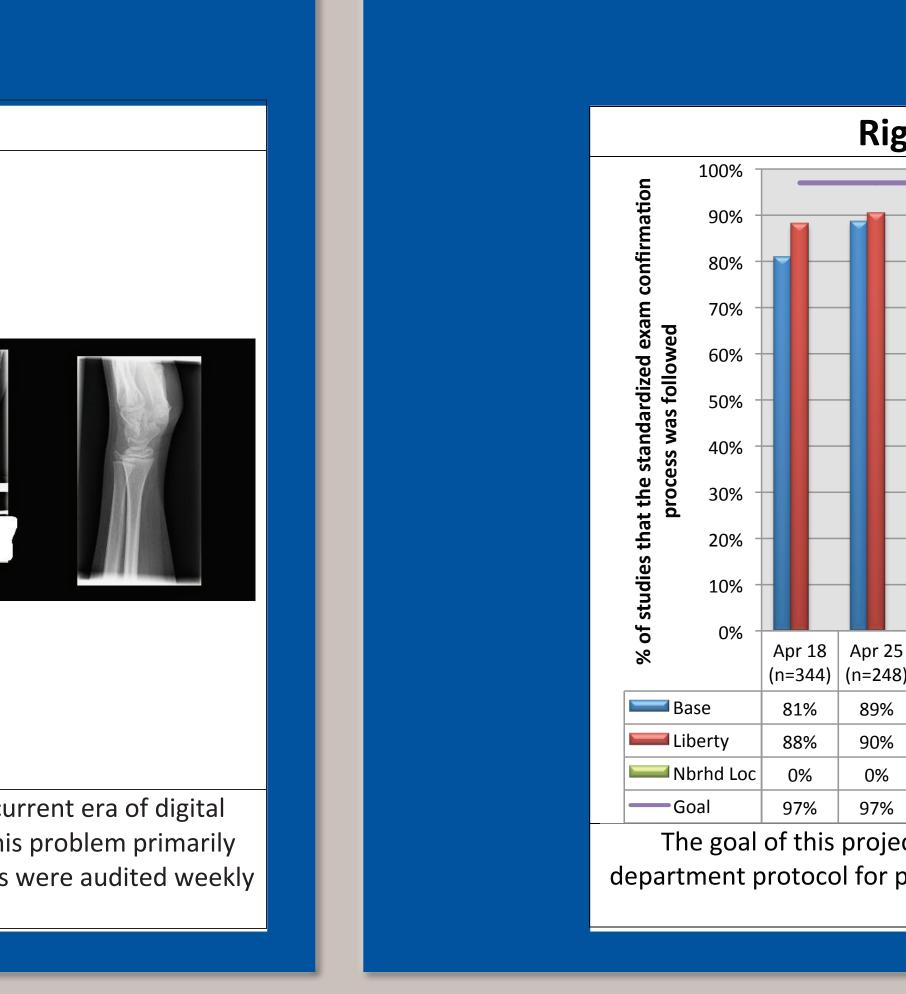
Two QuIC Questions have also been efficiently answered in our department because of the QuIC process. A concern was raised regarding poor use of "left" and "right" markers on radiographs by embers of our department. However, an initial QuIC Question audit of 431 radiographs over the previous 30 days showed that our technologists were adequately using "left" and "right" markers for radiographs greater than 99% of the time. Additionally, a concern issued by a staff-member about breast shielding for chest CTs was similarly answered by the QuIC Question process. In these instances, because the initial audit performance was acceptable and better than perceived by the person submitting the QuIC Project request form (Figure 1), no further data collection or

Figure 4b

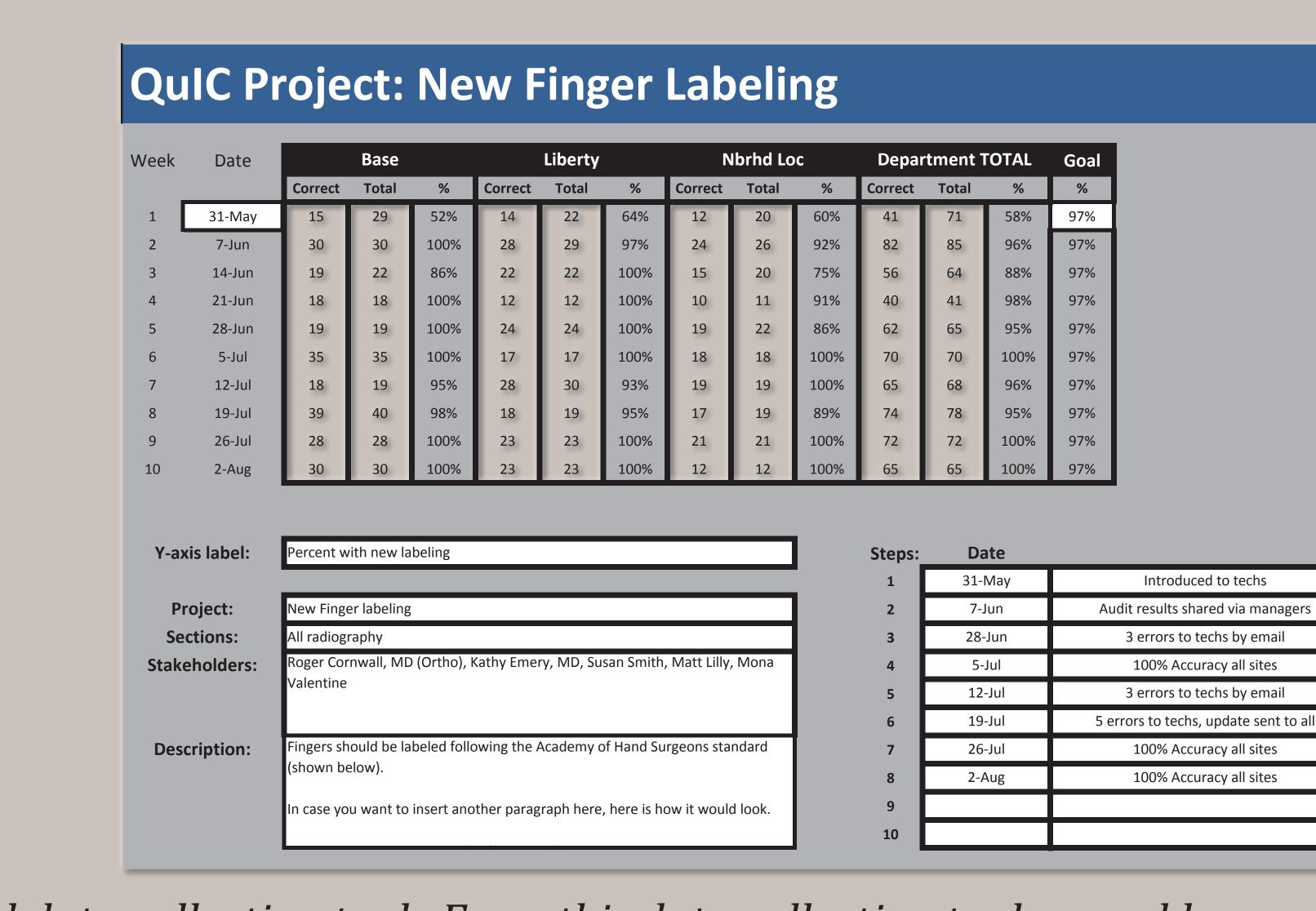
**Chest CT Slice Selection Project** 

# Figure 4a









Excel-based data collection tool. From this data collection tool, a weekly report is automatically generated. This data-collection tool serves as a template and can be used for any QuIC project.

Finally, in an effort to streamline QuIC Projects and limit manual labor required for their execution, we have developed a standardized template for data-collection (Figure 5) and automated report generation that can be used for any type of QuIC Project. This template is an Excel (Microsoft, Redmond, WA) based software solution. The blank form is used as a template for each/any QuIC Project. The report (Figure 3) is then automatically generated and used for weekly/periodic

## CONCLUSION

Development of the QuIC Project process and standardized data collection tool with automated report generation has enabled our department to rapidly, efficiently, and verifiably improve multiple focused aspects of individual performance.

Interventions are primarily focused on education and reminders to groups and individuals as necessary. Continuous data auditing confirms improved performance and provides continuous feedback to all stakeholders.

- 1.Development of an online QuIC Project request form.
- 2.Development of a web-based data collection tool with automated report generation and
- 3. Further automation of auditing, data-mining analytics (including natural language processing), and report generation in concert with improved IT integration between our institution's PACS, RIS, and

An initial audit is then performed to evaluate actual baseline performance. Occasionally, the quality review reveals satisfactory performance which is significantly better than that perceived by the individual submitting the QuIC Project request.

# prevalence of the sub-standard performance, and an auditable metric. Currently, QuIC Projects are Figure 2

# QuIC Project Phases