Summary Presentation of a novel external peer review quality assurance program for anatomic pathology focused on continuous improvement in patient quality, reduction in diagnostic variability, professional development, laboratory productivity and certification support.

Lab Quality Confab
PROCESS IMPROVEMENT INSTITUTE
Pursuing Excellence in Continuous Improvement

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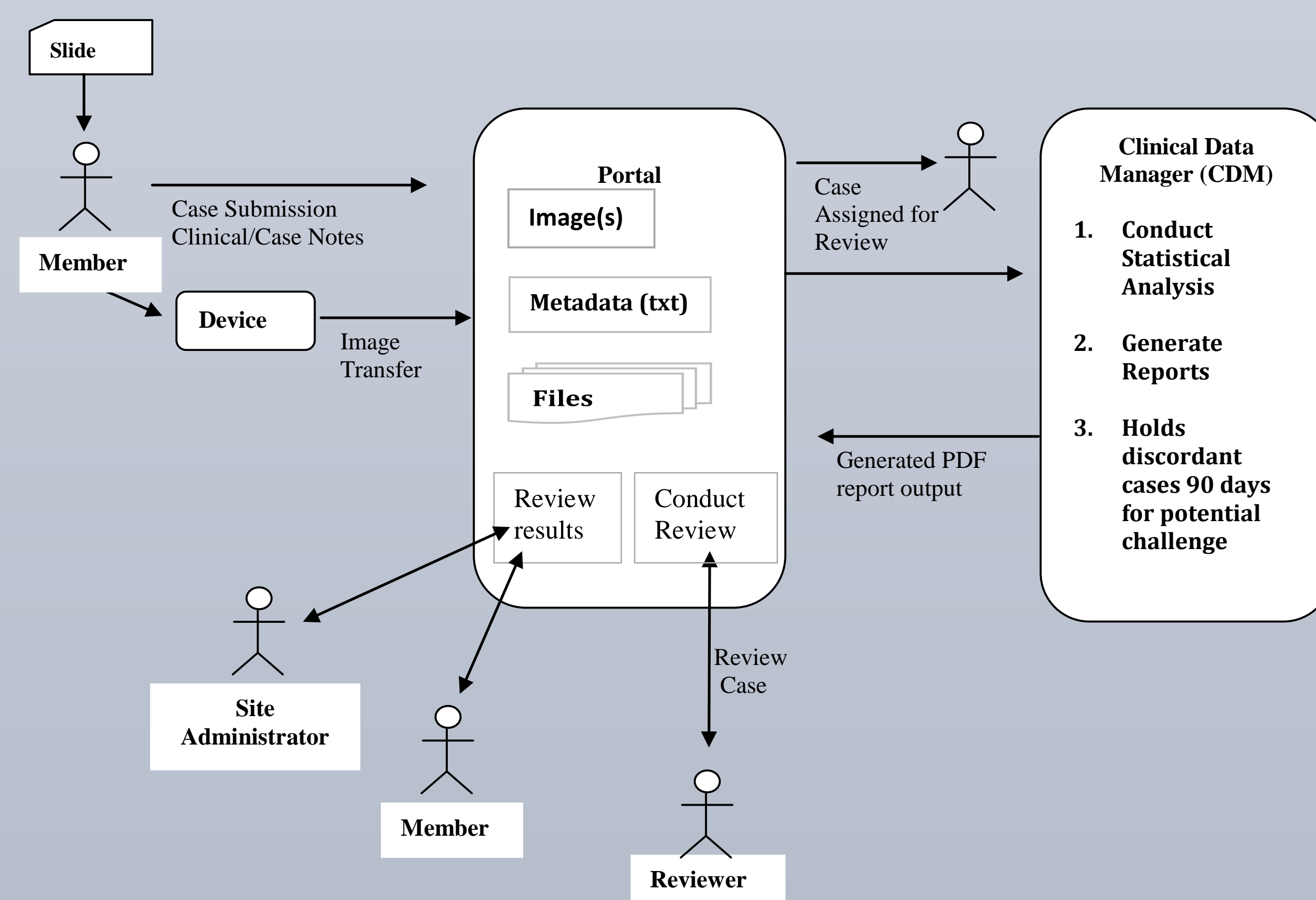mark.priebe@qualitystar.net

Introduction

The reduction of Medical Error is a major focus of professional, government, payer and patient organizations. Diagnostic Error is major component of Medical Error and Pathologist as a specialty have greater risk of liability when identifying malignancies, than other medical specialties. To support continuous quality improvement, peer review is recognized as a standard method for Physician quality assurance programs. Meta-analysis of external peer review by specialist for anatomic pathology has shown a significant enhancement in the identification of diagnostic concordance or discordance and helps to facilitate benchmarking activities around a shared set of metrics. However, current methods of participation in external peer review programs are limited in coverage, may require shipment of slides, are difficult to assure confidentiality and lack standardization, reducing the capability of providing longitudinal benchmarking. We will review the process and outcomes of a novel quality assurance program in its ability to address these issues.

Case Review Surgical Path.	IntraLab (Internal)	InterLab (External)
Reviewers	General with some specialist	Specialist and sub specialist
Range	0.08-1.7% (4 studies)	1-45% (12 studies)
Prospective Significant Error Rate[3]	Single Institution 0.13%	Multiple Institution 5.3%

J.Dahl, MD Quality, Assurance, Diagnosis, Treatment, and Patient Care Patient Safety & Quality Healthcare, March/April 2006

Canadian Association of Pathologists' (CAP-ACP) Interim Guidelines for the Investigation of Alleged Irregularities in Surgical Pathology
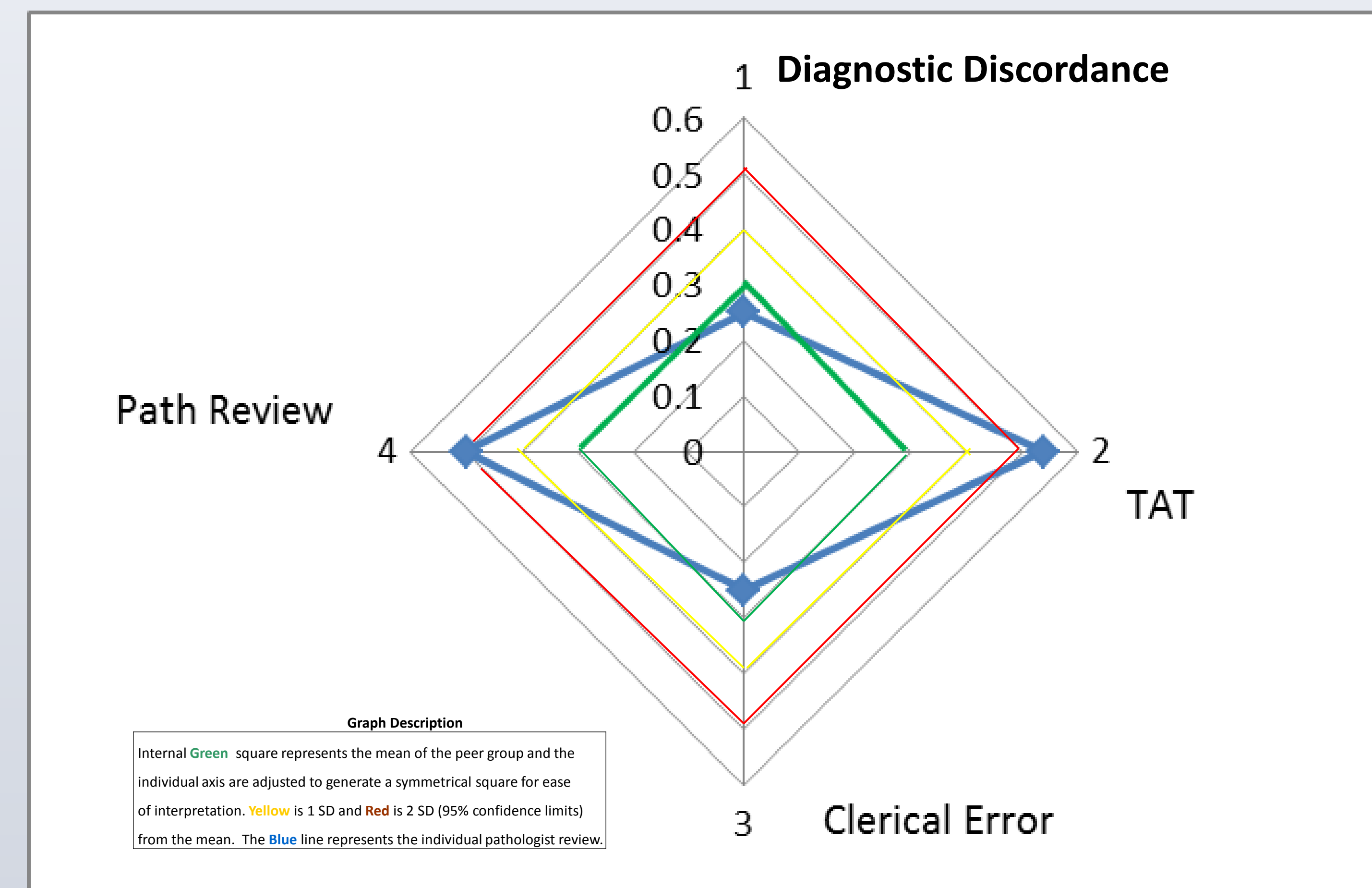
Methods

On membership, site and pathologist are assigned unique ID numbers. Retrospective cases for external peer review for quality assurance (QA) are randomly selected at a ratio of 1-10% pending tissue type and the member site QA policy. Randomness assures both potentially false negative and positive cases are included. Special software allows for electronic blinded case notes submission and the option to provide whole slide digital images or glass slides. Blinded cases are posted for review by specialist at pre-qualified academic medical centers. Cases are read and four key metrics are captured using the ADASP *Recommendation for Quality Assurance and Improvement in Surgical and Autopsy Pathology*, guidelines. Reviews are collected, metrics are converted into weighted numeric and after 20 cases by type are collected, the mean and +/- two standard deviations (SD) are calculated. Results are reported in multiple graphic formats on a monthly cycle.

[Process flow diagram]

- Slide
- Member — Case Submission Clinical/Case Notes
- Device — Image Transfer
- Portal
  - Image(s)
  - Metadata (txt)
  - Files
  - Review results / Conduct Review
- Case Assigned for Review
- Clinical Data Manager (CDM)
  1. Conduct Statistical Analysis
  2. Generate Reports
  3. Holds discordant cases 90 days for potential challenge
- Site Administrator
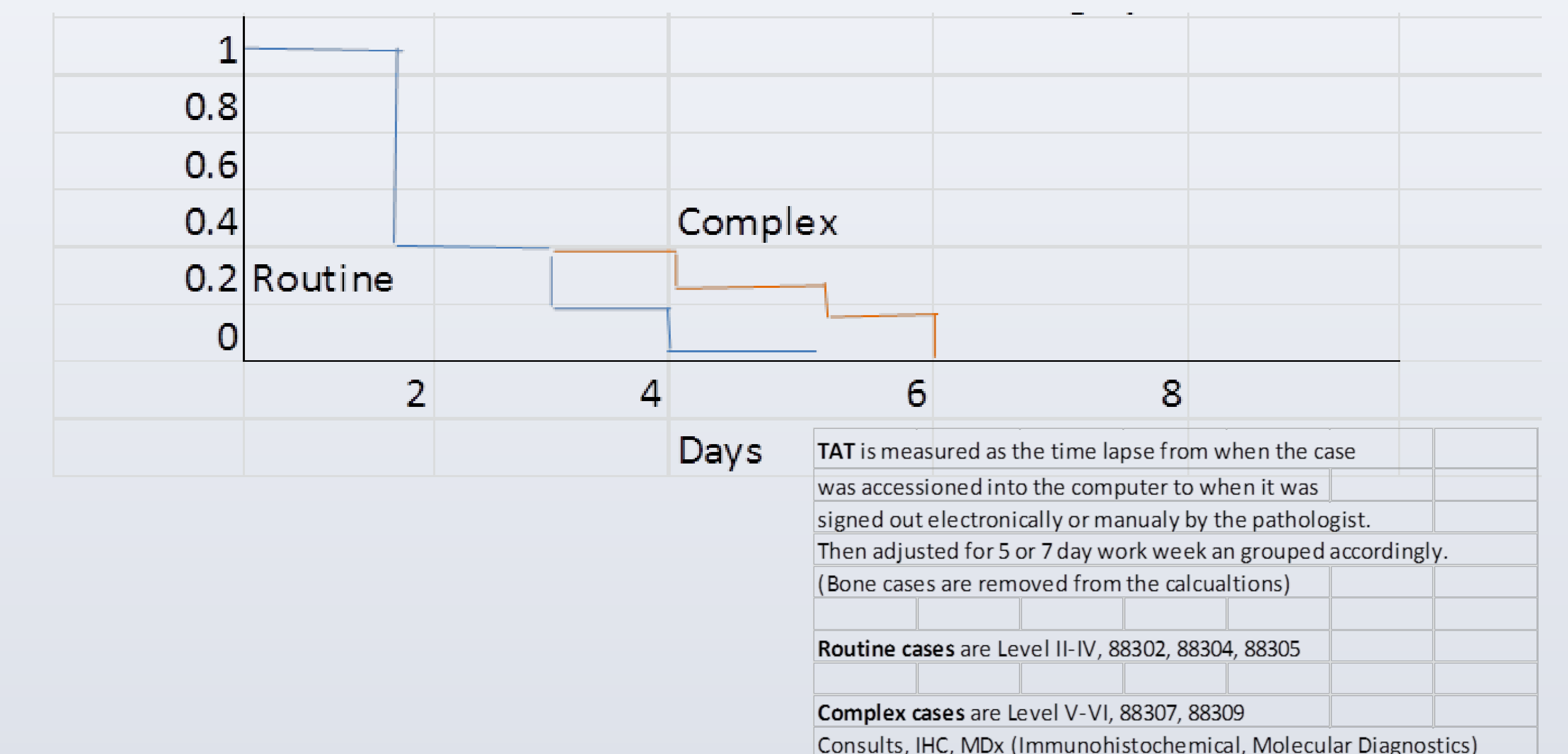- Member
- Reviewer
- Review Case

Results

Monthly reports using multivariate, Kaplan-Meier and hi-low graphs were generated. Benchmarking funnel graphs are not reported at this time however, due to the need for 6 months of reporting data. Initial review identified additional refinement needed in graphing turnaround time. Allowance had to be made for cases requiring bone decalcification and labs operating 7 versus 5 days per week.
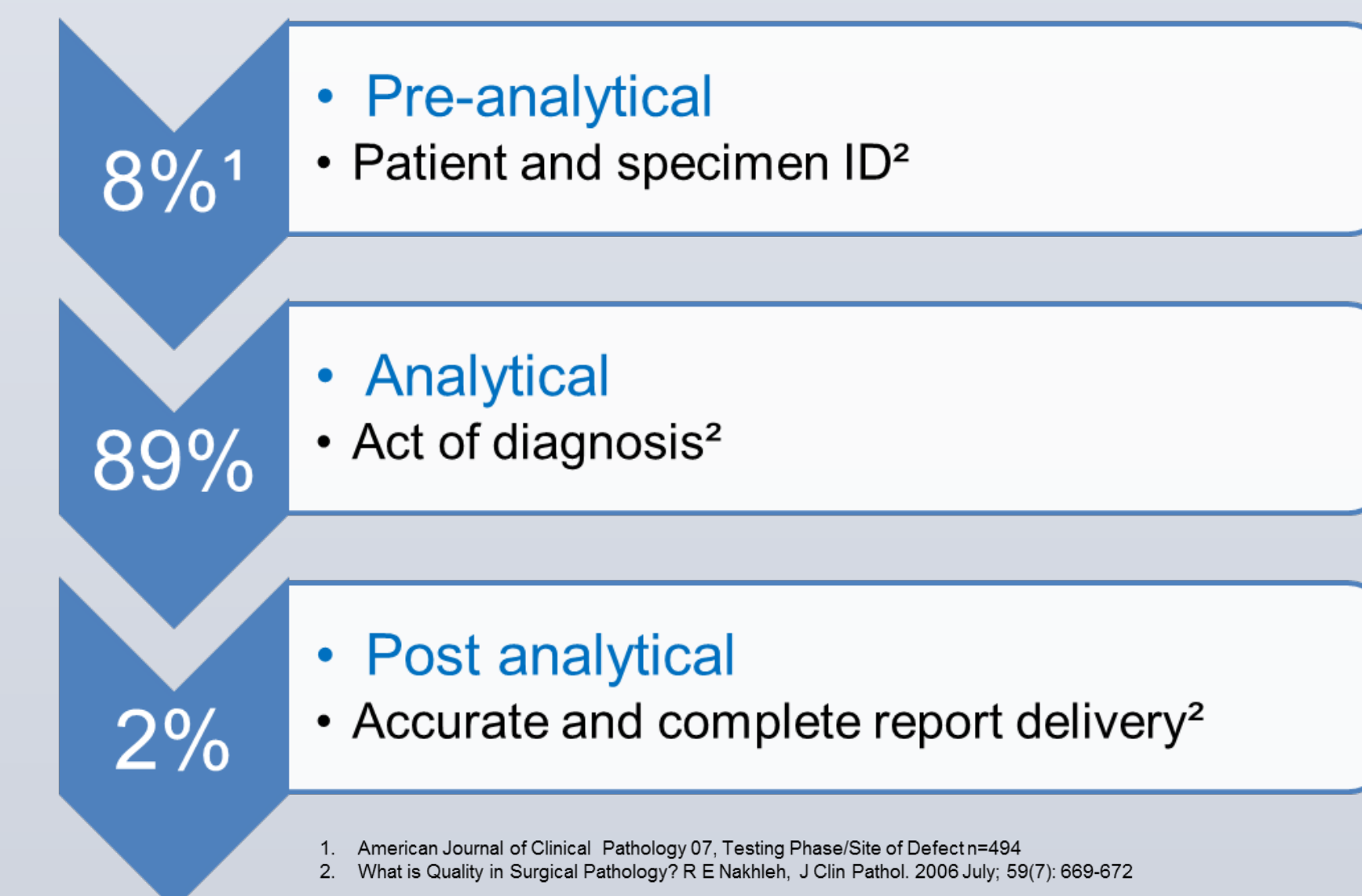
QualityStar Graph™

Diagnostic Discordance
TAT
Clerical Error
Path Review

(axis values: 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6; outer labels 1, 2, 3, 4)

Graph Description
Internal Green square represents the mean of the peer group and the individual axis are adjusted to generate a symmetrical square for ease of interpretation. Yellow is 1 SD and Red is 2 SD (95% confidence limits) from the mean. The Blue line represents the individual pathologist review.

Predictive Report

AP - Surgical - GU Prostate
PPS Bench Mark Graph

Weekly Case Volume

(y-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45)
(x-axis: 0 PPS, 1, 2, 3, 4)

Most / Less

Performance less than 2 SD of the group
Performance more than 2 SD of the group

Improving performance

Experience Level Is calculated from the years of experience and the volume of cases seen

Results (continued)

Turn-Around-Time (TAT) Kaplan-Meier plot of multivariate analysis.

(y-axis: 0, 0.2, 0.4, 0.6, 0.8, 1)
Complex
Routine
Days (x-axis: 2, 4, 6, 8)

TAT is measured as the time lapse from when the case was accessioned into the computer to when it was signed out electronically or manualy by the pathologist. Then adjusted for 5 or 7 day work week an grouped accordingly. (Bone cases are removed from the calcualtions)

Routine cases are Level II-IV, 88302, 88304, 88305

Complex cases are Level V-VI, 88307, 88309
Consults, IHC, MDx (Immunohistochemical, Molecular Diagnostics)

Diagnostic Error in Litigation

8%[1]	• Pre-analytical • Patient and specimen ID[2]
89%	• Analytical • Act of diagnosis[2]
2%	• Post analytical • Accurate and complete report delivery[2]

1. American Journal of Clinical Pathology 07, Testing Phase/Site of Defect n=894
2. What is Quality in Surgical Pathology? R E Nakhleh, J Clin Pathol. 2006 July; 59(7) 669-672
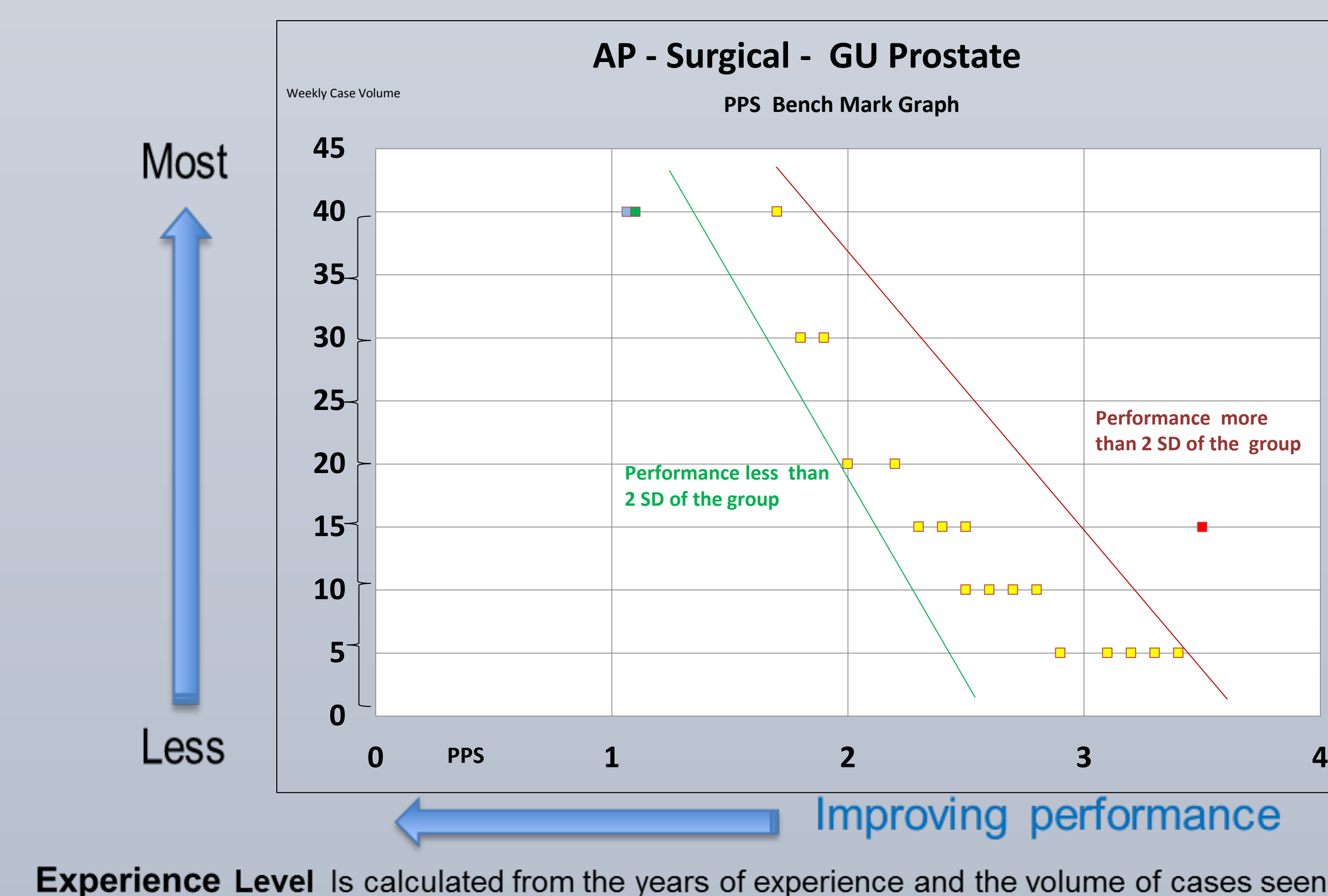
Conclusion

- Reports offer a standardized tool to review both the site and the pathologist performance as compared to a relative peer group
- Laboratories can learn what core competencies they have, area's that need improving and tract corrective action effectiveness over time.
- Institutions have a tool to measure standards of care across multiple sites, strategic compliance to the long term goals for cancer specialty focus and support marketability.
- As with all data, the reports are best used in consideration of the pathologist and laboratories environment. Pathologist acceptance and buy in is important for program success. Time needs to be taken to train users and gain their confidence that the program is accurate and fair.
- Initial assessment is part of this quality assurance program but the ongoing focus must be made on continuous improvement for these programs to be successful in enhancing patient safety and quality. Interpretation of the data should be reviewed in union with the site or person of focus and documented as part of an On Going Professional Practice Evaluation (OPPE).
- *This program has received the approval of the American Board of Pathology for maintenance of certification level IV quality assurance*
- *Approved by CMS under the Physician Safety and Quality System (PQRS) for incremental 0.5% payment on total pathology Medicare Part B*

Conflict of Interest
Mark Priebe is the Managing Director of QualityStar LLC