PQI
Practice Quality Improvement

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PQI - Rationale
- Significant issues of quality and safety in medicine
  - Institute of Medicine “To Err Is Human”
  - Industrial Experience from Manufacturing Process Control

Institute of Medicine Report
- 44k to 98k deaths per year from medical errors
- “Break the cycle of inaction

Aphorism
Physicians kill patients one at a time. Medical physicists kill them in large groups

Deming
Juran
Six Sigma
TQM
Feigenbaum

Statistical Process Control

Professional Standing
Practice Quality Improvement
Cognitive Expertise
MOC
Lifelong Learning & Self Assessment
Industrial Process Control

Key Issues

• Create a constancy of purpose focused on the improvement of products and services
• Reject poor workmanship, defective products & bad service
• Do not rely on inspection to control quality
• Focus on continuous improvement

Industrial Example

Transmission Tolerances

Distribution of Part Dimensions

Warranty Costs

Japan
US

“All Radiologic Physics diplomates must be trained in the process and procedures of quality improvement…”
First Steps

• Training is the First Step
• We need to learn to do effective projects that improve health and safety
• We need to incorporate PQI into the fabric of the culture of our work
• It took Toyota more than 20 years to transform its manufacturing culture

ABR PQI Process

1. Quality Improvement education (First cycle)
2. Collect data
3. Select project and metrics
4. Collect data
5. Implement improvement plan
6. Collect data
7. Select new project and metrics or modify improvement plan for previous project
8. Analyze data
9. Implement improvement plan
10. Collect data

The 10 yr Cycle

Types of Projects

Individual

Society

Sponsored

Project Categories

Safety for Patients, Employees & Public
Accuracy of Analyses & Calculations
Report Turnaround Times & Communication
Practice Guidelines & Standards
Surveys
Schedule

- Introduction and Rationale
- Introduction to Process Control – Statistic & Methods
- Application of Process Control to Radiotherapy
- PQI Examples – Radiotherapy
- PQI Examples – Diagnostic
- PQI Examples – Nuclear Medicine

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