ACS Spotlight Lecture: Update on ACS COT

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Verification Review Committee of the COT
Learning Objective

- Attendees will be able to articulate the implications and impact of the new criteria included in the *Optimal Resources for Care of the Injured Patient, 6th ed.*

- Attendees will be able to articulate a summary of the changes included in the Clarification Document of the Optimal Resources for Care of the Injured Patient.

- Attendees will be able to articulate a framework of the process for revising the *Optimal Resources for Care of the Injured Patient, 6th edition.*

- Attendees will be able to articulate the state of the art with respect to current process and plan for integrating TQIP, PIPS and Verification.
Disclosure

Nothing to Disclose
Acknowledgments
Thank You!

- Ronnie Stewart, MD, ACS COT Chair
- Rosemary Kozar, MD ACS COT VRC Chair
- R. Todd Maxson, MD ACS COT VRC Vice Chair
- Donald H. Jenkins, MD ACS COT PIPS Chair
- Michael Chang, MD ACS COT TQIP Chair
- Molly Lozada ACS COT VRC
- Tammy Morgan, ACS COT Trauma Center Programs (TQIP, PIPS and VRC)
Early History of Hospital Quality Improvement

- 1913 The American College of Surgeons
- 1916 Earnest Codman: “A Study of Hospital Efficiency”
- 1917 ACS: The Hospital Standardization Program becomes the Joint Commission in 1952
- 1965 SSA—Medicare/Medicaid conditions of participation
1960’s Advancements

- National Academy of Sciences: Accidental Death and Disability: The neglected disease of modern society:
  - EMS
  - Emergency medicine
  - Trauma Surgeons
  - Trauma centers and systems

- Public Hospitals – de facto trauma centers
Public Hospitals Defacto Trauma Centers

- Cook County
- St. Louis City
- Baltimore City
- DC General
- LA County
- Boston City
- LA County
- DC General
- St. Louis City
- The Med
- Ben Taub General
- Charity Hospital
- Detroit Receiving
- Kings County
- Grady Memorial
- Harborview
- Bellevue
- SFGH
- Boston City
- Cincinnati General
- Charity Hospital
Avedis Donabedian 1966

- Structure
- Processes
- Outcomes

(Structure, process, outcome, access, safety, costs and patient experience)
COT VRC Model

- Set relevant high standards
- Build and insure the right infrastructure, leadership and processes aimed at improving quality and reducing mortality.
  - People
  - Facilities
  - Resources
- Foster the collection and use of risk adjusted *clinical data* for performance improvement
- Implement a Verification Process by practicing clinical experts

*Pioneered and Developed by COT*
Development and Implementation

- ACS COT model for trauma center verification
- **Professional Model** – the criteria, rules and standards developed with the explicit statement that *the patient’s needs come before the surgeon, the hospital or the organization*
- **Multidisciplinary professionals meeting**, discussing, defining and redefining criteria for a trauma system – standards developed by consensus
- **Partnering with state health agencies/States**
- Evidenced based self governance
Program’s Growth
(Includes consultations and onsite Focused visits)

Up to > 450 verified trauma centers
What Have Been the Outcomes?

- Significant reductions in complications and deaths
- Improved access to trauma care in many areas
- Increased sophistication of trauma systems
- Increased funding for trauma systems and trauma centers
A National Evaluation of the Effect of Trauma-Center Care on Mortality


The Effect of Organized Systems of Trauma Care on Motor Vehicle Crash Mortality

Avery B. Nathens, MD, PhD
Gregory J. Jurkovich, MD
Peter Cummings, MD, MPH
Frederick P. Rivara, MD, MPH
Ronald V. Mayer, MD

In 1968, 45,480 persons died in motor vehicle crashes (MVCs) in the United States.3 While traffic crashes continue to be the single most important mechanism of injury death, mortality due to traffic crashes decreased from 22.7 per 100,000 person-years in 1970 to 15.8 per 100,000 person-years in 1985.4 Many factors contributed to this decrease in mortality, including improvements in road and automotive design and the regulation of restraint laws and laws restricting drinking and driving.4 The possible contribution of organized systems of trauma care to the decrease in mortality due to crashes has not been evaluated.

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35% reduction
6,720 lives
Standards Creation to Outcomes Based Verification: What is the way forward?
Resource Guide

- PDF available, www.facs.org/quality-programs/trauma/vrc/resources

- Released and available - October 2014

- Implementation - July 1, 2015
Optimal Resources for Care of the Injured Patient “Orange Book”

- Raises Standards – when evidence or consensus existed
- Narrows difference between Level I and II
- Mandates more participation in the multi-disciplinary processes
- Prescribes PI metrics
- Benchmarking
Out with the FAQ and in with the Clarification Document. Check it often.
## Verification Change Log

Check it often

<table>
<thead>
<tr>
<th>Chapter</th>
<th>CD #</th>
<th>Level I</th>
<th>Level II</th>
<th>Level III</th>
<th>Level IV</th>
<th>PTC I</th>
<th>PTC II</th>
<th>Date Change</th>
<th>Criteria</th>
<th>Resources 2014 Orange Book Description of Criteria</th>
<th>Clarification</th>
<th>Type</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1-1</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td>New</td>
<td>The individual trauma centers and their health care providers are essential system resources that must be active and engaged participants (CD 1-1).</td>
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<td>TYPE II</td>
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<td>1-2</td>
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<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td>New</td>
<td>They must function in a way that pushes trauma center–based standardization, integration, and PIPS out to the region while engaging in inclusive trauma system planning and development (CD 1-2)</td>
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<td>TYPE II</td>
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<td>II</td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td>New</td>
<td>Meaningful involvement in state and regional trauma system planning, development, and operation is essential for all designated trauma centers and participating acute care facilities within a region (CD 1-3)</td>
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<td>2-1</td>
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<td>II</td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td>New</td>
<td>This trauma center must have an integrated, concurrent performance improvement and patient safety (PIPS) program to ensure optimal care and continuous improvement in care (CD 2-1).</td>
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<td>III</td>
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<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td></td>
<td>Surgical commitment is essential for a properly functioning trauma center (CD 2-2).</td>
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<td>I</td>
<td>II</td>
<td>7/1/2014</td>
<td>New</td>
<td>Trauma centers must be able to provide the necessary human and physical resources (physical plant and equipment) to properly administer acute care consistent with their level of verification (CD 2-3).</td>
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<td>TYPE II</td>
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<td>III</td>
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<td>I</td>
<td></td>
<td>7/1/2014</td>
<td>Revised</td>
<td>Through the trauma PIPS program and hospital policy, the trauma director must have responsibility and authority for determining each general surgeon's ability to participate on the trauma panel based on an annual review (CD 2-5).</td>
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<td>TYPE II</td>
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Participant Education

- Monthly webinars
  - Launched June 2016
  - Decrease volume of emails to, Mlozada@facs.org and COTVRC@facs.org
  - Recordings available on VRC Repository webpage, www.facs.org/quality-programs/trauma/vrc/resources
Chapter 1: Regional Trauma Systems

- Expanded and formalized the expectation that individual centers are active participants in their regional trauma system.

- Clarification that a Performance Improvement and Patient Safety Program is required at all levels of trauma centers.
Chapter 2: Trauma Center Levels

- Level I and II Centers equivalent responsibilities for participation
  - Qualified attending surgeons must participate in major therapeutic decisions, be present in the emergency department for major resuscitations, be present at operative procedures, and be actively involved in the critical care of all seriously injured patients (CD 2–6).
- Participation requirements include critical care
- Attending EM Physician may begin resuscitation
- Expanded Level IV descriptions
- All Levels must have a multidisciplinary trauma peer review committee
Plan and processes when on diversion

When a trauma center is required to go on bypass or to divert, the center must have a system to notify dispatch and EMS agencies (CD 3–7). The center must do the following:

- Prearrange alternative destinations with transfer agreements in place
- Notify other centers of divert or advisory status
- Maintain a divert log
- Subject all diverts and advisories to performance improvement procedures
A very important aspect of interhospital transfer is an effective PIPS program that includes evaluating transport activities (CD 4–3).

Perform a PIPS review of all transfers (CD 4–3).
Chapter 5: Hospital Organization and the Trauma Center

- The trauma program must involve multiple disciplines and transcend normal departmental hierarchies (CD 5–4).
- Activation criteria clarifications and guidelines
- Multiple changes and clarifications regarding responsibilities and qualifications of trauma medical director and trauma program manager
CMEs from Board Recertification

To meet the external CME requirement, will allow 33% of board recertification to count as trauma or critical care external CME for all specialties:

- Trauma Surgeons
- Orthopaedic Surgeons
- Neurosurgeons
- Emergency Medicine

** All Critical Care counts

New Centers and New Providers – responsible for ONE YEAR of CME
Level I and II TMD: membership and participation in regional and national trauma organizations membership.

- Desired at a level III.
- Membership in the State COT does not qualify
- AAST
- EAST
- WTA
- COT, etc.
Chapter 5: Trauma Medical Director

- The TMD must be dedicated to one trauma center. The TMD cannot administer two trauma centers.

- The TMD must be a full time/permanent position (not locums or intenerate)
Chapter 5: Trauma Surgeons

- **No non-core surgeons**

- All surgeons must have CME and all must attend > 50% of the peer reviews: this includes pediatric surgeons at PTC’s
  - Video conference is acceptable.
ED Response

- Tracking of subspecialty responses for activation and consultation

- Define for Neuro and Ortho what constitutes an “URGENT” consultation – 30 min. response
  - Write it down
  - Track it in PI
  - Be prepared to show numerator/denominator
Chapter 6: General Surgery

- Clarified response times for highest level of activation
  - Level I and II – 15 minutes with 80% threshold
  - Level III and IV – 30 minutes with 80% threshold
  - Will be tracked from patient arrival to presence of surgeon in ED

- There should be *SOMETHING* for the second tier of activation
Clarified board certification language

Level I & II Presence in the Emergency Department at all times

Occasionally, in a Level III trauma center, it is necessary for the physician to leave the emergency department for short periods to address in-house emergencies. Such cases and their frequency must be reviewed by the performance improvement and patient safety (PIPS) program to ensure that this practice does not adversely affect the care of patients in the emergency department (CD 7–3).
Emergency Medicine

- Must have a liaison to the pre-hospital PI process
- May be different than the liaison to the trauma program
- Must demonstrate participation in the development and promulgation of pre-hospital protocol
Emergency Medicine Physicians

- Board certification or eligibility for certification by the appropriate emergency medicine board according to current requirements or the alternate pathway (non US or Canadian) is essential for physicians staffing the emergency department and caring for trauma patients in Level I, II, and III trauma centers (CD 7–6).

- Level III and IV physicians boarded in other specialties such as Internal Medicine, Family Practice, etc., may be included on the trauma call; however, they must be current in ATLS. (CD 7-15)

- For Level I and IIIs, EM physicians seeing trauma patients will need to have EM boards
Multiple changes
Must have a comprehensive neurotrauma diversion plan
Comprehensive plan for when a neurosurgeon is encumbered
Level III centers caring for neurosurgical patients must have neurosurgeon liaison on the multidisciplinary peer review committee
Neurosurgery

- Clinical Practice Management Guidelines
  - Based on the BTF guidelines

- Compliance with the guidelines is expected
- Harder than it may seem

- 30 minute response based on previously agreed upon emergency diagnoses (ortho – the same)
Chapter 9: Orthopaedic Traumatologist

- Level I the orthopaedic care must be overseen by an individual who has completed a fellowship in Orthopaedic Traumatology approved by the OTA. (CD 9-5)

- Those who have not completed OTA Fellowship must be reviewed by COT Orthopaedic Specialty Workgroup— all but one have been approved.

- PTC Level I, the above requirement may be met by having a formal transfer agreements – transfers (or potential transfers) are reviewed as part of the performance improvement process. (CD 9-5) Type I
Alternate Pathway Criteria

- Beginning January 1, 2017 all non-boarded US or Canadian trained surgeons not yet inducted as a FACS will undergo the alternate pathway.

- Surgeons with FACS prior to 2017 are not required to undergo the Alternate Pathway.

- Manageable process, please notify the ACS COT office early.
Alternate pathway: requirements (non-US or Canadian trained surgeons)

- On-site visit only once as long as the surgeon remains active in trauma care at the same institution.

- At the time of reverification, the following is still needed:
  - 48 hours of trauma-related CMEs or IEP
  - 50% attendance at ≥50% of the trauma PI meetings
  - Membership/attendance at local, regional or national trauma meetings during the past 3 years
  - Evaluation by TMD that care is comparable
Chapter 10: Pediatric Trauma Care

- All Level I and II pediatric trauma centers must have a dedicated pediatric trauma program manager (CD 10–3)
- Pediatric Level II trauma center must have one Pediatric Surgeon on
- The pediatric Level I center’s research requirement is equivalent to that of adult Level I trauma centers (CD 10–10).
- In combined Level I adult and pediatric centers, half of the research requirement must be pediatric research (CD 10–11).
Clarification: Director for Surgical Critical Care

- Level I Pediatric Trauma Center- The surgical director of the pediatric intensive care unit must participate actively in the administration of the unit...and **should** be board certified in surgical critical care. (CD 10–33, Type I)
In a Level I pediatric trauma center, the pediatric trauma medical director should be board certified or eligible...pediatric surgery or, alternatively, a pediatric surgeon who is a Fellow of the American College of Surgeons with a special interest in pediatric trauma care.

If the pediatric trauma medical director is not board certified or board eligible in pediatric surgery, then this individual must be a board-certified general surgeon or general surgeon eligible for certification by the American Board of Surgery according to current requirements.
Additionally, this individual must:
1. Be credentialed to provide pediatric trauma care,
2. Be a member of the adult trauma panel;
3. Participate in trauma call;
4. Accrue an average of 16 hr. annually or 48 hours in 3 years of verifiable external CME, of which at least 12 hours (in 3 years) must be related to clinical pediatric trauma care;
5. Be current in PALS or the Society of Critical Care Medicine Fundamentals of Pediatric Critical Care;
6. Formal relationship with a pediatric TMD at another Level I PTC (Level II this is encouraged).
Level I and II centers, Anesthesia services must be available in-house 24 hours a day (CD 11–4).

Level I and II centers, the OR must be adequately staffed and available within 15 minutes. (CD 11–14)

Level I and II centers, qualified radiologists must be available within 30 minutes to perform complex imaging studies, or interventional procedures. (CD 11-33)

In Level II and III centers, the ICU director or co-director must be a surgeon who is currently board certified. (CD 11–54)
Clarification: Collaborative Services Anesthesia

- Level I and II centers - Board certification or eligibility by an appropriate Anesthesia is essential for Anesthesiologist taking call. CD 11-43

- This was changed to: “The Anesthesiologist liaison must be currently board certified or eligible for certification by an appropriate Anesthesia board according to current requirements in Anesthesia.”
New! Alternate Pathway Criteria for non-US or Canadian board certified Anesthesiologist Liaison

- Notify the ACS COT office early
- No on-site visit by specialist
- Documentation reviewed by Review Team
- At the time of verification, the following is needed:
  - ATLS provider or instructor
  - 48 hours of trauma-related CMEs or IEP
  - 50% attendance at ≥50% of the trauma PI meetings
  - Membership/attendance at local, regional or national trauma meetings during the past 3 years
  - Evaluation by TMD that care is comparable
Anesthesia Services

• Anesthesia services at Level I and II must be available in house 24 hrs./day. (CD 11-4)

• Level I and II anesthesiologist must respond within 30 min and be present for all operations. (CD 11-5)

• All programs were notified.
Anesthesia requirements may be fulfilled by senior residents (CA-3), CRNAs or C-AA credentialed to begin an emergency case. The attending anesthesiologist must be notified and must be available within 30 minutes and be present for all operations. (CD 11-5)

Centers with CRNAs in house for OB- this would be acceptable.
Level III Anesthesia

- In House is not required but availability of anesthesia services (Anesthesiologist or CRNA or C-AA) must be available within 30 minutes.

- A CRNA or C-AA may provide operative anesthesia under on-site physician supervision.
Clarification: Collaborative Services Radiology

- Level I and II centers - Board certification or eligibility by an appropriate radiology board is essential for Radiologists taking call. CD 11-43

- This was changed to: “The Radiology liaison must be currently board certified or eligible for certification by an appropriate Radiology board according to current requirements in Radiology.”
Timeliness of Care

- Radiology
  - Available to read or perform studies within 30 minutes of notification
  - Angio - 30 min.  MRI – 1 hour
  - Changes in interpretations must be tracked in PIPS
In all Level I, II, and III centers, the timely response of credentialed providers to the ICU must be continuously monitored as part of the PIPS program. (CD-11-60)

Level I, II, and III centers, the ICU liaison must attend at least 50% of the peer review meetings, with documentation by the trauma PIPS program. (CD 11–62)

In Level III trauma centers, the PIPS program must review all ICU admissions and transfers of ICU patients to ensure that appropriate patients are being selected to remain at the Level III center vs. being transferred to a higher level of care. (CD 11–57)
Liaisons

- Orthopaedics, Neurosurgery, EM, Radiology, Anesthesia, CCM
  - For EM, neurosurgery, orthopaedic, anesthesiologist, radiology, and ICU: liaison changed to the liaison or a single pre-determined representative to the multidisciplinary peer review committee must attend a minimum of 50% of these meetings

- CME requirements for all
  - Not for Anesthesia or Radiology
Advanced Practice Professionals

- Levels I, II, III, and IV.

- APRNs, PAs who participate in the evaluation and resuscitation of trauma patients during the activation must be current in ATLS. (CD 11-86)

- Includes ED and trauma.
  - Does not include consults and fast-track.
Chapter 12: Rehabilitation

Rehabilitation consultation services, occupational therapy, speech therapy, physical therapy, and social services are often needed in the critical care phase and must be available in Level I and II trauma centers. (CD 12–2)
Chapter 13: Rural Trauma

- Significant updating and clarification regarding transfer of patients following principles of RTTDC.
Chapter 15:

- One full-time equivalent employee dedicated to the registry must be available to process the data capturing the NTDS data set for each 500–750 admitted patients annually. (CD 15–9)
Internal Educational Process

For providers participation in trauma care:

- 16 external trauma-related CMEs or participation in an IEP based on practice based learning and PIPS

- The IEP must occur at least quarterly
  - Approved by the TMD
  - Functionally equivalent to 16 hours of CME annually
Chapter 16: Moving Towards Hard Wiring Trauma Performance Improvement and Patient Safety in the Verification Process
Chapter 16: PIPS

- Comprehensively revised.
- Clarified process structure and incorporation of outcomes.
- There must be adequate administrative support to ensure evaluation of all aspects of trauma care. (CD 5–1)
- Both core and non-core surgeon participation
- Mortality Review—all trauma-related mortalities must be systematically reviewed and those mortalities with opportunities for improvement identified for peer review. (CD 16–6)
Trauma PI

- PI is more prescriptive – TOPIC Course by STN
- Attendance may be met through teleconferencing or videoconferencing participation. Audio conferencing should be limited.
- In combined centers, a representative (TMD or designee) from the adult or the pediatric program must attend the other’s peer review meeting, and must ensure dissemination of communication to the other panel members.
Process Improvement

- Describes PI event / concern

- PI level:
  - Level 1 TPM
  - Level 2 TMD, liaison review
  - Level 3 Committee involvement

- Action Plan

- Education, guideline, practice changes

- Loop closure (integration of IEP)
Process Improvement

- Practice guidelines, protocols
- Compliance and outcomes are tracked
- TQIP – regional, state or National
- Prescriptive – Actively soliciting input
  - Ortho
    - Timeliness of abx and washouts, fixation
    - Arrival
  - Neurosurgery
    - Compliance with a pathway for the care of patients with TBI
Risk Adjusted Benchmarking

- Level I, II and III centers must use a risk adjusted benchmarking system to measure performance and outcomes. (CD 15-5)

- Effective January 1, 2017, all verified trauma centers must be enrolled in ACS TQIP.
Chapter 18: Prevention

- Multiple changes with an increased emphasis on prevention.
- Each trauma center must have someone in a leadership position that has injury prevention as part of his or her job description. (CD 18-2)
- At Level I and II trauma centers, all patients who have screened positive must receive an intervention by appropriately trained staff, and this intervention must be documented. (CD 18-4)
Research

- One paper from Acute Care Surgery will be accepted.

- Pediatric Programs
  - ½ must be pediatric specific

- Consortium papers count for all institutions.
Integrating VRC, PIPS, TQIP

Goals

- Better for the patient
- Better for trauma centers
- Better for trauma program managers & TMDs
Automobile Analogy

- VRC Program = design, manufacturing and maintenance
- PIPS Program = drivetrain
- TQIP = dashboard
Best Practices

Next....Palliative Care
Proposed Revision of 2014 Resource Guide

**Principles for Revision**

1. Continuous improvement
2. Incremental revision
3. Simplify where possible
4. Data driven
5. Move towards outcome

Time Period for Implementation by ACS Trauma Centers and VRC

Criteria Operational Open for Stakeholder Comment 6 Months

Criteria Review and Revision by COT 1 Year Time Period

New Draft Criteria Open for Comment 3-6 Months

Final Tuning by COT 6 Months

Criteria Published
The American College of Surgeons Committee on Trauma (ACS COT) is very pleased to open this new area for online public comment on the 2014 standards published in the *Resources for Optimal Care of the Injured Patient*.

The ACS COT seeks your participation in its goal to review and assess trauma center criteria on an ongoing basis, in order to ensure appropriateness, timeliness, and practicality.

By clicking on chapter links below, you may provide comment on some or all standards within the chapter. You may provide feedback on just one chapter or all chapters. Your responses will be held in confidence, and will be used to strengthen COT Verification, Review, and Consultation (VRC) processes and standards.

Thank you very much for joining our efforts to support and advance trauma care.

**Survey Links**

- Chapter One
- Chapter Two
- Chapter Three
- Chapter Four
- Chapter Five

[https://www.facs.org/quality-programs/trauma/vrc/public-comment](https://www.facs.org/quality-programs/trauma/vrc/public-comment)
All Are Important

- Leadership – doing the right thing
- Structure and process – doing things right
- Outcome – getting the right results
- Safety – getting the right results without harm
- Access – getting the patient in the right time
- Costs – getting right results with the right cost
- Patient experience – the right service
Physician and Nurse Leadership are Critical

- Commitment to Performance Improvement Process at local site and the COT

- Commitment to improving the verification process consistent with optimum patient care

Build consensus around the doing the right thing for the patient
Future Direction with Verification

Continuous updates to online PRQ
○ Based on hospital and reviewer feedback
○ In sequence with chapter (follow the manual)
○ Input from TQIP

Report Writer System (RWS)
○ Synchronized with New PRQ
○ Report format modified from a narrative document to a shorter summary
Future VRC Approach?

Good (risk adjusted) Outcomes

Good VRC Processes and Structure

✔️

Poor VRC Processes and Structure

✖️

Poor RA Outcomes

✔️

Not verified

? Verify + Implement approved COT PIPS Plan TQIP Best Practices

Verify + Implement approved COT PIPS Plan TQIP Best Practices
Thank you