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Guidelines for Field Triage of Injured Patients (Exhibit 2) and Trauma Team Activation (Exhibit 3)
Rule Advisory Committee
November 1, 2022
10:30 AM – 12:00 PM via Zoom

RAC MEMBER ATTENDEES
Ann Rust, Trauma Medical Director, Good Shepherd Medical Center, ATAB 9
Dana Pursley-Haner, Sherman County EMS, ATAB 6, State EMS for Children Advisory Committee representative
Danielle Meyer, Director of Public Policy, Oregon Association of Hospital and Health Systems
Danny Freitag, EMS Manager, Santiam Hospital, ATAB 2
Frank Ehrmantraut, EMS Chief, Polk County Fire District No. 1, ATAB 2
Jennifer Serfin, Trauma Medical Director, Good Samaritan Regional Medical Center, ATAB 2
Jeremy Buller, Trauma Program Coordinator, St. Charles Medical Center, ATAB 7
Jerimiah Kenfield, Battalion Chief, Crook County Fire and Rescue, ATAB 7
Jonathan Jones, Clinical Trauma Coordinator, Providence Medford Medical Center, ATAB 5
Jordan Tyer, Firefighter/Paramedic, Pendleton Fire and Ambulance, ATAB 9
Kathy Tompkins, Trauma Program Manager, Salem Health, ATAB 2
Mackenzie Cook, Trauma Surgeon, Oregon Health & Science University, ATAB 1
Matt Dale, EMS Chief, Canby Fire, ATAB 1
Matthew Black, Clinical and Quality Manager, Falck Northwest, ATAB 2
Matthew Edinger, Trauma Coordinator, Asante Rogue Regional Medical Center, ATAB 5
Mike Kissell, Division Chief of EMS, Corvallis Fire Department, ATAB 2
Mindy Stinnett, Trauma Program Manager, Blue Mountain Hospital, ATAB 7
Sarah Doherty, Trauma Nurse Coordinator, St. Anthony Hospital, ATAB 9
Stacey Holmes, Trauma Program Manager, Sky Lakes Medical Center, ATAB 7
Trisha Preston, EMS Operations Officer, Dallas Fire and EMS, ATAB 2
Victor Walco, Director of Business Development, Life Flight Network, Multiple ATABs
INVITED SUBJECT MATTER EXPERT
Craig Newgard, Director, Center for Policy and Research in Emergency Medicine, OHSU
INTERESTED PARTY ATTENDEES
Amy Slater, Trauma Program Manager, Salem Health
Anthony Huacuja, Adventist Health Tillamook
Charlette Lumby, Trauma PIPS Coordinator, Salem Health
Joey Van Winckel, Trauma Nurse Coordinator, West Valley Hospital
Katie Hennick, Trauma Program Manager, Good Samaritan Regional Medical Center
Michael Gay, Government Relations Director, Salem Health

Oregon Health Authority Staff	
Dana Selover	Public Health Division, Health Care Regulation & Quality Improvement

David Lehrfeld	Public Health Division, EMS and Trauma Systems
Madeleine Parmley	Public Health Division, EMS and Trauma Systems
Mellony Bernal	Public Health Division, Health Care Regulation and Quality Improvement
Rachel Ford	Public Health Division, EMS and Trauma Systems

Welcome, Housekeeping and Agenda Review

Mellony Bernal introduced self and welcomed attendees to the Guidelines for Field Triage of Injured Patients (Exhibit 2) and Trauma Team Activation (Exhibit 3) Rule Advisory Committee (RAC).

- Staff instructed persons on the virtual meeting to identify themselves by typing their name, organization and title into the Chat and identify themselves as a RAC member or member of the public.
- Staff shared that public members may listen to the discussion but may not participate. Members of the public were welcome to submit comments or questions for consideration at the conclusion of the RAC meeting by emailing Mellony Bernal, Rachel Ford, or Madeleine Parmley. Email addresses were shared via Chat.
- RAC members were instructed to use the Chat feature to indicate if they wanted to speak by typing the word "Comment." RAC members who do not want to speak but want the EMS and Trauma Systems Program to consider information were asked to type into the Chat “For the Record” and include the information they wish to share. RAC members were told they would be called upon in the order they appeared on the Chat.
- It was noted that after the RAC process has concluded, there will be an opportunity for persons to provide oral public comments at a public hearing or to send written comments during the public comment period. Information about the notice of proposed rulemaking and public hearing will be shared by email.
- The October 24, 2022, RAC meeting notes were emailed to RAC members and it was asked that corrections to the minutes be sent via email to M. Bernal.
- The agenda was reviewed by M. Bernal.

Oregon History of Exhibit 2 and Exhibit 3

Dr. David Lehrfeld welcomed members to the second RAC meeting. Dr. Lehrfeld shared an overview of the history of the field triage guidelines which were initially published by the American College of Surgeons (ACS) in 1986 with periodic updates occurring every few years. Oregon initially adopted field triage guidelines by administrative rule in 1987 and amended the rules in 1993, 1995, 2000, and 2013.

In follow-up to a question from the October 24, 2022, RAC meeting, Dr. Lehrfeld noted that the hospital trauma team activation criteria were initially adopted in administrative rule in the year 2000. **Follow-up – after further review it appears that the trauma team activation criteria were initially adopted in 1995.** It is unknown why the trauma team activation criteria were initially adopted due to lack of records; however, it is likely that field triage guidelines were used for predictors of serious injury and then made into activation criteria. Every time the field triage guidelines were amended, there was a corresponding amendment to the trauma team activation criteria.

Dr. Lehrfeld introduced Dr. Craig Newgard who has led the last two field triage guidelines amendment efforts.

National Guideline for the Field Triage of Injured Patients: Data Supporting Key Updates

Dr. Newgard provided a summary of the development of the new national field triage guideline and reviewed the changes from the previous field triage criteria. It was noted that the 2021 revision has been the most rigorous. A detailed literature search focused on five different systematic reviews targeting new literature within the past ten years focused on field triage. For example, feedback from EMS noted that the total GCS is complex and not easily applied in the field and needed to be simplified. One of the systematic reviews focused on the comparison of motor GCS to total GCS. It was further noted that the last systematic review focused on how well the triage guidelines have been working in the past. This showed that undertriage was around 20-30% but in older adults it was 50-60%, and in some cases as high as 70%. Overtriage that was thought to be the biggest issue with field triage had fallen well within the guidelines set forth by the ACS of less than 35%, with most studies around 20-30%.

- Motor GCS vs total GCS – 18 studies
- Circulatory measures – 114 studies
- Respiratory measures – 46 studies
- Mechanism of injury and special considerations – 42 studies
- Overall guidance performance – 17 studies

A national survey was also conducted by a separate group of practicing EMS clinicians to get feedback directly from field crews with just under 4000 individuals who responded to the survey to see how well the guidelines have been working in the field and what from their perspective should be changed. A specific set of criteria were developed to determine what new criteria should go into the algorithm and what should be taken out which was lacking in previous revisions.

Format has changed into two main sets of boxes to better address how things work in the field and be more intuitive:

1) Red – High risk – with the following new criteria:
   - Active bleeding requiring a tourniquet or wound packing with continuous pressure (civilian data that was previously lacking filled in)
   - Motor GCS less than 6 for all patients (similar to total GCS based on review, and integrated to simplify the allocation of mental status in the field)
   - Respiratory distress or need for respiratory support for all patients
   - Room-air pulse oximetry less than 90% for all patients
   - Systolic blood pressure less than 70mm Hg plus (2 x age years) for patients 0-9 years (brings into alignment with ATLS and ACLS)
   - Heart rate is greater than systolic blood pressure for patients 10-64 years
   - Heart rate is greater than systolic blood pressure for patients 65 years of age or older (The previous version < 90 doesn't work well with older adults and only picks up 3-4% of seriously injured older adults. If the threshhold is moved to 110 it functions similarly in terms of predictive value to that of a systolic blood pressure of less than 90 in younger patients. It raises sensitivity without sacrificing specificity for older adults.)

2) Yellow – Moderate risk – with the following new criteria:

- Children 0-9 years involved in motor vehicle crash unrestrained or in unsecured child safety seat
- Falls from height greater than 10 feet for all ages (evidence shows that falls from a height greater than 10 feet has strong predictive value for all ages.)
- EMS judgement now includes risk factors that should be considered. It was noted that literature does support the following, but individually, do not have the same predictive value as that of other criteria in the algorithm:
    - Low-level falls in young children five years of age or younger with significant head impact or older adults 65 years of age or older with significant head impact (children have been added)
    - Suspicion of child abuse (aligns with the 2022 ACS Trauma Center verification criteria)
    - Special, high-resource healthcare needs (different versions co-morbidities had been in and out the algorithm in the past; this is intended for patients who have LVADs, ventilator dependent, or have other high co-morbidity burdens that after injured may need resources of a trauma center)

Boxes are meant to be read from top to bottom (function by risk) and from left to right (based on chronologically how information is received by EMS clinicians in the field).

Each box is aligned with transport recommendations and similar to how the algorithm had been structured before, wording has been modified and the transport criteria simplified to two options versus four.

The paper that explains the rationale, the literature base and the evidence supporting the changes came out in the Journal of Trauma in April and can be found here: https://journals.lww.com/jtrauma/Fulltext/2022/08000/National_guideline_for_the_field_triage_of_injured.19.aspx

Dr. Newgard noted that the guidelines are solely intended for out-of-hospital field triage use which is where the evidence came from. While Oregon and other places have translated the field triage to guide trauma team activation, that is not the focus of the evidence in developing the guidelines.

Discussion:

- RAC member noted that several RAC members representing different trauma level hospitals conducted a limited search looking at modified activations that would become full activation under the modified criteria. It was noted that the data showed that there would be multiple unneeded full trauma team activations. It was stated that trauma surgeons are very unhappy about the proposal. RAC member asked Dr. Newgard whether the national data looked at "full spectrum or just city?" Dr. Newgard responded that the systematic reviews were inclusive and did not just focus on urban settings, although most evidence comes from urban settings. Rural areas were focused on as a key aspect to field triage and covering a mass amount of geography in the U.S. and looked at whether the predictive value was different based on types of settings. The basis of systematic reviews was taking all published literature over the last decade and consolidating them into a single metric or quantified number for how accurate the individual criterion is in predicting serious injury and resources needed.

- Dr. Lehrfeld acknowledged concerns that RAC members spoke about at the October 24, 2022, RAC meeting and shared in follow-up correspondence. He noted that if the field triage guidelines result in higher full trauma team activation but with better outcomes for patients then it is okay. If there is solid evidence that the trauma system needs to be changed to better patient outcomes, then it should be changed. It was further noted that the revisions are not expected to dramatically increase full trauma activation. Discussion ensued regarding looking at trauma patient data and trying to apply criteria when the reason for the trauma patient is unknown. Dr. Lehrfeld also stated that based on a review of data, in the past when revised field triage criteria have been adopted, it has not resulted in an increase in full trauma team activations, and in some cases full trauma team activations were reduced.

Exhibit 2 and Exhibit 3 Review

Dr. Lehrfeld asked the RAC to consider whether there is agreement on adopting the National Field Triage guideline. Discussion:

- RAC member stated from an EMS training aspect and teaching paramedics how to use the tool what is missing is the language that the criteria need to be used in context with the trauma. Example shared of patient with recent change to blood pressure medicine, hypotensive, has a syncopal episode and fall – hypotension is not a result of a trauma rather is the cause of it, and would argue that a trauma center is not needed. Has there been discussion about adding language so account for this scenario? Dr. Lehrfeld agreed that training and judgement is required and welcomed any suggested changes in language that would emphasize that as providers, clinical judgement must be applied.
- RAC member asked shouldn't partial or complete ejection, rider separated from transport vehicle, and pedestrian/bicycle rider thrown be in the 'high risk for serious injury' and go to the highest-level trauma center, and consider changing to the 'closest' trauma center? Dr. Newgard responded noting that there are no mechanisms of injury criteria in the two high risk, red boxes. The positive likelihood ratio for all the mechanism criteria falls into the moderate risk category.
- RAC member via Chat noted that Exhibit 2 and Exhibit 3 were not as linear in 2000 or 2013, meaning the Exhibit 2 criteria did not determine hospital team activation levels. RAC member further stated in the Chat that as indicated by Dr. Newgard, the Field Triage Guidelines are not intended to determine hospital team response. Instead, the ACS full activation criteria were originally used to develop Exhibit 3. The concern with the proposed amendments to Exhibit 3 is that it will significantly increase the criteria that will result in full hospital activation without supporting data.
- RAC member via Chat noted that in Corvallis' ASA, entries would <u>not</u> have increased with new criteria implemented. If someone were to withdraw the entries for EMT discretion, the numbers over the past two years would remain the same.
- RAC member concurred that the concerns are not so much with Exhibit 2, rather the alignment of Exhibit 2 with Exhibit 3. While Exhibit 2 data is well researched and reliable, the Exhibit 3 changes will stress systems with little additional benefits. RAC member further recommended to move on to Exhibit 3 versus continue with Exhibit 2. Additional RAC members concurred with moving on to Exhibit 3.

- RAC member commented that several RAC members and ATAB members had proposed language that was previously shared with the EMS program to replace the language under the red box with "Patients meeting any one of the above RED criteria should be transported to the most appropriate trauma center available within the geographical region per ATAB guidelines." RAC member recommended that this change be made.
- RAC member asked Dr. Newgard to verify that the Exhibit 2 Field Triage Guidelines is not asking hospitals to activate patients as a trauma and entering into the trauma system, rather is more or less where EMS takes patients? Dr. Newgard responded that terminology across states is different with respect to 'trauma system.' Specific to Oregon, meeting any of these criteria would enter a patient into the trauma system but would not prespecify exactly what hospital they would go to. The transport recommendations are intended to have some flexibility to be able to flex in multiple different systems and geographic regions, nor are they to be directly translated into what the in-hospital activation should be once the patient arrives. RAC member further noted that the concern is that by activating some patients based on criteria, once they come to the hospital, that patient cannot be taken out of the trauma system, and still must activate a modified or full approach. RAC member reiterated previous suggestion that data would indicate a significant increase in activations, especially full activations. Exhibit 2 should not be discounted because it would still lead to a very large number of additional activations based on the way it's currently presented. RAC member further noted the following based on the article:
  - Criteria for mental status and vital sign changes are "highly specific, but insensitive for identifying seriously injured patients" which speaks to the concern for overtriage and the need to be cautious about moving forward;
  - The difference between motor GCS less than 6 replacing the total GCS less than or equal to 13 is "small and unlikely to have clinical impact." Many hospitals prefer to stick with more familiar language of the GCS less than or equal to 13;
  - Heart rate greater than SBP and quality of evidence being low. This too will have significant impact;
  - Room air pulse oximetry less than 90% - was data collected prior to COVID as there have been a lot of trauma patients coming in with COVID and what is the current pandemic having on that parameter;
  - SBP less than 110 for older adults only has a sensitivity of 13-29% which could result in overtriage and thus becomes harmful to the remainder the patients.

  Dr. Newgard noted that similar comments have been raised by others and appreciated opportunity to respond. He noted that a triage criterion that has low sensitivity and high specificity means that where it fails is in undertriage not overtriage. In practice, this means there are a lot of very sick patients that are not going to be, for example, hypoxic, hypotensive, or have a high shock index but who may still have serious injury. Trauma centers will not be overrun by criteria that have high specificity which is what exists in the red box. Every physiologic and anatomic criterion, when present, mean that patient is sick. However, if this was the only criteria that was a guide, many sick people would be missed. As to the evidence behind these criteria, there is not enough time to go through each one individually. The criteria listed, such as hypoxia, hypotension, heart rate greater than SBP, and elevated shock index, all have strong literature base to support their inclusion. It was further noted that the Yellow Criteria have equally solid evidence that if removed would mean

a greater number of trauma patients would be missed. There are Oregon specific publications that Dr. Newgard noted he would be happy to share.

- Dr. Lehrfeld clarified that Exhibit 2 only tells a paramedic whether it is a trauma – yes/no. If a patient is made a trauma, the hospital decides whether the response is full, modified or no activation, and not mandatory based on Exhibit 2. Mandatory activations are based on Exhibit 3 and are required based on the American College of Surgeons (ACS) and will be in the quality trauma metrics. An Exhibit 3 is required, but what is included or not, is up for discussion.
- Staff noted via Chat that while the Field Triage Guidelines were published by ACS, ACS did not include them in the 2023 NTDB data dictionary, however ITDX absorbs all ACS changes to allow customers to use the new fields. The new triage guidelines will be added to TraumaOne but will not impact data validation submission to TQIP/NTDB.
- RAC member asked via Chat whether the OHA would be willing to include language in Exhibit 2, "Patients on hospice with comfort care are excluded from entry." Staff responded via Chat that the Centers for Medicare and Medicaid Services (CMS) would possibly view this as an EMTALA violation. Hospice does not preclude someone from receiving trauma care – only curative care for hospice diagnosis.
- RAC member proposed adding language in Exhibit 2 under Mental Status and Vital Signs similar to Exhibit 3 that the criteria should be utilized if it is reasonably believed they are a result of a traumatic injury.

Exhibit 3 was shared and Madeleine Parmley noted that language was added to full trauma activation to make it clear that the physiologic criteria is related to trauma. Emergency Physician discretion was added back to both full trauma team activation and moderate. Discussion:

- Dana Selover noted that one the goals of the Oregon Health Authority is to eliminate health inequities by 2030 and if each hospital makes nuanced decisions that conflict with national standards, a really good reason needs to exist to not follow the science and data. The EMS and Trauma Systems Program is listening carefully to community partners including RAC members, but it must make sure that trauma systems are not setting up different systems in providing trauma care and that the system promotes health equity.
- RAC member via Chat noted that when evaluating Exhibit 2 and analyzing internal data, using the SBP <110 for older adults and Sat <90, it would result in a significant increase in trauma activations.
- RAC member via Chat noted that the EMS activation criteria (Exhibit 2) will increase hospital trauma activations and do not appear to add significantly injured patients but might actually catch patient that are not more trauma injured (low ISS). These changes may significantly increase activations and burden hospitals significantly.
- RAC member expressed that they understand the purpose and importance of Exhibit 3. While there is a robust evidence basis for a number of the changes in Exhibit 2, there is not a similar basis to make changes to Exhibit 3. If there was robust data to support Exhibit 3 changes, it could be supported. Increasing the number of criteria that result in full trauma team activation as opposed to modified or a consult, there is no question there will be more traumas. The proposal will draw human resources away from a very limited pool. The more full trauma team activations called, the less staff will be available for modified and everyone else.
- Dr. Lehrfeld noted that leaving Exhibit 3 as currently written would mean misalignment between field triage and hospital activation criteria and may create a lot of confusion. RAC

member responded that the evidence base being applied is expert opinion, and if there is a difference in opinion from the experts on what is the appropriate indication and there has yet to be demonstrated harm from the current guidelines the motivation to change is not understood, other than just to keep them in concordance which comes at a significant cost to the hospitals.

- RAC member reiterated that there will be an increase in full activation because criteria previously in the modified activation are being moved to full. RAC member stated they understood trying to align Exhibit 2 and 3, but the criteria in the red box don't necessarily need to be full activation in Exhibit 3. RAC member asked if there is any evidence or data that suggests in Oregon that there is an undertriage problem. Dr. Lehrfeld acknowledged there is currently not that data and cautioned how to pursue such studies.
- RAC member via Chat asked that responses from ATABs and RAC members that were sent to the OHA be placed on the record. These comments include concerns and recommendations.
- RAC member noted that perhaps Oregon trauma centers are not wanting to align with the National Field Triage Guidelines and if so, is it possible to not adopt.
- Staff noted that they have reached out to other states about whether they are adopting the revised field triage guidelines. Of the 13 responses received so far, 11 have adopted or are in the process and 2 have not yet adopted.
- RAC member via Chat concurred with previous comment to consider making some of the criteria modified versus full and allow hospitals to use their own data if they feel the need to call a full team activation. Another RAC member via Chat agreed.
- RAC members noted via Chat that hospitals are providing EMS staff with their data and that there will be hundreds of patients who are currently hospital level modified traumas that will be full team activations under the proposed Exhibit 3, with very few additionally badly injured patients identified.
- RAC member expressed appreciation for trauma hospitals coming together quickly to analyze the data and help support each other and how everyone aligned with their recommendations. This collaboration speaks to the strength of the Oregon Trauma System. It was requested that the program share this information with the RAC.
- RAC member indicated that there is no state data moving forward that can show what patients will be added to the system if this proposal moves forward. It will be retrospective data which scares people and will not know impact until it's here.
- Several RAC members indicated via Chat that they support the proposed changes submitted by ATABs 2, 5, and 7 to the program.
- RAC member would vote that many of the concerns between the two Exhibits is completely different. Data for Exhibit 2 is excellent and best that exists. That same level of data is not available for Exhibit 3. Exhibit 2 should be adopted not Exhibit 3.
- RAC member via Chat indicated that the national guidelines are for field triage.
- RAC member via Chat indicated that the field triage informs how hospitals activate trauma responses.
- RAC member via Chat indicated that Medford Providence leadership does not support changes to either Exhibit 2 or Exhibit 3 as currently proposed.
- RAC member via Chat indicated their Trauma Medical Director is recommending no to Exhibits 2 and 3 as currently proposed.

- RAC member via Chat indicated one option for Exhibit 3 would be to wordsmith changes (yellow – anatomic, yellow respiratory distress) which would not change full activation criteria much and keep the same physiologic criteria (GCS < 6, SBP < 90) for full activations.
- RAC member via Chat noted that Rogue Regional Medical Center agrees, in principle, with the changes proposed in exhibit 2, but do not support the changes made to exhibit 3.
- RAC member via Chat noted that per Trauma Medical Director and leadership, there is no support for the current proposed changes to Exhibit 3.
- RAC member indicated via Chat that not implementing Exhibit 2 runs against the best available data and national practice. To stand against implementation of Exhibit 2 (with wording updates) would require similarly strong data, which we don't have. We should update and implement Exhibit 2.
- RAC member via Chat indicated that Samaritan Health supports the proposed changes to Exhibit 2 but do not support Exhibit 3.
- RAC member via Chat indicated that St. Charles Health Systems can agree in principle with changes discussed with Exhibit 2 and a hard no on Exhibit 3 as proposed.

Staff noted that the proposals shared by the ATABs and RAC members will be forwarded to the RAC.

Statement of Need and Fiscal Impact

M. Bernal noted that the Statement of Need and Fiscal Impact had been shared at the previous meeting but wanted to identify additional changes that were made based on review by the OHA Office of Equity and Inclusion and suggestions made at the last RAC meeting.

- Information on health and health care disparities was added as well as data on a on Pennsylvania Trauma Outcome study.
- A reference was added that additional future data analysis is necessary to determine whether Oregon adoption of field triage criteria and hospital activation team criteria would lead to significantly better outcomes for Black, Indigenous, and People of Color communities.
- The number of licensed ambulance service agencies that would be impacted by adoption of Exhibit 2 was added. It was also noted that these ambulance service agencies would need to update triage protocols and train EMS providers on the new standards.
- A statement was added acknowledging hospital concerns that aligning revised field triage guidelines with trauma team activation criteria may result in an increase in trauma team activations. Information was further added noting that when activating a trauma team, both equipment and specialty provider resources are pulled away from other uses within the hospitals. It was also noted that the public that are injured and entered into the trauma system may be affected by increased billing costs for trauma activations.

RAC members were asked to submit any comments on the Statement of Need and Fiscal Impact to staff.

Next Steps

Dana Selover thanked RAC members for their participation and a special thanks to Dr. Newgard for joining the discussion from Spain.

It was noted that staff will consider the information shared and review the recommendations sent in by ATAB and RAC members. D. Selover acknowledged that additional conversations about the proposed rule changes are necessary and that a future RAC meeting will be scheduled.

Meeting adjourned at 12:05 p.m.