

Global Triathlon Safety Task Force

Medical Operations Planning Webinar

May 23, 2023



Task Force Members

- **Mike Wien** - Task Force Chair, Past **USA Triathlon** Board Member and Vice President
- **Gergely Markus** Sports Director, **World Triathlon**
- **Thanos Nikopoulos**, Head of Operations, **World Triathlon**
- **Beth Atnip**, Vice President of Global Operations, **Ironman**
- **Richard Belderok**, CTO or **Tomas Vrzak**, Head of Global Operations, **Challenge Family**
- **Dr. Larry Creswell**, Heart Surgeon, **University of Mississippi** School of Medicine
- **Dr. Doug Hiller**, Past Medical Director for IRONMAN Kona, Medical Delegate for Tokyo 2020 Paralympic Games, Clinical Professor, **Washington State University**
- **Dr. Sergio Migliorini**, Chair, **World Triathlon** Medical Committee

Task Force Members – 11 Federations

- **Tim Yount** – Chief Sport Development Officer, **USA Triathlon**
- **Jonny Hamp** – Director of National Events, **British Triathlon**
- **Jorge Garcia Martinez**, Director of Competition, **Spanish Triathlon Federation**
- **Ryoji Kasanami**, JTU and Asia Triathlon Medical Committee Chair, Nara University School of Health and Sports Medicine, **Japan Triathlon Union**
- **Retief Freysen**, Technical Consultant, **Triathlon South Africa**
- **Esteban Benitez**, Operations Manager, **Mexico Triathlon Federation**
- **Omar Bin Abu Bakar** , Sports Development Executive, **Triathlon Singapore**
- **Gustavo Svane**, Gerente General, **Triathlon Chile**
- **Toby Keegan**, Head of Events and Technical, **Triathlon Australia**
- **Rodrigo Milazzo**, High Performance Manager, **Triathlon Brasil**
- **Philippe Fattori**, International Relations Officer and World Triathlon Coaches Committee, **Federation Francaise de Triathlon**

Global Triathlon Safety Task Force

Mission

- Save One Life (for starters)
- Reduce Fatalities and Serious Injuries



Mission

- Save One Life (for starters)
- Reduce Fatalities and Serious Injuries
- 2021: Focus on helping National Federations and race directors host races during the current health crisis.



Focus for Task Force

- Establish a Global Data Base
- Develop New Ideas and Programs
- Share Best Practices



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World Triathlon signed contract for Washington State University to receive and analyze race medical incident reports



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GLOBAL
TRIATHLON
SAFETY
DATABASE

[Home](#)[Database](#)[Partners](#)[Resources](#)[Results & Reports](#)[Contact](#)

swim safe. ride safe. run safe. train safe.



OUR PURPOSE

Focus for Today –Share Best Practices

Medical Operations Planning

- Medical Tent
- Emergency Issues in the Water
- Identifying issues and transporting medical team and athletes on the bike and run
- Handling Urgent Care Issues
 - Identifying potential issues requiring pre-event plans
 - Implementing practices and drills
 - Coordination and communication plan with EMS, local hospital, first responders
- Information collected in registration to aid in emergency situations



Panel Members:

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- **TK Miller, MD**, Virginia Tech School of Medicine, Ironman Global Medical Advisory, Medical Lead, USA Triathlon
- **Humberto Aguilar, MD**, World Triathlon Medical Delegate, Triathlon Mexico
- **Yasser Hosny, MD**, Member World Triathlon Medical Committee, Egypt Triathlon Federation
- **Richard Belderok**, Chief Technology Officer and Race Director, Challenge Family
- **Wynand Wyngaardt**, Response Plus Holdings, Abu Dhabi
- **Thanos Nikopoulos**, Head of Operations – World Triathlon
- **Chris Troyanos, ATC**, Sports Medicine Consultants, Boston Marathon Medical Leader, Medical Team Concussion Spotter - NFL

Panel Format

- Moderator has a bank of prepared questions.
 - One Panelist will provide prepared comments.
 - Open discussion for panelist to respond.
- Focus is on being better prepared to handle the more serious urgent issues.



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TK Miller, MD, Virginia Tech School of Medicine,
Ironman Global Medical Advisory, Medical Lead, USA
Triathlon

What are the most critical things to consider when setting up a medical tent?

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TK Miller, MD

Pre-Event Planning

- Early input by Medical Team
 - Scope of medical services
 - Course/event profile impact on medical coverage
 - Budget for medical services
 - “Real Estate” allocation
- Determine Available Resources
 - Equipment
 - Medical Staff
 - Volunteers
 - Local medical resources
 - National (Federation) requirements



TK Miller, MD

Guidelines for Event Medical Services

- What do you **want** to treat on site?
 - First aid vs. complex care
- What **can** you treat on site?
 - Staffing, supplies, regulatory issues
- What does the local medical system **need** you to treat on site



TK Miller, MD

Medical planning – Key variables

- Race layout / format
- Event Distance (s)
- Number / capabilities of competitors
- Expected environmental conditions
 - Need to be aware of extremes/unexpected

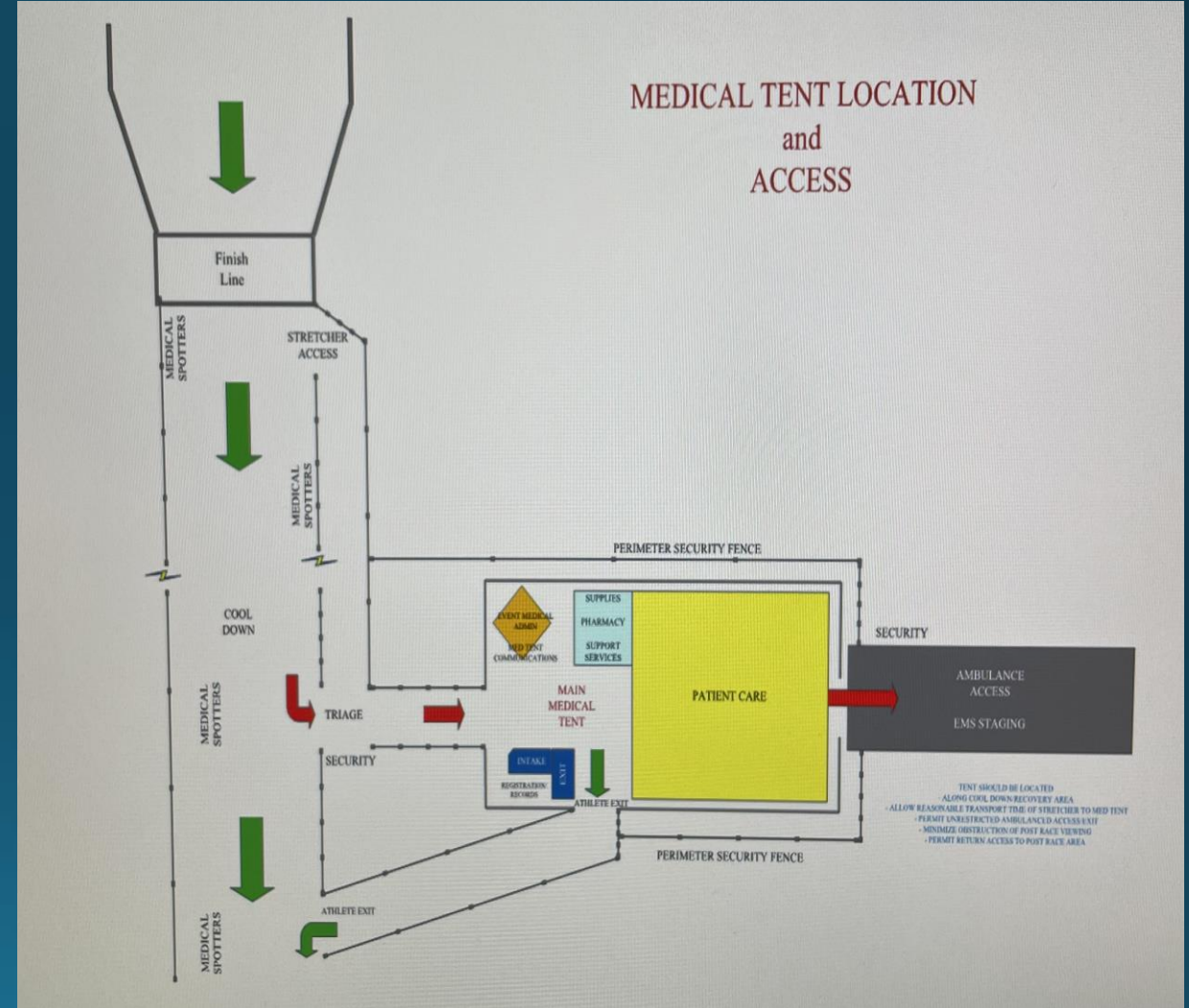


TK Miller, MD

Medical Area Setup

- Clearly marked
- Adjacent/downstream from finish
- Direct access by participants
- Restricted non-participant access
- Unrestricted ambulance access, exit

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TK Miller, MD

Medical planning – Key variables

- Available personnel
 - Expertise
 - Numbers
 - Shifts based on event duration
- Available support services
 - Emergency transport
 - Secondary referral facilities
 - Capacity
 - Capabilities
 - Interest and involvement





Humberto Aguilar, MD, World Triathlon Medical Delegate, Triatlon Mexico

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What are the best practices for being able to handle emergencies in the water?



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Humberto Aguilar, MD, World Triathlon Medical Delegate, Triatlón Mexico



What are the best practices for being able to handle emergencies in the water?

Data Collection

- Received 29 responses
- Results to date (2015 to 2019)

• Total Deaths	100%
• Men	89%
• Women	11%
• Swim	68%
• Bike	16%
• Run	12%
• Post Race	3%

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Humberto Aguilar, MD, World Triathlon Medical Delegate, Triatlon Mexico

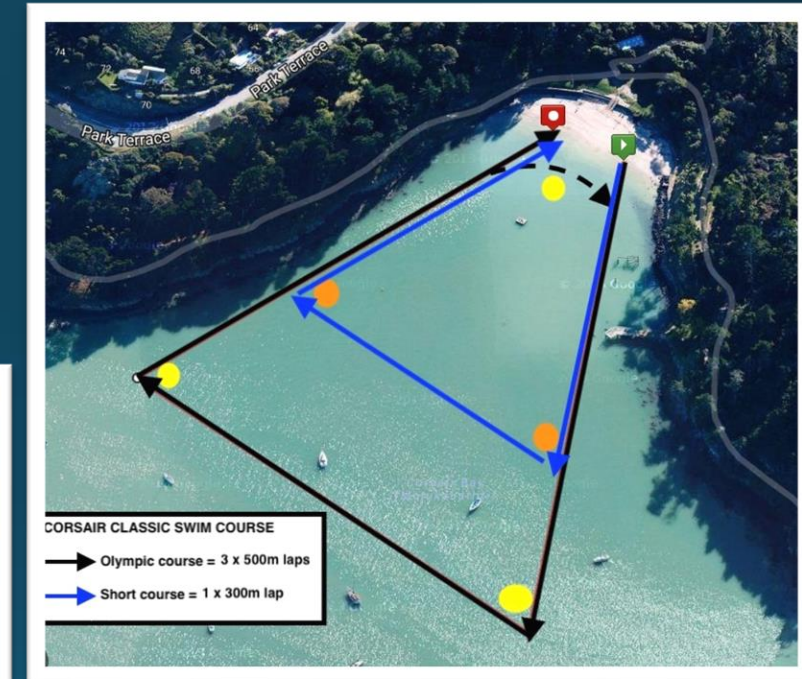


What are the best practices for being able to handle emergencies in the water?

- Trained volunteers to identify issues and notify medical personnel/rescue team.
- Medical team to diagnose and provide aid.
- Practiced plan to retrieve swimmer and bring to the medical team.
- Pre-Race briefing with athletes to assist in identifying issues.

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Humberto Aguilar, MD, World Triathlon Medical Delegate, Triatlon Mexico



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Richard Belderok, Chief Technology Officer and Race Director,
Challenge Family



Wynand Wyngaardt, Response Plus Holdings, Abu Dubai

What is the best way to identify issues and transport medical teams and athletes in need on the bike and run courses?



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Richard Belderok and Wynand Wyngaardt

What is the best way to identify issues and transport medical teams and athletes in need on the bike and run courses?

- Medical support
- Communications system
- Vehicles to transport personnel and athletes.
- Training for drivers on the course.
- Educate athletes on identify and communicate to medical teams.



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Richard Belderok and Wynand Wyngaardt

What is the best way to identify issues and transport medical teams and athletes in need on the bike and run courses?





Yasser Hosny, MD, Member World Triathlon Medical Committee,
Egypt Triathlon Federation

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What are the potential issues requiring pre-event plans?



Practical management of sudden cardiac arrest on the football field
British Journal of Sports Medicine
August 2012



Sudden Cardiac Death

- Federation International de Football Association (FIFA)
Death Registry

- 617 cases in 67 countries
 - 23% survived
- South America (Cardiomyopathy) 42%
- North America (Coronary Artery Issue) 33%
- Europe (Sudden Unexplained Death) 26%

Basic Life Support

The Automated External Defibrillator (AED)

85% Survival rate vs 35%



Yasser Hosny, MD

Global Triathlon Safety Task Force CPR

The Automated External Defibrillator (AED)



CPR drills are critical to assess skills and team harmony

Heat Stroke

- Cold water immersion
- Cooling garments (cooling jackets)
- Cold fluid ingestion
- Ice slurry beverages
- Mixed methods (internal / external)



Yasser Hosny, MD

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Wet Bulb Globe Temperature (WBGT)



WBGT Risk Categories			Recommendations	
Flag Color	WBGT Heat index	Risk	Acclimatized, fit, low-risk triathletes	Non-acclimatized, unfit, high-risk individuals
Black	>32.2°C	Extreme	Re-schedule competition	Re-schedule competition
Red	30.1-32.2°C	Very High	Limit intense competition and total daily exposure to heat and humidity. Watch for early signs and symptoms	Re-schedule competition
Orange	27.9-30.0°C	High	Plan competition with discretion, watch at-risk individuals carefully	Limit intense competition. Watch at-risk individuals carefully
Yellow	25.7-27.8°C	Moderate	Normal activity monitor fluid intake	Plan races with discretion, watch at-risk individuals carefully
Green	< 25.7°C	Low	Normal activity monitor fluid intake	Normal activity monitor fluid intake

Swim Induced Pulmonary Edema (SIPE)

- Causes
 - Increased hydrostatic and pulmonary capillary pressure
 - Cold water
 - Poor physical fitness
 - Genetics
 - Pre-existing cardiac condition



Swim Induced Pulmonary Edema (SIPE)

- Management
 - Immediate removal from water
 - Oxygen
 - Diuretic drug
 - Respiratory support measures





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Humberto Aguilar, MD, World Triathlon
Medical Delegate, Triathlon Mexico

- Head, neck, and spine injury

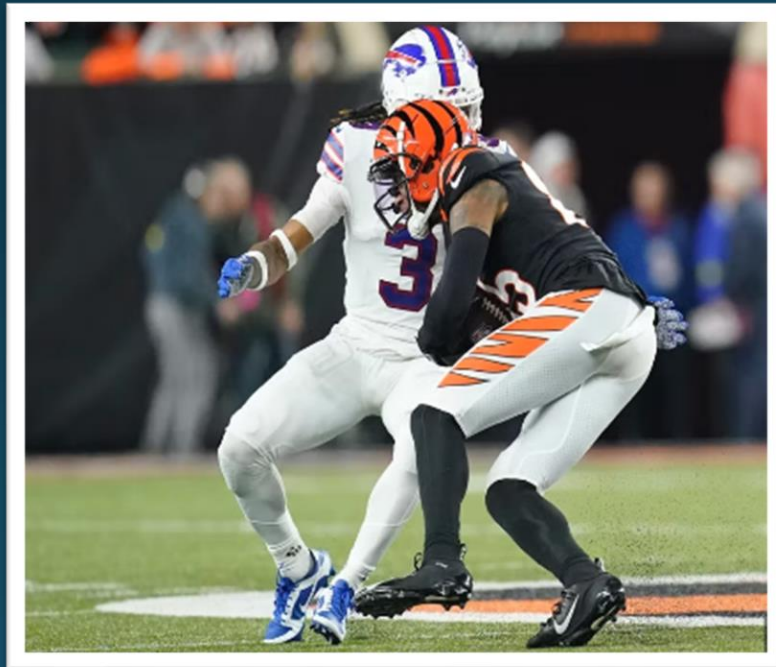


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The New York Times

Damar Hamlin of Buffalo Bills in Critical Condition After Collapsing During N.F.L. Game

Hamlin, a 24-year-old safety, went into cardiac arrest after being hit, but his heartbeat was restored by medical personnel, the Bills said. The game against the Cincinnati Bengals was postponed.





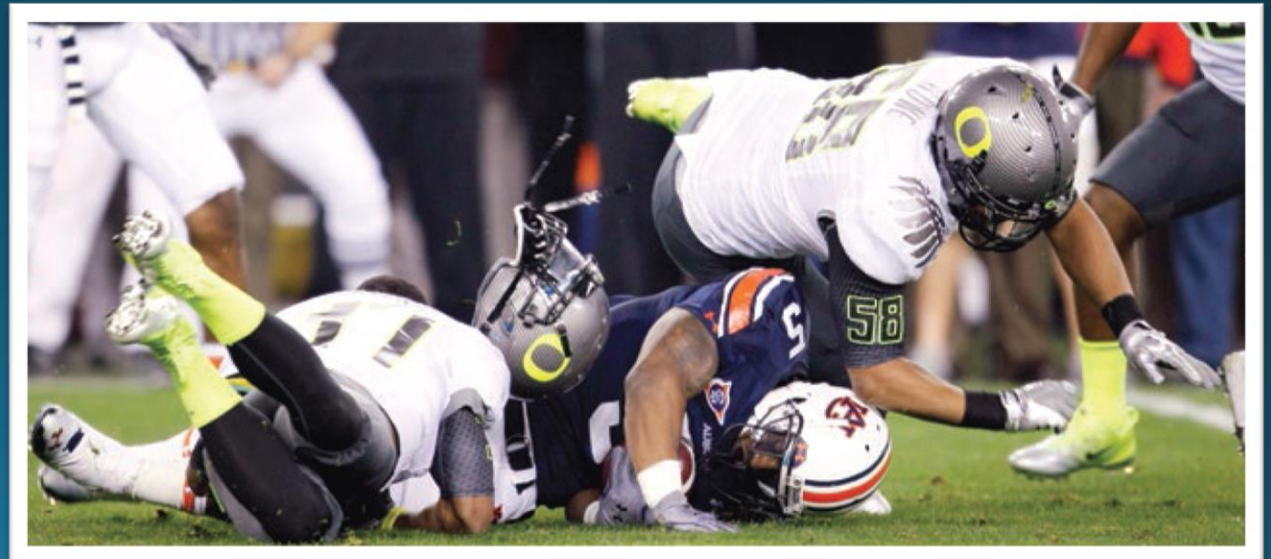
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TK Miller, MD , Virginia Tech School of Medicine,
Ironman Global Medical Advisory, Medical Lead, USA Triathlon, Medical Team on
Field, College Football, National Hockey League and Minor League Baseball

What are the lessons we can
learn from other sports on
Critical Incident Management
Programs?

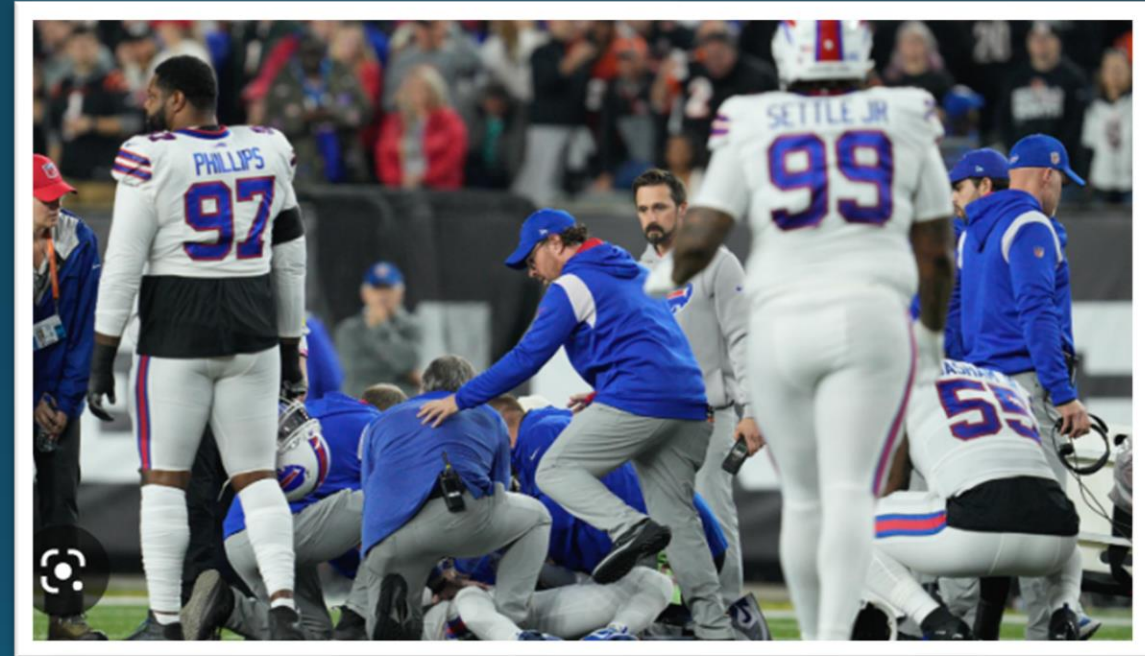
The “NFL Experience”

- Focus on “worst case” medical issues
 - Cause permanent harm or death
- Medical intervention must not make the problem worse



The Team Approach

- Defined team leader
- Defined roles
- Management algorithms
- Practice management protocols
 - Needs to be second nature



Everyone else gets out of the way

- Don't interfere
- Manage other athlete's needs
- Take care of your own area

Action Plan

Stabilize → Transport

- Agreement on protocols
- Contracts
- Communications

Defined secondary sites of care

- Discuss in advance
- Direct point of contact
- Minimize surprises

Backup for multiple incidents

- Secondary teams
- Plans if your only ambulance leaves



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Wynand Wyngaardt, Response Plus Holdings, Abu Dubai



TK Miller, MD, Virginia Tech School of Medicine, Ironman Global Medical Advisory, Medical Lead, USA Triathlon, Medical Team on Field, College Football, National Hockey League and Minor League Baseball

How to you effectively coordinate support with EMS, local hospitals and first responders?

How to you effectively coordinate support with EMS, local hospitals and first responders?

- Determine organizations who will be part of the plan
 - EMS, local hospitals, first responders, race medical personnel
- Establish key contact for each organization
- Set up communications plan and method of communication between each organization
- Test the system in advance

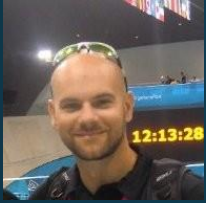


How to you effectively coordinate support with EMS, local hospitals and first responders?

- Include requirements in the planning process
 - Local authority regulations
 - Receiving facilities protocols
 - Insurance
 - Documentation and records



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Thanos Nikopoulos – Head of Operation



What information could be collected in registration to aid in emergency situations?

- Pre-Participation Exam (PPE) by a qualified Physician
- Pre-Participation Questionnaire on pre-existing conditions
- Custom-made newsletters for a specific group of athletes with pre-existing medical conditions
- Consent forms
- Contact person who is not racing



Be your
extraordinary

WORLD TRIATHLON PPE QUESTIONNAIRE - ENGLISH

The information disclosed in this document is strictly confidential and should remain between doctor and patient. The results of the screening should be transmitted solely to the athlete and his/her legal representatives.

Any changes, distribution or duplication of this document is strictly prohibited.

Name

Surname

National Federation

Date of birth

Address

Phone

Email

PERSONAL HISTORY	YES	NO
1. Have you ever fainted or passed out when exercising?	<input type="radio"/>	<input type="radio"/>
2. Do you ever have chest tightness?	<input type="radio"/>	<input type="radio"/>
3. Does running ever cause chest tightness?	<input type="radio"/>	<input type="radio"/>
4. Have you ever had chest tightness, cough, wheezing which made it difficult for you to perform sport?	<input type="radio"/>	<input type="radio"/>
5. Have you ever been treated/hospitalized for asthma?	<input type="radio"/>	<input type="radio"/>
6. Have you ever had a seizure?	<input type="radio"/>	<input type="radio"/>
7. Have you ever been told that you have epilepsy?	<input type="radio"/>	<input type="radio"/>
8. Have you ever been told to give up sports because of health problems?	<input type="radio"/>	<input type="radio"/>
9. Have you ever been told you have high blood pressure?	<input type="radio"/>	<input type="radio"/>
10. Have you ever been told you have high cholesterol?	<input type="radio"/>	<input type="radio"/>
11. Do you have trouble breathing or do you cough during activity?	<input type="radio"/>	<input type="radio"/>
12. Have you ever been dizzy during or after exercise?	<input type="radio"/>	<input type="radio"/>

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13. Have you ever had chest pain during or after exercise?	<input type="radio"/>	<input type="radio"/>
14. Do you get tired more quickly than your friends do during exercise?	<input type="radio"/>	<input type="radio"/>
15. Have you ever been told you have a heart murmur?	<input type="radio"/>	<input type="radio"/>
16. Have you ever been told you have a heart arrhythmia?	<input type="radio"/>	<input type="radio"/>
17. Do you have any other history of heart problems?	<input type="radio"/>	<input type="radio"/>
18. Have you had a severe viral infection (for example SARS-COVID19 or myocarditis or mononucleosis) within the last month?	<input type="radio"/>	<input type="radio"/>
19. Have you ever been told you had rheumatic fever?	<input type="radio"/>	<input type="radio"/>
20. Do you have any allergies?	<input type="radio"/>	<input type="radio"/>
21. Are you taking any medications at the present time?	<input type="radio"/>	<input type="radio"/>
22. Have you routinely taken any medication in the past two years?	<input type="radio"/>	<input type="radio"/>

FAMILY HISTORY	YES	NO
Has anyone in your family less than 50 years old:		
23. Died suddenly and unexpectedly?	<input type="radio"/>	<input type="radio"/>
24. Been treated for recurrent fainting?	<input type="radio"/>	<input type="radio"/>
25. Had unexplained seizure problems?	<input type="radio"/>	<input type="radio"/>
26. Had unexplained drowning while swimming?	<input type="radio"/>	<input type="radio"/>
27. Had unexplained car accident?	<input type="radio"/>	<input type="radio"/>
28. Had heart transplantation?	<input type="radio"/>	<input type="radio"/>
29. Had pacemaker or defibrillator implanted?	<input type="radio"/>	<input type="radio"/>
30. Been treated for irregular heartbeat?	<input type="radio"/>	<input type="radio"/>
31. Had heart surgery?	<input type="radio"/>	<input type="radio"/>
32. Has anyone in your family experienced sudden infant death (cot death)?	<input type="radio"/>	<input type="radio"/>
33. Has anyone in your family been told they have Marfan syndrome?	<input type="radio"/>	<input type="radio"/>

I certify that all information given is true and exact.

Athlete Signature

Parent Signature

Date:



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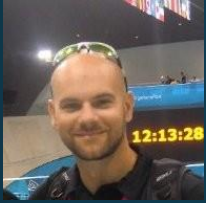
Thanos Nikopoulos – Head of Operation



Yokohama World Triathlon Championship Series Case Study

- The week before the competition
 - Daily medical conditions online registration - an online platform
- Day before the competition
 - Completion of the final medical condition registration
 - Answer five questions that confirm you have watched the online briefing
 - Issue a QR code to be presented to the check-in tent on race day

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Thanos Nikopoulos – Head of Operation



Yokohama World Triathlon Championship Series Case Study

- Race Day

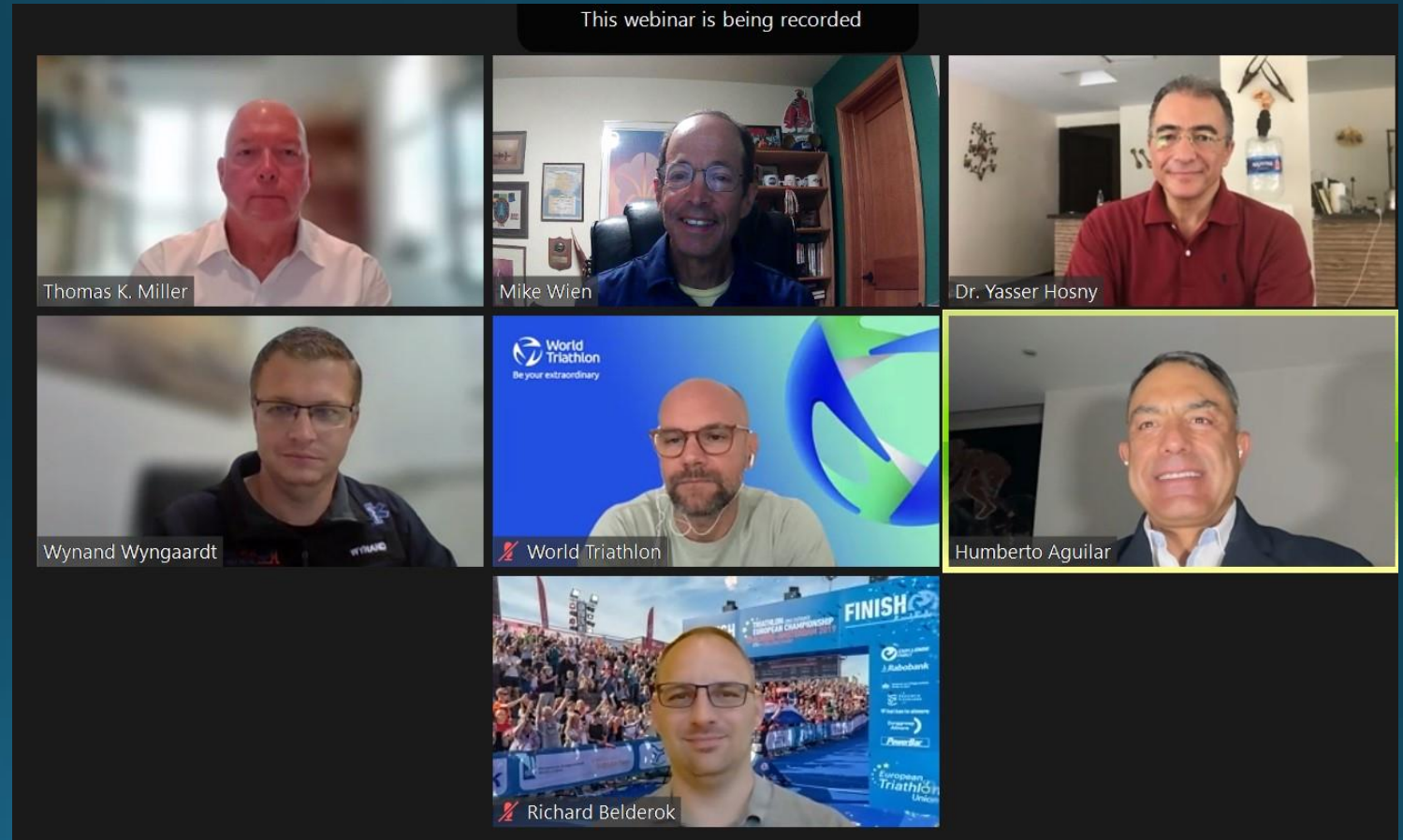
- Present the QR code at the check-in tent
- Complete the race day medical conditions form
- Collect timing chip
- Offer the possibility to skip the swim if not feeling fit and continue the race with bike/run
- Mandatory 150m swim warm-up for all
- Enjoy the race

Key Take-Aways

Panelists

- TK Miller, MD
- Humberto Aguilar, MD
- Yasser Hosny, MD
- Richard Belderok
- Wynand Wyngaardt
- Thanos Nikopoulos

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Thank You



World Triathlon Technology Team

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