Disclaimer

All opinions, viewpoints and recommendations contained in this presentation represent those of the author alone and do not represent the opinions, viewpoints or recommendations of any organization with which the author may be affiliated, including, without limitation, the USOC.

- I receive payment for presentations including air travel
- I serve as a VICIS council member
- I am a paid consultant to the Allegheny Health Network
Bill Moreau DC DACBSP FACSM

• United States Olympic Committee, Managing Director of Sports Medicine
• Professor – Southern California University of Health Sciences
• Associate Professor – University of Western States
• CMO Team USA - Rio 2016 Summer Olympic Games, 2015 Toronto Pan American Games
• Medical Director Team USA – 2014 Sochi Winter Olympics, 2012 London Olympic Games
• NFL International Think Tank on Concussion
• University of Washington Sports Health and Safety Institute External Advisory Board Member
The purpose of the presentation is:

1) Look at Olympic and Paralympic sports medicine cares

2) Identifying the Medical impact on Sports Performance in Becoming an Olympic Champion
Citius, Altius, Fortius:

Lessons from the 2016 Rio Summer Olympic Games
Sports Medicine – Role in Elite Athletics

Bill Moreau DC DACBSP FACSM
- Managing Director USOC Sports Medicine Division
- Chief Medical Officer – Rio 2016 Summer Olympic Games
- Medical Director Sochi and London Olympic Games
Overview of USOC Sports Medicine

USOC Mission Statement

• To support U.S. Olympic and Paralympic athletes in achieving sustained competitive excellence and preserve the Olympic ideals, and thereby inspire all Americans.

USOC Sports Medicine
“We provide the edge.”
The Edge
How We Provide the EDGE:

Team work of providers working together -

• Time is to diagnosis is important for every patient
• The goal is making the correct diagnosis and resultant care on the first patient encounter
• The difference between winning and competing is very small
USOC
SPORTS
MEDICINE

25,000 Olympic / Paralympic Encounters/Year
USOC – Sports Medicine
Three Pillars of Athlete Support

• National Medical Network
• Olympic Training Centers Medical Clinics
• Olympic Games Medical Services
The USOC Volunteer Program

- Clinicians are invited to volunteer for a two week rotation at an OTC
- Integration of staff from across the USA
- Up to 200 clinicians per year
- Opportunities to engage with NGBs and move ahead to larger assignments
THE DIFFERENCE OF A HEARTBEAT:
A CASE STUDY
Cardiovascular Pathology

• A member of the U.S. Olympic team that won a silver medal in the 1984 Games at Long Beach, Hyman, 31, was playing for Daiei, Inc., in a Japanese women's league match against Hitachi, Ltd., in Matsue City, about 380 miles west of Tokyo.
Targeting Cardiovascular Pathology for Team USA

• Screening Questionnaire (pre-participation history + AHA 12 point)

• Pre-participation examination

• Pre-participation ECG

• Cardiology referral
  – ECHO, Stress Test, MRI, etc
Causes of sudden death in young athletes

- HCM 26%
- Commotio Cordis 20%
- Coronary anomaly 14%
- > cardiac mass 7.5%
- Myocarditis 5%
- Ruptured Ao 3%
- ARVD 3%
- AS 3%
- CAD 3%
- Cardiac mass 7.5%
- MVP 2%
- Asthma 2%
- Other 20%

Maron NEJM 2003 349 1064
Elite Athlete Health Profile (EAHP)

- A comprehensive assessment of the athlete’s current health status and risk of future injury or disease.
- May serve as an entry point for additional medical care.
- A tool for continuous health monitoring in athletes.
- The primary objective: to detect conditions that maybe be life-threatening or predispose the athlete to injury and to identify opportunities to improve and enhance sustained competitive excellence.
- The secondary goal: create a longitudinal record of health related human performance and to preserve financial resources through the identification of injury or illness at an earlier stage resulting in less costly management.
- Many aspects to the EAHP are standardized.
  - Modifications for age, gender, physical ability and sport specific requirements are be made when deemed appropriate.
The EAHP Includes

The Team Approach:

• History and physical examination
• Sport-specific orthopedic examination
• Blood testing and urine analysis
• Baseline standardized concussion assessment
• ECG and additional cardiac screening
• Identification of Sickle Cell trait
• Movement Screen with dual video analysis
IDENTIFYING THE SPORTS PERFORMANCE DIFFERENCE IN BECOMING AN OLYMPIC CHAMPION
Requirements for Peak Performance

- The cornerstone for Team USA is to field a healthy team
- This must be done with intent and planning in advance
- Methods of maintaining the elite athletes health
  - EAHP
  - Monitoring
  - Effective and efficient implementation of health cares
  - Developing and building a team of healthcare providers who are focused on the health of the athlete
  - Planning
    - MERP
    - Staffing
    - Research to drive healthcare implementation
Rio Team USA Snap Shot

• 17 days of competition between more than 11,300 athletes representing 205 nations.
• The first Olympics to be held in South America
• Team USA topped the medal chart in every category for only the seventh time in Olympic history and the first since 1948
• Lead all nations with 121 medals, including 46 golds, 37 silvers and 38 bronzes.
2016 Rio Summer Games Analytics: A Quick Look
Trends & Analytics at Your Fingertips

- 4,871 patient encounters
- $516,930 in service value
- 105 Providers

<table>
<thead>
<tr>
<th>Provider</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATC</td>
<td>33</td>
</tr>
<tr>
<td>DC (CAQ)</td>
<td>18</td>
</tr>
<tr>
<td>MT</td>
<td>16</td>
</tr>
<tr>
<td>MD/DO</td>
<td>28</td>
</tr>
<tr>
<td>PT</td>
<td>10</td>
</tr>
</tbody>
</table>
## Athlete Illness

<table>
<thead>
<tr>
<th>Affected System</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>respiratory/ear; nose; throat</td>
<td>53</td>
</tr>
<tr>
<td>dermatologic</td>
<td>20</td>
</tr>
<tr>
<td>gastro-intestinal</td>
<td>15</td>
</tr>
<tr>
<td>Neurological/psychiatric</td>
<td>3</td>
</tr>
<tr>
<td>uro-genital/gynaecological</td>
<td>2</td>
</tr>
<tr>
<td>Dental</td>
<td>1</td>
</tr>
<tr>
<td>metabolic/endocrinological</td>
<td>1</td>
</tr>
<tr>
<td>Other - Dry Eyes</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause of Illness/symptom</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>environmental</td>
<td>31</td>
</tr>
<tr>
<td>Infection</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
</tr>
<tr>
<td>pre-existing (e.g. asthma; allergy)</td>
<td>1</td>
</tr>
<tr>
<td>Reaction to Medication</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main Symptom</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>31</td>
</tr>
<tr>
<td>Pain</td>
<td>21</td>
</tr>
<tr>
<td>dyspnea; cough</td>
<td>18</td>
</tr>
<tr>
<td>Diarrhea; vomiting</td>
<td>11</td>
</tr>
<tr>
<td>Fever</td>
<td>3</td>
</tr>
<tr>
<td>lethargy; dizziness</td>
<td>3</td>
</tr>
<tr>
<td>anaphylaxis</td>
<td>1</td>
</tr>
<tr>
<td>Diarrhoea-intestinal</td>
<td>1</td>
</tr>
<tr>
<td>dyspnea; nose; throat</td>
<td>1</td>
</tr>
</tbody>
</table>
# Staff Illness

## Affected System

<table>
<thead>
<tr>
<th>Affected System</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>respiratory/ear; nose; throat</td>
<td>18</td>
</tr>
<tr>
<td>dermatologic</td>
<td>3</td>
</tr>
<tr>
<td>gastro-intestinal</td>
<td>3</td>
</tr>
<tr>
<td>other</td>
<td>2</td>
</tr>
<tr>
<td>musculo-skeletal</td>
<td>1</td>
</tr>
<tr>
<td>neurological/psychiatric</td>
<td>1</td>
</tr>
<tr>
<td>uro-genital/gynaecological</td>
<td>1</td>
</tr>
</tbody>
</table>

## Cause of Illness/symptom

<table>
<thead>
<tr>
<th>Cause of Illness/symptom</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>infection</td>
<td>12</td>
</tr>
<tr>
<td>environmental</td>
<td>10</td>
</tr>
<tr>
<td>other</td>
<td>3</td>
</tr>
<tr>
<td>pre-existing (e.g. asthma; allergy)</td>
<td>3</td>
</tr>
<tr>
<td>exercise induced</td>
<td>1</td>
</tr>
</tbody>
</table>

## Main Symptom

<table>
<thead>
<tr>
<th>Main Symptom</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>other</td>
<td>15</td>
</tr>
<tr>
<td>dyspnea; cough</td>
<td>5</td>
</tr>
<tr>
<td>pain</td>
<td>5</td>
</tr>
<tr>
<td>diarrhea; vomiting</td>
<td>2</td>
</tr>
<tr>
<td>lethargy; dizziness</td>
<td>2</td>
</tr>
</tbody>
</table>
Planning to Meet the Challenge

- Each Game or event brings unique challenges and opportunities for the sports medicine team
- MERP

- Iowa and working HS Football
  - It gets cold, really cold!
  - ASDH – time to treat

- Sochi Winter Games
  - We will use electronic surveillance....
  - ID = immediate passage to an ID hospital 75 miles away
  - Terrorism

- Rio Games
  - Water quality
  - ID
  - Footprint of the venues and transportation
  - Public vs. Private Hospitals and the “law of the land”
Defining High Performance

• What does it take to be the best in the world -

On a specific day at a specific time competing against the best the world has to offer?
What is Normal?
THE DIFFERENCE BETWEEN EATING FROM A CEREAL BOX AND BEING ON ONE.

75 Miles – Delta 1 second
What matters when anything could?

everything.

The answer, quite simply, is *everything*. Everything matters. When anything could, everything does.
Olympic and Paralympic Games Rio Planning and Execution

• Planning for the Rio Summer Olympic Games required numerous logistic obstacles for provision of medical services.

• The USOC and our partners solidified a plan to manage all medical care for the USOC and its contingency from routine to emergent needs.
  – Including substantial support, recommendations and collaborations to our marketing partnership families
2016 Summer Games
Rio

Rio Challenges Specific To Medical Support

• Infectious Disease
• Language barriers
• Spread of venues
• Difficulty with quick transport between venues
• Safety Concerns

Photo courtesy of Getty Images
Looking Ahead to 2018 Winter Olympics, officially known as the XXIII Olympic Winter Games

<table>
<thead>
<tr>
<th>Host city</th>
<th>Pyeongchang, South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motto</td>
<td>Passion. Connected.</td>
</tr>
<tr>
<td>Korean:</td>
<td>하나된 열정.</td>
</tr>
<tr>
<td>Events</td>
<td>102 in 7 sports (15 disciplines)</td>
</tr>
<tr>
<td>Opening ceremony</td>
<td>9 February</td>
</tr>
<tr>
<td>Closing ceremony</td>
<td>25 February</td>
</tr>
<tr>
<td>• Continued targeted examinations</td>
<td></td>
</tr>
<tr>
<td>• Collaborative approach to screening</td>
<td></td>
</tr>
<tr>
<td>• Emergency Action Planning</td>
<td></td>
</tr>
<tr>
<td>• Local medical services site visits</td>
<td></td>
</tr>
<tr>
<td>• Sports Medicine Team Selection</td>
<td></td>
</tr>
</tbody>
</table>
Steps to be the Best

Some key concepts:
1. You have to have a Game Plan for life.
2. The only person that you can control is you.
3. Develop a mission statement and know the lines you will not cross!
4. Think about where you want to go and then build the plan to get there.
5. Set milestones and markers along the way.
6. Keep balance in your life as you work the plan.
7. Expect challenges.
Lessons learned from Elite Athletes

• Develop an unwavering Level of Dedication to hitting your target
• Be open to learn more...ALL THE TIME
• Be humble and full of quiet Self-confidence
• Have a sincere desire to learn from your mistakes to overcome the next obstacle, everyone makes mistakes...
• Focus on staying true to your plan
• When you fall short on a goal, own it, learn from it and do not blame others
• Have the drive and confidence to develop yourself, even in the midst of failure, and then you will SUCCEED!!!!
CONCLUSION

To be an Olympic Champion you need to best in the world on a particular time on a particular day.
You have gifts, some known and some unknown. Take safe risks to see who you can become.

If you do not try you will never know!

MAKE LIFE AN ADVENTURE