Implementing injury and illness surveillance at the national level
PyeongChang 2018

Hilde Moseby Berge, MD PhD
Chief Medical Officer, Paralympics Norge
Top athletes

Olympic

Paralympic
Norges idrettsforbund og olympiske og paralympiske komité

OLYMPIATOPPEN

Oslo Sports Trauma Research Center

[Images of buildings and people]
Injury and illness surveillance

Periodic Health Evaluation

Surveillance
Medical questions

- How many urinary tract infections last year?
  - ✓ 8 (25%) athletes: 1-2
  - ✓ 5 (16%) athletes: 3-4
  - ✓ 1 athlete: >5

- Treated with antibiotics?

- Hospitalized?
  - ✓ 2 (pyelonephritis/ sepsis)
Periodic Health Evaluation (PHE)

For paralympians

- Do you get pressure ulcers? ✓ 10 (31%) athletes
- Due to equipment?
Periodic Health Evaluation (PHE)

Digestive system

- Diarrhea?
- Constipation?
- Associated with travel?

- Referred to reg. dietician (n=17)
  - ✓ 5 (16%) diarrhea
  - ✓ 6 (19%) overweight
  - ✓ 6 (19%) need dietary advice
Surveillance

Data examples
The Oslo Sports Trauma Research Center questionnaire on health problems: a new approach to prospective monitoring of illness and injury in elite athletes

Benjamin Clarsen, Ola Ransen, Grethe Myklebust, Tonje Wåle Florenes, Roald Bahr

ABSTRACT

Background Little information exists on the illness and injury patterns of athletes preparing for the Olympic and Paralympic Games. Among the possible explanations for the current lack of knowledge are the methodological challenges faced in conducting prospective studies of large, heterogeneous groups of athletes, particularly when overuse injuries and illnesses are of concern.

Objective To describe a new surveillance method that is capable of recording all types of health problems and to use it to study the illness and injury patterns of Norwegian athletes preparing for the 2012 Olympic and Paralympic Games.

Methods A total of 142 athletes were monitored over a 40-week period using a weekly online questionnaire on health problems. Team medical personnel were used to classify and diagnose all reported complaints.

Results A total of 617 health problems were registered during the project, including 329 illnesses and 288 injuries. At any given time, 36% of athletes had health problems (95% CI 34% to 38%) and 15% of athletes (95% CI 14% to 16%) had substantial problems, defined as those leading to moderate or severe reductions in sports performance or participation, or time loss. Overuse injuries represented 49% of the total burden of health problems, measured as the cumulative severity score, compared to illness (36%) and acute injuries (13%).

Conclusions The new method was sensitive and valid in describing the nature of acute injuries, whereas patterns of illness and injury in their normal training and preparation phases.

Among the possible explanations for this lack of knowledge are the methodological challenges faced when conducting longer term studies in this group of athletes. The methods currently employed in a majority of prospective surveillance studies are based on those developed for recording football injuries, and while they may work well for team sports, they are difficult to implement among groups of individual athletes or those without a centralised team structure. Standard methods of injury surveillance may also be poorly suited to collecting information on overuse conditions, which represent the predominant injury type in many Olympic sports. We have recently discussed these limitations in detail, and made general recommendations for more appropriate methodology and developed new tools that are better suited to the study of overuse injuries. Our first aim in the present study was therefore to modify our new method, such that it can be used to record not only overuse injuries but also all types of health problems in studies of large, heterogeneous groups of athletes. Our second aim was to apply the method to analyse the patterns of illness and injury in the Norwegian Olympic and Paralympic teams during their preparations for the 2012 games in London.
# Health monitoring - Last 10 weeks

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<th>Athlete</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
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Digestion
So what are you going to do about it?

February 2017
What did you do to improve?

October 2017

- Used more antibac
- Informed early when symptoms
- Wore warmer clothes
- Took off wet clothes
- Better sleeping habits
- Followed recommendations from the reg. dietician
What more can you do?

October 2017

• More handwashing
• No springwater for medical equipment
• Better catheters

• Urinary stix every week
• Re-test blood samples and BP
• Take vitamin supplements as suggested
• Vaccination
• Buy a thermometer
What did we do?

• Worked hard!
• Challenged the leadership
• Expanded the health team
• Increased knowledge
• Included Paralympics in
  ✓ Presentations (OL & PL)
  ✓ Medical meetings
  ✓ Student education
  ✓ National sports medicine conference
What more did we do?

- Travelled with the teams
- **Dietician follow-up**
- Travel recommendations
- Injury-preventive exercises at «Get set»
- Close cooperation with orthotics developers
- Infection prevention
- More medical equipment to the Games
Training days lost due to illness

Pre-intervention

33 days per athlete per year

Post-intervention

19 days per athlete per year
<table>
<thead>
<tr>
<th>Role</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>Athlete</td>
<td>&quot;Better medical care&quot;</td>
</tr>
<tr>
<td>Medical team</td>
<td>&quot;Easier to do my job&quot;</td>
</tr>
<tr>
<td>Coach</td>
<td>&quot;Improved performance&quot;</td>
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Medical challenges

Olympic

Paralympic