



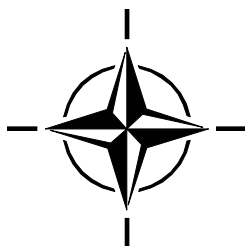
RTO MEETING PROCEEDINGS

MP-HFM-108

NATO Medical Surveillance and Response, Research and Technology Opportunities and Options

(La surveillance médicale et les réponses au sein
de l'OTAN: les possibilités et les options
pour la recherche et la technologie)

Papers prepared for the RTO Human Factors and Medicine Panel (HFM)
Symposium which was held in Budapest, Hungary, 19-21 April 2004.



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RTO is the single focus in NATO for Defence Research and Technology activities. Its mission is to conduct and promote co-operative research and information exchange. The objective is to support the development and effective use of national defence research and technology and to meet the military needs of the Alliance, to maintain a technological lead, and to provide advice to NATO and national decision makers. The RTO performs its mission with the support of an extensive network of national experts. It also ensures effective co-ordination with other NATO bodies involved in R&T activities.

RTO reports both to the Military Committee of NATO and to the Conference of National Armament Directors. It comprises a Research and Technology Board (RTB) as the highest level of national representation and the Research and Technology Agency (RTA), a dedicated staff with its headquarters in Neuilly, near Paris, France. In order to facilitate contacts with the military users and other NATO activities, a small part of the RTA staff is located in NATO Headquarters in Brussels. The Brussels staff also co-ordinates RTO's co-operation with nations in Middle and Eastern Europe, to which RTO attaches particular importance especially as working together in the field of research is one of the more promising areas of co-operation.

The total spectrum of R&T activities is covered by the following 7 bodies:

- AVT Applied Vehicle Technology Panel
- HFM Human Factors and Medicine Panel
- IST Information Systems Technology Panel
- NMSG NATO Modelling and Simulation Group
- SAS Studies, Analysis and Simulation Panel
- SCI Systems Concepts and Integration Panel
- SET Sensors and Electronics Technology Panel

These bodies are made up of national representatives as well as generally recognised 'world class' scientists. They also provide a communication link to military users and other NATO bodies. RTO's scientific and technological work is carried out by Technical Teams, created for specific activities and with a specific duration. Such Technical Teams can organise workshops, symposia, field trials, lecture series and training courses. An important function of these Technical Teams is to ensure the continuity of the expert networks.

RTO builds upon earlier co-operation in defence research and technology as set-up under the Advisory Group for Aerospace Research and Development (AGARD) and the Defence Research Group (DRG). AGARD and the DRG share common roots in that they were both established at the initiative of Dr Theodore von Kármán, a leading aerospace scientist, who early on recognised the importance of scientific support for the Allied Armed Forces. RTO is capitalising on these common roots in order to provide the Alliance and the NATO nations with a strong scientific and technological basis that will guarantee a solid base for the future.

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NATO Medical Surveillance and Response, Research and Technology Opportunities and Options

(RTO-MP-HFM-108)

Executive Summary

Medical Surveillance can comprise all medical information from cradle to grave. NATO Medical surveillance means medical and personnel information systems that are designed, integrated, and utilized with military medical surveillance to protect the physical and mental health of military personnel throughout their military service. This can start with a medical history pre service, and will continue with all data after entering the military, and after separation as a veteran. This data will allow well founded epidemiological research. Depending on the speed of data acquisition and transmission the information may be used for diagnosing unusual events such as an outbreak of an influenza epidemic or a terrorist attack with WMD.

Within the last years, new applications of information technology have expanded our capabilities for surveillance, and these technologies are now starting to move out of hospitals and other fixed facilities into forward deployed settings. Surveillance technology must be developed towards an integrated system of systems that can comprehensively address future needs to identify acute and chronic exposures of military personnel to health threats over the course of their entire military service. Many of the necessary component technologies are available now or will be soon - the key will be to integrate them.

The symposium presented several examples of medical surveillance in a few NATO and PfP nations (US, CA, NL, GR, BU and GEO). Other countries decided not to present at this meeting.

Three areas of surveillance were presented:

- Surveillance technology and philosophies (US, CA, GR, NL)
- Specified surveillance for mental effects of service or deployment (NL, CA, GEO, BU)
- New technologies for rapid diagnosis of infections (US)

The US provided the largest part (20/32 plus two key notes) of the presentations, however they demonstrated also the difficulties in bringing all the systems and information together into a system of systems that is capable of giving all the information to those who need it be he/she medical officer, decision maker or commander in the field.

La surveillance médicale et les réponses au sein de l'OTAN: les possibilités et les options pour la recherche et la technologie

(RTO-MP-HFM-108)

Synthèse

La surveillance médicale peut comprendre l'ensemble des informations médicales de la vie d'un patient. Pour l'OTAN, le terme « surveillance médicale » signifie des systèmes d'informations médicales sur le personnel qui sont conçus, intégrés et utilisés avec la surveillance médicale militaire pour protéger la santé physique et mentale du personnel militaire tout au long de son service militaire. Le processus peut débuter par les antécédents médicaux avant l'entrée en service et se poursuivre jusqu'après la cessation de fonctions pour comprendre les anciens combattants. Les données ainsi accumulées permettent de faire de la recherche épidémiologique sur de bonnes bases. En fonction de la rapidité de l'acquisition et de la transmission des données, les informations peuvent être exploitées pour le diagnostic d'événements inhabituels, tels que la survenue d'une épidémie de grippe, ou un attentat terroriste avec ADM.

Ces dernières années, de nouvelles applications des technologies de l'information ont permis de multiplier les capacités de surveillance qui se trouvaient auparavant en milieu hospitalier et qui sont de plus en plus utilisées par les forces déployées à l'avant. Il est impératif de faire évoluer les technologies de surveillance vers un système de systèmes intégré, en mesure de répondre aux futurs besoins d'identification de cas aigus et chroniques d'exposition du personnel militaire à des menaces pour la santé pendant toute leur carrière. Bon nombre des technologies des composants sont disponibles déjà, ou le seront à court terme – l'élément clé sera de les intégrer.

Le symposium a présenté un certain nombre d'exemples de surveillance médicale dans quelques pays de l'OTAN et du PfP (US, CA, NL, GR, BU et GEO). D'autres pays avaient décidé de ne pas présenter des communications.

Trois domaines de surveillance étaient présentés :

- les technologies et les philosophies de surveillance (US, CA, GR, NL)
- la surveillance spécifique aux effets mentaux du service et du déploiement (NL, CA, GEO, BU)
- les nouvelles technologies pour le diagnostic rapide des maladies infectieuses (US)

Les Etats-Unis ont présenté la majeure partie des communications (20/32 et deux discours d'ouverture). Les conférenciers US ont cependant souligné les difficultés rencontrées pour incorporer toutes les informations et tous les systèmes dans un système de systèmes en mesure de transmettre l'ensemble de ces informations aux demandeurs, qu'ils soient médecins militaires, décideurs ou chefs militaires sur le champ de bataille.

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[†] Paper not available at the time of publishing.

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[†] Paper not available at the time of publishing.

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Director General
Defence R&D Canada – Suffield
PO Box 4000 – Station Main
Medicine Hat, Alberta T1A 8K6
CANADA

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MGFB Healthcare Policy
Postbus 20701
2500 ES The Hague
THE NETHERLANDS

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Servicio de Endocrinologia
Hospital Militar Central Gomez Ulla
Glorieta del Ejercito s.n.
28047 Madrid
SPAIN

LtCol. Dr. Francisco RIOS TEJADA

Centro de Instruccion de Medicina Aeroespacial
(CIMA)
Arturo Soria 82
28027 Madrid
SPAIN

Prof. Dr. Erik FOSSE

Head of Department
Interventional Centre
Riskhospitalet Intervensjonssenteret
NO-0027 Oslo
NORWAY

Dr. Maarten NIEUWENHUIZEN

TNO Prins Maurits Laboratory
P.O. Box 45
Lange Kleiweg 137
2280 AA Rijswijk
THE NETHERLANDS

Col. Prof. Dr. Jozsef FURESZ

Scientific Director
Institute of Health of the Hungarian
Defence Forces
P.O. Box 68
H-1555 Budapest
HUNGARY

PANEL EXECUTIVE

Col. Carel E.M. BANSE, MA

BP 25
92201 Neuilly-sur-Seine, FRANCE
Tel: +33 1 55 61 22 60/62
Fax: +33 1 55 61 22 98

E-mail: bansec@rta.nato.int or pelatd@rta.nato.int

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14. Abstract	<p>Medical Surveillance of military personnel will provide valuable information, not only to medical doctors but to commanders and to policy makers as well. The challenge is to develop a future oriented system-of-systems approach and to ensure user friendliness in order to guarantee adequate quality of data input.</p>																				





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Defence Industry & Research
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