



Systems Medicine Awareness Event - Israel

REPORT D6.4 / T6.3



Chief Scientist Office, Ministry of Health, Israel (CSO-MOH, IL)

21 June 2016, 9:00am – 15:00pm

Tel Aviv Sourasky Medical Center, Israel

Rationale and methodology of awareness event

Introduction

Systems medicine is an interdisciplinary field of study that looks at the systems partaking the human body as part of an integrated whole, whilst incorporating biochemical, physiological, and environment interactions. Systems medicine draws on systems science and systems biology, and considers complex interactions within the human body in light of a patient's genomics, behaviour and environment.

Systems medicine offers a reproducible, systematic, tractable, scalable and evolvable approach. Systems Medicine provides a new tool for medical researchers and clinicians allowing clinicians to diagnose and treat patients faster and more effectively with the potential of developing a new level of Personalized, Participatory, Preventive and Participatory Medicine (P4-medicine) and change the way to catalyze the delivery of care to patients.

ERACoSysMed aims to better understand diseases by application of systems medicine and stimulates the collaboration between clinicians, systems biologists and patients.

Objective

To further enhance awareness in the clinic and beyond, ERACoSysMed organizes meetings aimed to inform clinicians and patient organizations about the approaches and success stories of systems medicine. Other stakeholders (e.g. industry and regulatory authorities) are also invited to these meetings. Through these awareness events clinicians and patients can be provided with information on how systems medicine can contribute to prevent, diagnose or treat diseases.

By bringing together different stakeholder groups in such an event, challenges and bottle necks will become clear and potential approaches can be discussed. In this atmosphere new collaborations may arise. The willingness of these stakeholders' groups to provide access to necessary clinical and personal data is crucial for long-term success of systems medicine. The majority of medical centers of clinics and universities currently do not have experience with systems medicine. Therefore, it is

important to raise the awareness among medical doctors and researchers in such organizations to System Medicine approaches and tools and promote cooperation between these groups.

Target Audience

Each awareness event has its own focus, depending on national interest and needs. The event in held the Israel on 21.6.2016 focussed on creating awareness among clinicians and system biologists, as well as industrial companies.

Primary stakeholders:

- Physicians / clinicians working in universities or medical centers
- Systems biologists
- *Secondary stakeholders:* industry, regulatory agencies, patient representatives, funding and policy agencies

Expected results

- Target audience will be more aware of the opportunities of Systems Medicine and will understand its importance in their daily practice.
- Target audience will be exposed to new reserches and discoveries in the field.
- Target audience will meet candidate collaboration partners.
- Target audience exchanges opinions and discuss future promotion of Systems Medicine in Israel.
- Raising a discussion about the application of System Medicine in Israel.

Reporting Rationale

This report is part of ERACoSysMed Task 6.3 (Additional activities to create awareness of systems medicine; CSO-MOH) and refers to Deliverable D6.4.

Program

The **day program** (attached) included an overview of the developing area of Systems Medicine, an interdisciplinary field of study that looks at the systems of the human body as part of an integrated whole, incorporating biochemical, physiological, and

environment interactions. On the event, researches from different fields applying Systems Medicine tools were presented by researchers and clinicians who study the delicate relationships between genomics, behavior and the patient's environment.

We were honored to host **Prof Charles Auffray** from EISBM and **Prof. David Harrison** from the University of St Andrews as our keynote lecturers for this conference. Prof. Auffray and Prof. Harrison gave an overview of the field's background, its current implementations and future vision.

Prof. Eli Sprecher, clinician (dermatologist) who presented the genetic aspect of Dermatology diseases and how Systems Medicine approaches are used for accurate diagnosis and efficient treatment of his patients. **Prof. Nir Friedman** (researcher) presented his work that combines advanced experimental and mathematical approaches to study intercellular communication, T cell activation and differentiation and TCR repertoires.

Dr. Rob Diemel represented ERACoSysMed in the conference and spoke about ERACoSysMed calls and funding opportunities and the awareness activities. Many of the participants approached Dr. Diemel during lunch networking break, asking him questions regarding the procedure of participating in ERACoSysMed calls and for consulting about finding international partners, which is clearly an important outcome of the conference.

The **second part** of the day was dedicated to industrial fascinating short presentations of biotech and start-up companies from the field of Systems Medicine, diagnosis and Personalized Medicine.

Concluding panel - The day was concluded by an open discussion panel with the participation of two clinicians and two researchers from the field. The panel aimed to better define the field of System Medicine and its future applications in Europe and Israel.

Conclusion

The turn out to our event exceeded our expectations - over 130 scientist, clinicians, industry and policy makers attended this meeting (around third were clinicians). We received very good feedback from the participants who felt the conference was Innovative, interesting, and unique and encouraged cooperation between experts in different fields. We also received many requests for more information about the possibilities to apply to ERACoSysMed calls, which is a blessed outcome of such an event.

Since System Medicine and personalized medicine is an evolving field in Israel, and in light of the great responsiveness of the audience, we feel that there is interest among the clinical and research communities in Israel who are interested in learning and hearing more about the attitude and practical tools of System Medicine. In addition, many participants expressed their interest in a future follow-up event in System Medicine. Therefore, CSO-MOH has started planning a follow-up conference in the beginning of 2017.





Lunch Break and Networking



Concluding Panel

We would like to thank our guest speakers who came from overseas - Prof Charles Auffray, Prof. David Harrison and Dr. Rob Diemel, ERACoSysMed ERA-Net and the rest of the speakers. We feel that this awareness event greatly helped promoting System Medicine in Israel.

The Israeli awareness event followed the first event that was previously held in Amsterdam on February 2016. Future Awareness Events are planned to take place in Slovenia (2017), Norway (2017), and Spain (2018).

יום עיון בנושא
**רפואה
מערכתית
SYSTEMS
MEDICINE**

21.6.16

תל אביב

מה זה? רפואה מערכתית (Systems Medicine) הינו תחום חדש המשלב את המחקר, הרפואה והמטופלים. תחום זה מעניק לחוקרים ולרופאים גישה חדשה לראייה מערכתית, כלים חדשים לדיאגנוסטיקה וטיפול רפואי מותאם ומדויק יותר. ככל שנרחיב את השימוש בגישות של רפואה מערכתית, כך נוכל להמשיך ולהתקדם לעבר שימוש ברפואה מותאמת אישית, המאפשרת טיפול ייחודי המותאם לכל מטופל.

מדוע? זו הזדמנות מצוינת להגדיר טוב יותר את תחום הרפואה המערכתית, לקדם שיתופי פעולה לשאלות המחקר שלכם ולשמוע על אפשרויות למימון מחקרים.

מי? מיועד לרופאים ולחוקרים בכל התחומים. ההשתתפות הינה ללא תשלום. נדרשת הרשמה מראש.

איפה ומתי? יום העיון יערך במרכז הרפואי תל-אביב ע"ש סוראסקי ב-21 ביוני 2016, 09:00-15:00

אירוע זה מאורגן על ידי לשכת המדען הראשי במשרד הבריאות כחלק מפעילותה ברשת האירופאית למחקר ERACoSysMed. להרשמה ולפרטים נוספים - ד"ר אילת זמיר ayelet.zamir@moh.gov.il

לשכת המדען הראשי במשרד הבריאות מזמינה אתכם להשתתף ביום עיון בנושא רפואה מערכתית, שיכלול עדכונים על הגילויים החדשים ביותר בתחום. נלמד על הגישה לראייה מערכתית וכיצד ניתן לבצע שיתוף פעולה מוצלח בין רופאים, ביולוגים מולקולריים, ביואינפורמטיקאים וסטטיסטיקאים. יתרונות השיטה של הרפואה המערכתית יוצגו על ידי מיטב החוקרים והרופאים הידועים בתחום, מהארץ ומהעולם.



Program

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| 8:30–9:00 | Gathering and coffee |
| 9:00–9:10 | Welcome remarks
Prof. Avi Israeli – The Chief Scientist - Ministry of Health
Prof. Ronni Gamzu - Tel Aviv Sourasky Medical Center |
| 9:10–9:35 | Prof. David Harrison - University of St Andrews, UK
Systems Medicine: The Route To Precision |
| 9:35–10:00 | Prof. Charles Auffray - EISBM, France
Translational Research Systems Medicine Toolbox: Application to Respiratory Diseases, Cancer and Autoimmunity |
| 10:00–10:25 | Prof. Eli Sprecher - Tel Aviv Sourasky Medical Center
Genetics In Dermatology: From Discovery To Recovery |
| 10:25–10:50 | Prof. Nir Friedman - Weizmann Institute
High Throughput Mapping Of T Cell Receptor Repertoires – From Basic Research To Clinical Applications |
| 10:50–11:10 | Dr. Rob Diemel - ZonMw, Netherlands
ERACoSysMed: Systems Medicine Calls And Awareness |
| 11:10–11:45 | Coffee Break |
| 11:45–12:00 | Dr. Chen Yanover – IBM Research
Machine Learning Meets Real World Evidence: From Data To Insights |
| 12:00–12:15 | Dr. Yuval Tabach – The Hebrew University, ReThink Pharmaceuticals
Uncovering The Disease And Novel Gene – Drug Interactions Through Comparative Genomics Of 500 Species |
| 12:15–12:30 | Dr. Sharon Kredon-Russo -Rosetta Genomics
microRNAs Biomarkers for Cancer Diagnosis |
| 12:30–12:45 | Dr. Ayala Lagziel - GeneSort Next Generation Diagnostics
From Code to Therapy - Clinical Actionability Revealed by NGS Multi-Gene Panels |
| 12:45–13:05 | Prof. Charles Auffray – EISBM, France
Toward a World Alliance of Health and Wellness based on Systems P4 Medicine and Citizen Science: The Vistera Project |
| 13:05–13:25 | Prof. David Harrison - University of St Andrews, UK –
Cancer Pathology: A Moving Target |
| 13:25–14:00 | Concluding Panel - Moderator: Dr. Ahmi Ben-Yehudah – CSO-MOH
Prof. Eran Leitersdorf - Hadassah Ein Karem
Prof. Doron Lancet - Weizmann Institute
Prof. David Harrison - University of St Andrews, UK
Prof. Charles Auffray - EISBM, France |
| 14:00–15:00 | Lunch and Networking |