



*11 November 2021*

# CAPACITY BUILDING THROUGH APPLIED SYSTEMS THINKING FOR HEALTH SYSTEMS MANAGERS AND RESEARCHERS IN IRAN

## Virtual course report

Funded by Bridging grant, Leading House South Asia and Iran

**Maryam Tavakkoli**

maryam.tavakkoli@swisstph.ch

**Daniel Cobos**

daniel.cobos@swisstph.ch

# TABLE OF CONTENTS

|                                                       |    |
|-------------------------------------------------------|----|
| TABLE OF CONTENTS.....                                | 2  |
| 1. Applied Systems Thinking.....                      | 3  |
| 2. Registration .....                                 | 3  |
| 2.1 Participants' profile .....                       | 4  |
| 3. Facilitators .....                                 | 5  |
| 4. Course.....                                        | 7  |
| 4.1 Opening day .....                                 | 7  |
| 4.2 Course Day1.....                                  | 8  |
| 4.2.1 Group work and moderated panel discussion ..... | 8  |
| 4.3 Course Day2.....                                  | 9  |
| 4.3.1 Group work and moderated panel discussion ..... | 9  |
| 4.4 Course Day3.....                                  | 9  |
| 4.5 Photo gallery.....                                | 11 |

# 1. APPLIED SYSTEMS THINKING

Health systems are complex adaptive systems. They often operate in rapidly changing social, political and economic environments. They are further characterized by difficult governance from multiple stakeholders with different agendas and interests, fragmented sub-systems, multiple non-aligned financing arrangements, and incoherent information flows. This makes intervening in health systems a difficult, necessary, and exciting endeavour. Systems thinking and system thinking tools are designed to address such complex systems and can help policy makers, health system managers, development agents, health system researchers or the public make sense of this complexity and propose appropriate interventions to improve health system performance.

The World Health Organization (WHO) has been advocating the application of system thinking in various parts of health systems. Health systems are extremely complicated environments, under constant changes, and influenced by numerous factors, many of which are partially or completely beyond the health sector and healthcare interventions scopes. Hence, “system thinking” approach while tackling issues of the healthcare system.

Given the complexities of the Iranian healthcare system, and in consideration of the rapid changes and unforeseen challenges that healthcare systems have seen during the recent years, familiarizing health professionals with and implementing system thinking method is a pressing need.

We conducted joint Systems thinking course as a collaboration between Swiss Tropical and Public Health Institute (University of Basel) and School of Public Health (SPH)- (Tehran University of Medical Sciences: TUMS) in Iran with three main objectives:

- To draw of the expertise and experience of the two universities to integrate systems thinking methods in research projects and teaching activities in both institutions;
- To increase systems thinking capacity in Iranian researchers, policy makers and health system managers;
- To generate new hypothesis on how the Iranian health systems can be improved using a systems thinking approach.

# 2. REGISTRATION

Call for registration was open March-April 2021. 48 individuals applied in 14 groups.

Participants were selected based on criteria for diversity of audience: Academia and MOHME, career level (junior, mid-level and senior), gender balance, researchers and policy makers, representatives from all three levels of Medical universities, National and subnational level

## 2.1 Participants' profile



### Participants background:

- Health Policy
- Health Education
- Health economy
- Healthcare management
- Dentistry
- Community and preventive medicine
- Pharmacoeconomics
- Pharma management
- Nutrition
- Nutrition and food policies
- Dental public health
- Medicine
- Social Medicine

### Participants affiliation:

- Ministry of Health and Medical Education
- Alborz University of Medical Sciences
- Iran University of Medical Sciences
- Tehran University of Medical Sciences
- Ardbil University of Medical Sciences
- Baghiat Allah University of Medical Sciences
- Shahid Beheshti University of Medical Sciences
- Shiraz University of Medical Sciences
- Fasa University of Medical Sciences
- Mashhad University of Medical Sciences

### 3. FACILITATORS



**Dr. Daniel Cobos**

Course director

He is a Medical Doctor specialized in Family and Community Medicine, with a Master's Degree in Public Health in Developing Countries from the London School of Hygiene and Tropical Medicine, and a PhD in Public Health. He has more than 15 years of experience working in health systems of low and middle-income countries. His areas of expertise are enterprise architecture process mapping applied to health systems, health information systems, district health systems, and primary health care.



**Maryam Tavakkoli**

Course coordinator

PhD candidate at the health systems research group with a particular interest in systems approaches applied to road traffic safety in low and middle income countries. She has a Master of Science in Health economics from Tehran University of Medical Sciences and research experience injury prevention and research ethics.



**Prof. Don de Savigny**

Epidemiologist and health systems specialist with a particular interest in systems science and decentralized health systems performance. He has published core documents on applied systems thinking tools for health systems.



**Carmen Sant Fruchtmann**

Scientific collaborator at the health systems research group with expertise in qualitative research, systems thinking and participatory approaches. She has a master of International Health, in which she specialized in how to scale up sustainable digital health solutions.



**Prof. Shamsa Zafar**

Professor at Fazia Medical Center, Air University, Pakistan. Her research focuses on district health systems and maternal health.



**Dr. Muhammad Bilal**

Research associate at Child Advocacy International (Pakistan). His work focuses on the application of systems thinking tools to district health management.



**Amirhossein Takian**

Course director

Professor and Head at the Department of Global Health & Public Policy, and Vice-Dean for International Affairs at the School of Public Health (SPH)- Tehran University of Medical Sciences (TUMS), Iran.

Chief Research Officer at the Health Equity Research Centre (HERC), TUMS.



**Ali Akbari Sari**

Professor and Head at the Department of Health Management, health policy and Economics, School of Public Health, Tehran University of Medical Sciences (TUMS).

Head of National Institute of Health Research (NIHR).

Member of the Research Council of Health Equity Research Center (HERC).



**Reza Majdzadeh**

Professor of Epidemiology at the Department of Epidemiology and Biostatistics, Tehran University of Medical Sciences (TUMS), School of Public Health.

Head of Knowledge Utilization Research Center - TUMS.

Faculty Member of the Research Council of Health Equity Research Center (HERC).



**Alireza Olyaeimanesh**

Professor and Head of Health Economics in the Department of Health Economics at the Tehran University of Medical Sciences (TUMS), and the Head of the Health Equity Research Center (HERC) and Member of the National Examination Board.

Deputy of Health at the Tehran University of Medical Sciences.

## 4. COURSE

The international course was designed and held virtually (via Zoom) in English for executive days (17<sup>th</sup> -21<sup>st</sup> October 2021 for 32 hours), by Swiss Tropical Public Health Institute (Swiss TPH) in collaboration with Health Equity Research Center (HERC) affiliated with the Tehran University of Medical Sciences (TUMS) and was jointly funded by Zhaw- Switzerland and National Institute for Medical Research Development (NIMAD)- Iran.

To save time, increase flexibility and quality, the workshop was held by a mix of offline and online sessions; the lectures and lessons were shared with participants via pre-recorded videos and they were asked to participate in online Q&A sessions and group work activities.

### 4.1 Opening day

The first day -and the inauguration day- of the workshop was open to public and held on Oct. 17<sup>th</sup> from 14:30-16:00 CET, in which more than 100 people participated.

During this virtual ceremony ,speakers and guests from both sides (Iran and Switzerland) including: **Dr. Hossein Ghanaati**, Chancellor of TUMS, **Dr. Farzad Mohamadi**, NIMAD secretary, **Dr. Alireza Olyaeemanesh**, Head of HERC, **Dr. Amirhossein Takian**, Deputy of Research at HERC and course director-Iran, **Dr. Seyed Reza Majdzadeh**, Head of Knowledge Translation Center, **Dr. Daniel Cobos**, Project leader at Swiss TPH and course director-Switzerland, **Dr. don Savigny**, Professor at Swiss TPH, and **Dr. Shamsa Rizwan**, Professor at Fazaia medical college, Pakistan, attended virtually.

Dr. Takian, as the moderator and course director, welcomed all and started the ceremony by inviting the first speaker, Dr. Alireza Olyaeemanesh who briefly introduced HERC, the center's background and research, and warmly thanked all organizers and participants of the workshop. As the second guest, Dr. Daniel Cobos, started his speech by thanking his Iranian colleagues and wishing for continues future collaborations. He then continued by a brief introduction to the course and demonstrating Swiss TPH's activities. As the third speaker, Dr. Majdzadeh, by drawing a map of Iranian Healthcare system proceeded to illustrate the Iranian setting's need for such thinking methods. Dr. De Savigny's speech, the fourth speaker and one of the world-renowned experts of systematic thinking, mainly focused on a more detailed explanation of what system thinking is and how it can be implemented to various forms of challenges. The ceremony proceeded by the Dr. Rizwan, the fifth guest, who presented Pakistan's experiences in using Causal Loop Diagrams for implementing health information and province-based healthcare systems. The sixth speaker, Dr. Mohamadi, proceeded to elaborate the need for a systematic approach by giving examples of medical interventions.

At the end and as the final guest speaker Dr. Ghanaati, after thanking workshop organizers and participants, started his speech by illustrating the value for health in the Islamic Republic of Iran, and by noting the need for putting health at the heart of all policy decision making processes and illuminating the innate complexity of healthcare systems proceeded to clarify the need for multi-sectoral collaborations in line with achieving SDGs and better health for all the population and what system thinking can contribute to such goals. The ceremony came to an end after a short Q&A session and a brief explanation of the workshop by Dr. Takian and other facilitators.

## 4.2 Course Day1

We started the first day of the course (Oct. 19<sup>th</sup>, 10:30 – 14:30 CET) with an introduction to the structure of the course and Q&A session with the main facilitators (Dr. Cobos and Maryam Tavakkoli)

| DAY1_Tuesday 19 October 2021 |                                                                               |                    |
|------------------------------|-------------------------------------------------------------------------------|--------------------|
| Pre-recorded session 1       | Reimagining health systems Post COVID-19                                      | Amir Takian        |
| Pre-recorded session 2       | Going beyond healthcare: Social and commercial determinants of NCDs           | Afshin Ostovar     |
| Pre-recorded session 3       | Introduction to Effectiveness decay                                           | Daniel Cobos       |
| 10:30 – 11:30                | Introduction and opening of the workshop                                      | Swiss TPH          |
| 11:30- 11:45                 | break                                                                         |                    |
| 11:45-12:00                  | Zoom technical check (one time)<br>Individuals are assigned to breakout rooms | TUMS               |
| 12:00 – 14:15                | Facilitated group work in breakout rooms                                      | Teams              |
| 14:15 – 14:30                | Coffee break                                                                  |                    |
| 14:30 – 15:30                | Moderated panel discussion                                                    | TUMS and Swiss TPH |

\*Facilitators:

Daniel Cobos, Maryam Tavakkoli, Carmen Sant Fructhman, Don de Savigny (Swiss TPH)

Amir Takian, Fatemeh Yaftian (TUMS)

### 4.2.1 Group work and moderated panel discussion

Participants (30 individuals) were divided into 6 breakout rooms. Every two rooms shared one health condition (Tuberculosis, Hypertension, and Diabetes, this division was used for the rest of the workshop as well) as their main theme, and each were asked to draw a mind map to demonstrate the flow and challenges that patients of these three conditions face along the way.

| Team leader                 | Team members                                                              | Breakout room  |
|-----------------------------|---------------------------------------------------------------------------|----------------|
| Hamed Zandian               | Telma Zahirian Moghadam , Shiva Tolouei Rakhshan                          | Tuberculosis 1 |
| Ali Kazemian                | Bahare Tahani                                                             |                |
| Sanaz Zargar                | Nader Markazi Moghadam , Maryam Moradi Binabaj, Asma Kazemi, Mahmood Tara | Tuberculosis 2 |
| Shohreh Naderimagham        | Mohsen Shatti, Mohamad AlJasem, Shervan Shoaie                            | Diabetes1      |
| Maryam Sadeghipour Roudsari | Amin Vahdati , Mahsa Malek Mohammadi                                      | Diabetes2      |
| Najmeh Moradi               | Marzieh Zangane, Negar Yoosefzadeh                                        |                |
| Fatemeh Rajabi              | Narges Rostamigoran, Haniye Sadat Sajadi                                  | Hypertension1  |
| Fatemeh Toorang             | Kazem Zende Del, Azin Nahvi                                               |                |
| Masoom Gholami              | Khatere Khanjankhani, Marzieh Najafi, Tahere Sharifi                      | Hypertension2  |

The day's activities finished by a short panel discussion where each team presented the results of their work and discussed their points, and received feedback from the facilitators.

## 4.3 Course Day2

The second day of the course started at 11:30 CET, and hosted Carmen Sant Fruchtmann, Dr. Shamsa Rizwan, Muhamad Bilal, and Dr. Ali Akbari Sari as the main facilitators.

After Q&A session and an introduction to the day's activities by the facilitator, facilitated group works started.

### 4.3.1 Group work and moderated panel discussion

This day's group works' aim was to introduce Causal Loop Diagrams and their use for the health system while demonstrating Pakistan's Experiences with implementing this method for health information systems. As the final part, the groups were asked to report back to the main room and discuss their diagrams and notes.

| DAY2_Wednesday 20 October 2021 |                                                                                          |                                         |
|--------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------|
| Pre-recorded session 1         | Systems thinking to address health inequities                                            | Alireza Olyaeemanesh                    |
| Pre-recorded session 2         | Multi-sectoral action to achieve Financial protection through Universal health coverage: | Ali Akbari Sari                         |
| Pre-recorded session 3         | Introduction to Causal loop diagram                                                      | Shamsa Zafar                            |
| 11:30 – 12:15                  | Introduction of facilitators, group work and pre-test                                    | Swiss TPH, Fazaia Medical College       |
| 12:15- 12:30                   | Break (individuals assigned to breakout rooms)                                           |                                         |
| 12:30– 14:15                   | Facilitated group work in breakout rooms                                                 | Teams                                   |
| 14:15 – 14:30                  | Coffee break                                                                             |                                         |
| 14:30 – 15:30                  | Moderated panel discussion                                                               | TUMS, Swiss TPH, Fazaia Medical College |

\*Facilitators:

Shamsa Zafar, Muhammad Bilal (Fazaia Medical College), Carmen Sant Fruchtmann, Maryam Tavakkoli, Don de Savigny (Swiss TPH)

Ali Akbari Sari, Fatemeh Yaftian (TUMS)

## 4.4 Course Day3

The third and the final day of the workshop started at 11:30 CET, and was initiated by Dr. Cobos and Ms. Tavakkoli, Dr. Takian and Dr. Majdzadeh as the main facilitators, with a short introduction to the day's schedule and proceeded to the groupworks; which were designed to familiarize the participants with Bizagi and modeling processes.

| DAY3_Thursday 21 October 2021 |                                                                                 |                       |
|-------------------------------|---------------------------------------------------------------------------------|-----------------------|
| Pre-recorded session 1        | Integration of health services through primary health care                      | Abtin Heydarzadeh     |
| Pre-recorded session 2        | Health information systems: a quest for integration ( example from road safety) | Maryam Tavakkoli      |
| Pre-recorded session 3        | Introduction to Process mapping and modelling                                   | Daniel Cobos          |
| 11:30 – 12:00                 | Introduction of facilitators, group work and pre-test                           | Swiss TPH             |
| 12:00- 12:15                  | Break (individuals assigned to breakout rooms)                                  |                       |
| 12:15– 14:00                  | Facilitated group work in breakout rooms                                        | Teams                 |
| 14:00 – 14:15                 | Coffee break                                                                    |                       |
| 14:15 – 15:30                 | Moderated panel discussion<br>Closing                                           | TUMS and Swiss<br>TPH |

\*Facilitators:

Daniel Cobos, Maryam Tavakkoli, Don de Savigny (Swiss TPH)

Reza Majdzadeh, Amir Takian, Fatemeh Yaftian (TUMS)

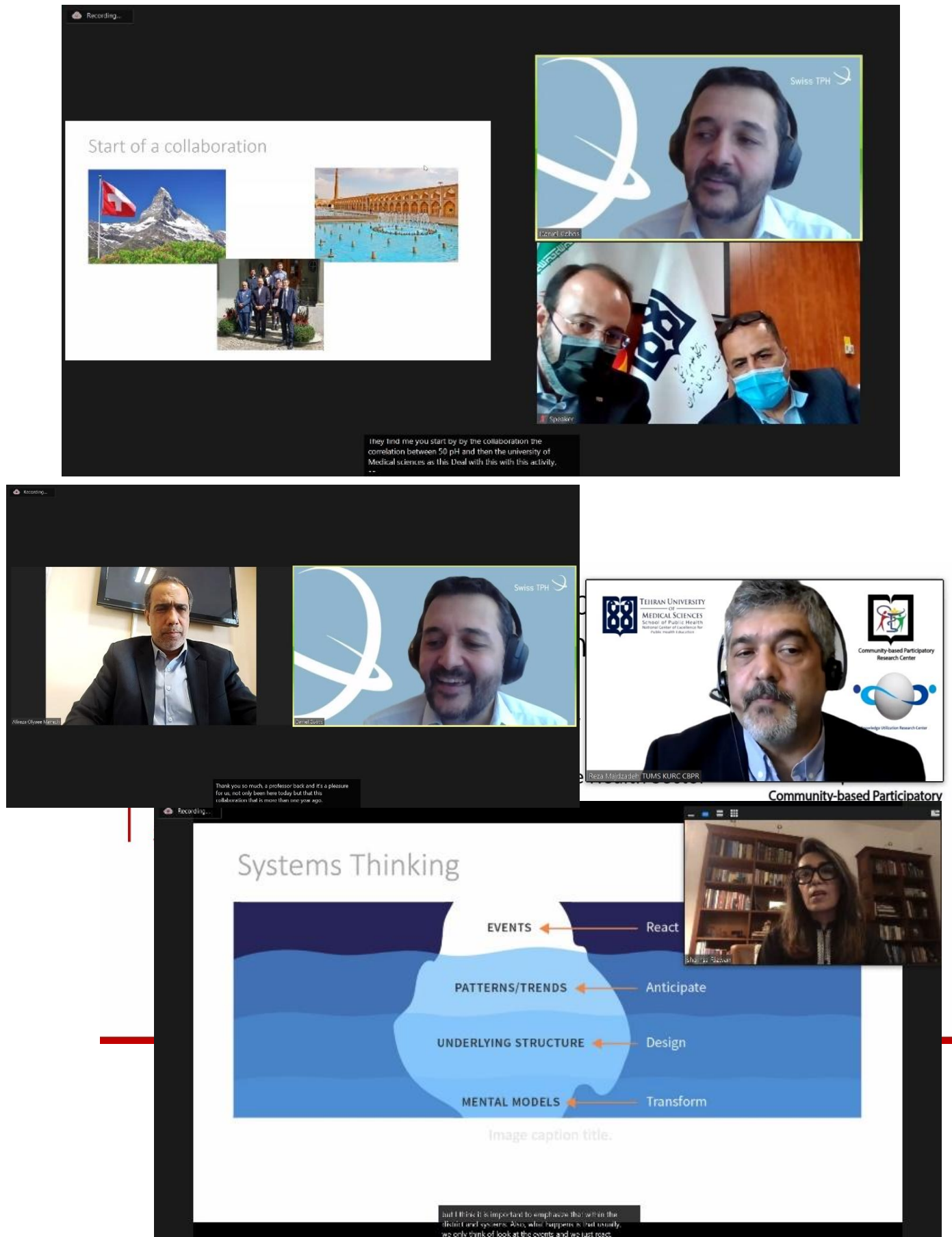
After the teams concluded their work, they reported back to the main session and after the final discussions, questions, and a short closing ceremony - during which all present facilitators and course directors thanked participants and the organizers of the event- the workshop officially ended.

It is noteworthy to mention that each qualified participant was given a jointly signed certificate from HERC and Swiss TPH.



## 5. PHOTO GALLERY

### Opening day



## Day1

Zoom Meeting

Recording...

01:52:43

Amir Takian, Daniel Cobos, Don de Savigny, Amin Vahdati, Maryam Tavakkoli, Sadeqipour, Mohamad Aljaseem, Haniye S Sajadi, Masoomeh Gholami, Kazem Zendeheidi

Unmute, Start Video, Security, Participants (42), Polls, Chat, Share Screen, Reactions, More, Leave

File Edit Insert Tools View Help Total burden of tuberculosis

Affordability

Availability

Affordability

Accessed tuberculosis tests (95%)

appropriate prescription (88%)

EBM/EBP

Guideline CPG

Received correct tuberculosis diagnosis (82%)

false negative test

Accessed tuberculosis drug (65%)

Drug store — sanction

affordability

Zoom Meeting

Recording...

02:10:08

Amir Takian, Daniel Cobos, Don de Savigny, Maryam Tavakkoli, Amin Vahdati, Bahareh Tahani, Haniye S Sajadi, Mahmood Tara

## Day2

Zoom Meeting

Recording...

05:06:21

Dr Ali Akbari\_Sari IRI NIHR

Don de Savigny

shamsa Rizwan

Maryam Tavakkoli

Carmen Sant

Dr. Muhammad Bilal

04:39:09

Dr Ali Akbari\_Sari IRI NIHR

Don de Savigny

shamsa Rizwan

Maryam Tavakkoli

Carmen Sant

Dr. Muhammad Bilal

Kazem Zendehei

Mahsa Malek

Amir Takian

naderimaghani

Telma Zahirian Moghadam

Mahmood Tara

Zoom Meeting

Recording...

04:19:42

Dr Ali Akbari\_Sari IRI NIHR

Mohamad AlJasem

Maryam Tavakkoli

Kazem Zendehei

shamsa Rizwan

Mahsa Malek

Carmen Sant

Dr. Muhammad Bilal

Don de Savigny

naderimaghani

Telma Zahirian Moghadam

Bahareh Tahani

Shiva Tolouei Rakhshan

## Day 3

