

Stakeholder Network Analysis

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Workshop – Introduction to Stakeholder Network Analysis : 21 May 2024

Objectives

Objective 1

- To introduce the concept of network analysis

Objective 2

- To understand how networks can be used through research, policy and practice

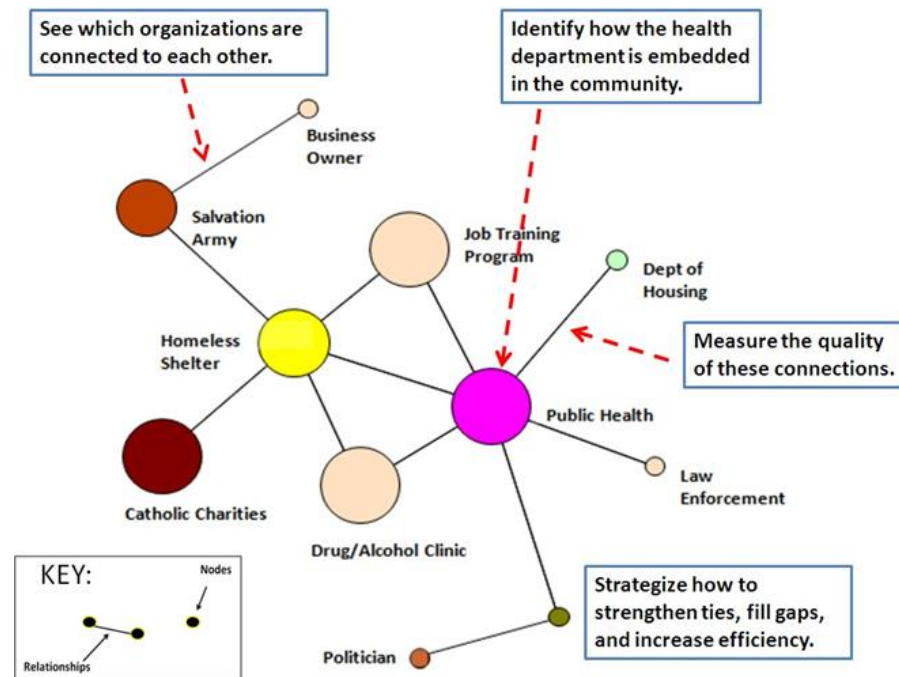
Objective 3

- To highlight tools, software and core texts in network analysis

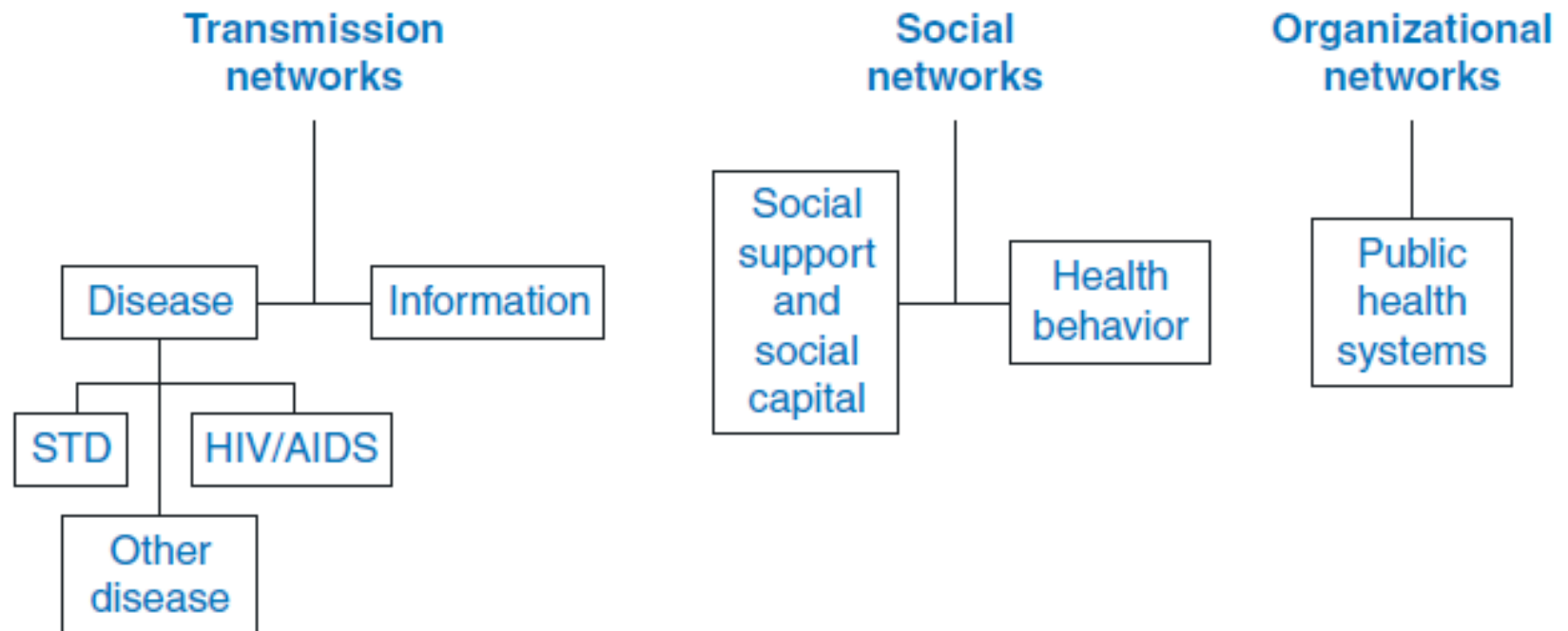
What do we mean by a “stakeholder network”?

Definition: The interactions between individuals or organisations or stakeholders in different settings.

Stakeholder network analysis (SNA) provides a set of theories, techniques and tools useful for understanding a broad range of behaviours as people and organisations interact with others.



Categorisation of network analysis in health



Why important?



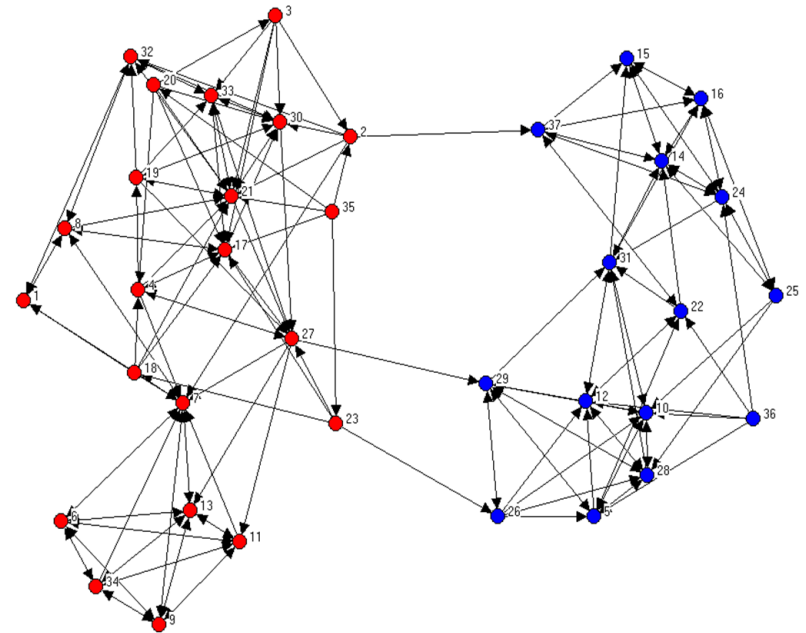
- Describes, explores, and helps understand structural and relational aspects of how people and organisations interact

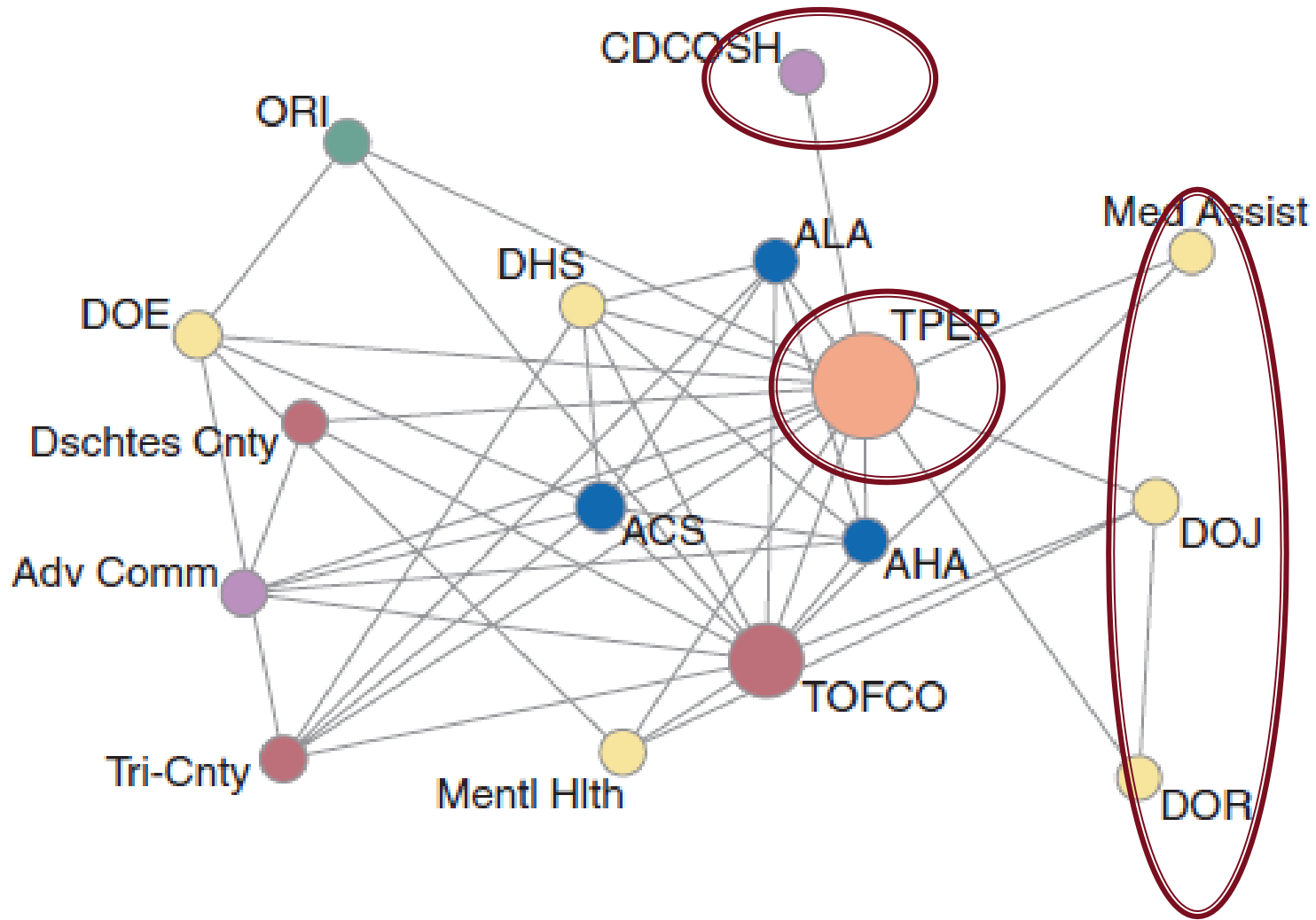
Networks have 4 important features:

1. Network analysis is a structural approach that focuses in part on patterns of linkages between stakeholders;
2. It is grounded in empirical data;
3. It makes frequent use of mathematical and computational models;
4. it is highly graphical / visual

Visualisation of a network

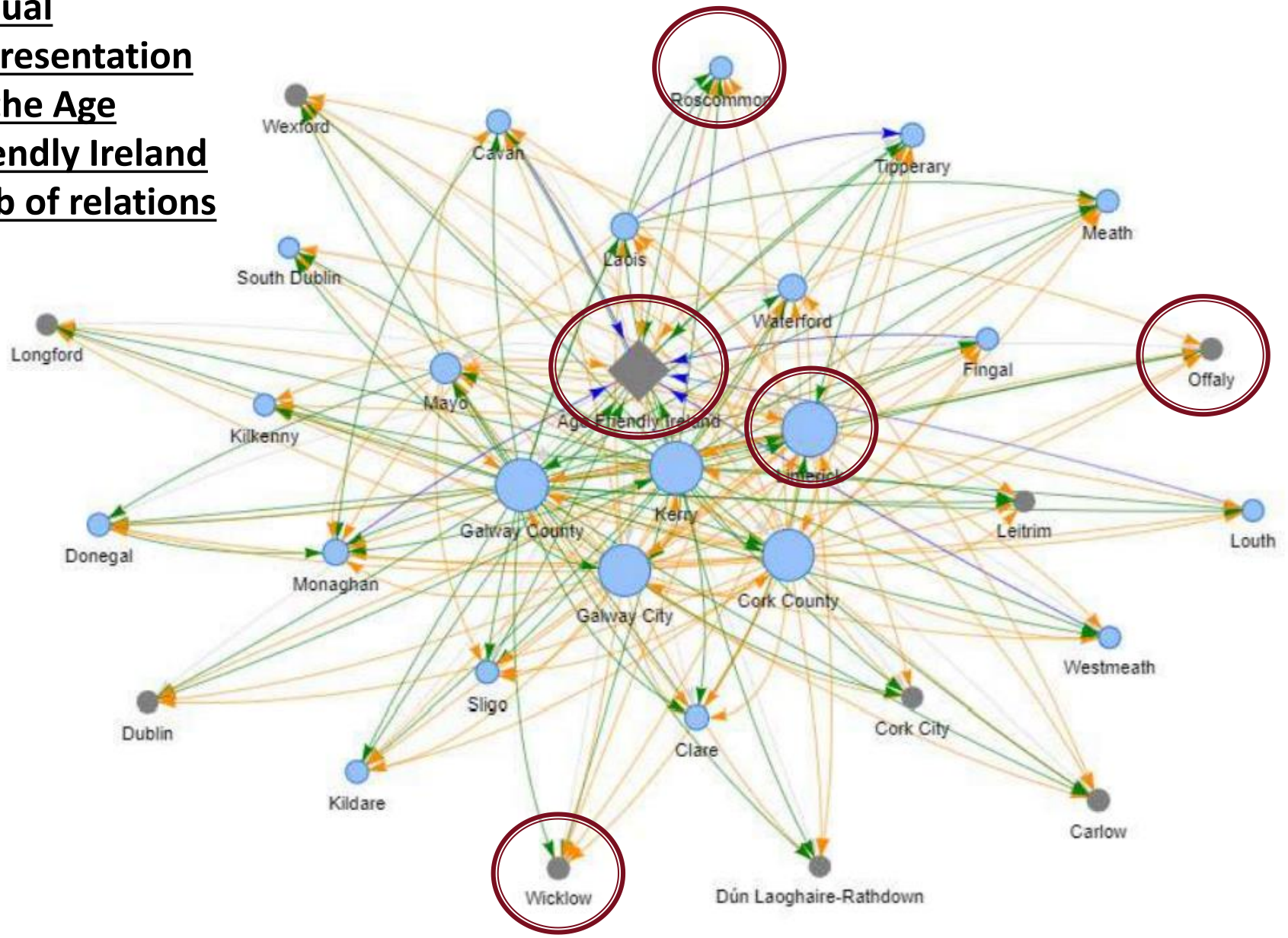
- People (or organisations/groups) are represented as **nodes**
- Relationships are represented as **ties**: colleagues, exchange of information
- **Stakeholder Network Analysis**: allows analysis using tools of mathematical graph theory





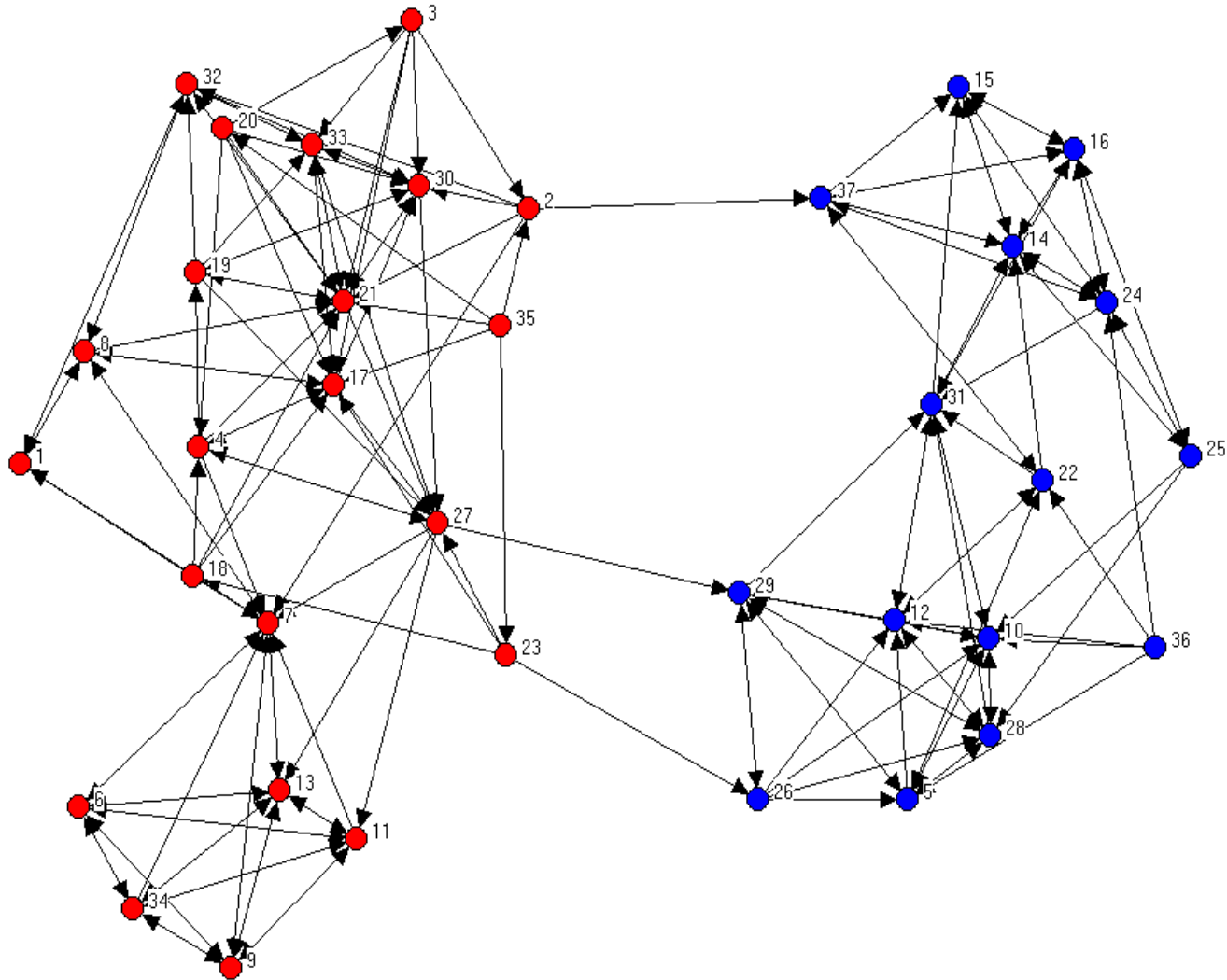
Example: A graphic representation of the key stakeholders in a tobacco control programme

Visual
representation
of the Age
Friendly Ireland
web of relations

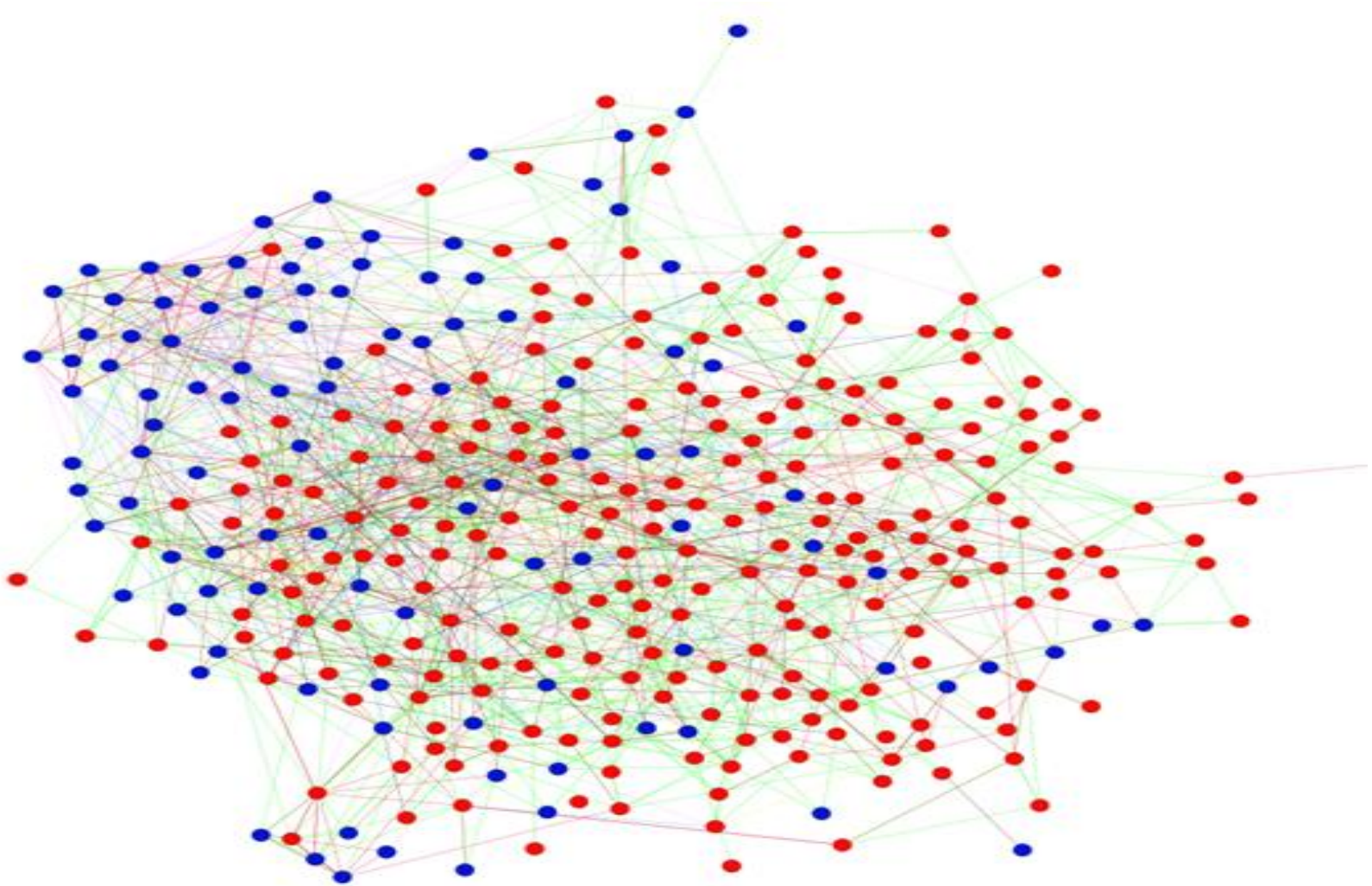


<https://iris.who.int/bitstream/handle/10665/366634/9789240068698-eng.pdf?sequence=1>

Friendships Among Students in One Classroom (12 year olds)



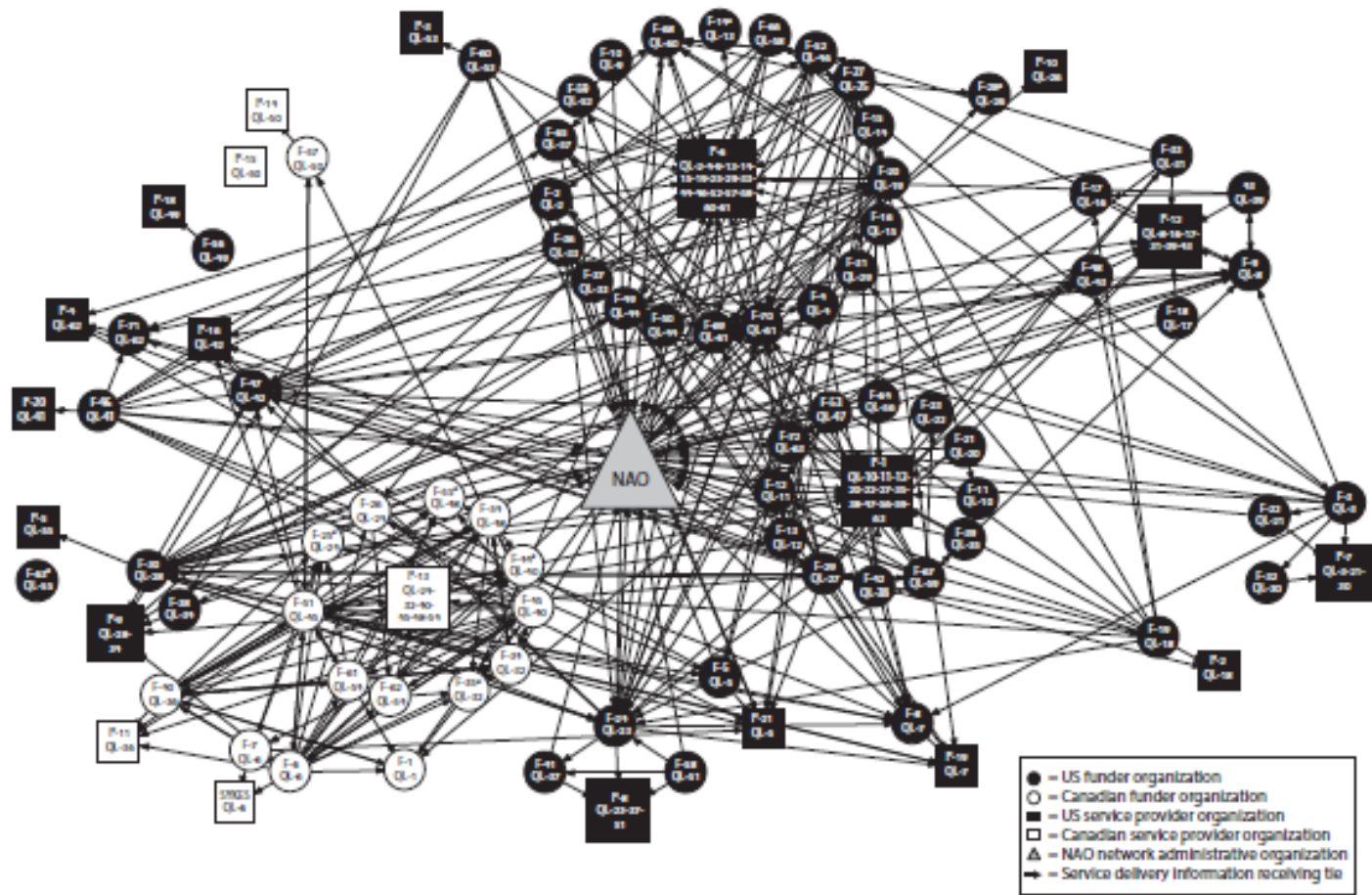
Relationships of 10th graders (15-16 year olds)



Coevolution of Information Sharing and Implementation of Evidence-Based Practices Among North American Tobacco Cessation Quitlines

Liesbeth Mercken, PhD, Jessie E. Saul, PhD, Robin H. Lemaire, PhD, Thomas W. Valente, PhD, and Scott J. Leischow, PhD

Am J Public Health. 2015 Sep;105(9):1814-22



Note. F = funder; NAO = network administrative organization; P = service provider; QL = quitline.
*Nonrespondent.

Diffusion of Policies through Networks





Social Science & Medicine

Volume 145, November 2015, Pages 89–97



Diffusion of innovations theory applied to global tobacco control treaty ratification

Thomas W. Valente^a,  , Stephanie R. Dyal^a, Kar-Hai Chu^a, Heather Wipfli^a, Kayo Fujimoto^b

- Analysed the 10-year diffusion of the Framework Convention for Tobacco Control
- Dynamic diffusion model using multiple trade and communication networks
- Contagion, opinion leadership, susceptibility, and infectiousness vary over time
- GLOBALink, a tobacco control communication forum, accelerated treaty diffusion

Role in Implementation Research



Attention to the stakeholder networks of:

- implementing agencies,
- change agents
- larger social systems
- intervention recipients

..... will substantially improve the implementation process

Citation: Valente TW, Palinkas LA, Czaja S, Chu K-H, Brown CH (2015) Social Network Analysis for Program Implementation. PLoS ONE 10(6): e0131712. doi:10.1371/journal.pone.0131712



RESEARCH ARTICLE

Social Network Analysis for Program Implementation

Thomas W. Valente^{1*}, Lawrence A. Palinkas², Sara Czaja³, Kar-Hai Chu¹, C. Hendricks Brown⁴

ANATOMY OF A SOCIAL NETWORK

CLOSURE

Building trust within a cluster

BROKERAGE

Connecting clusters

BETWEENNESS

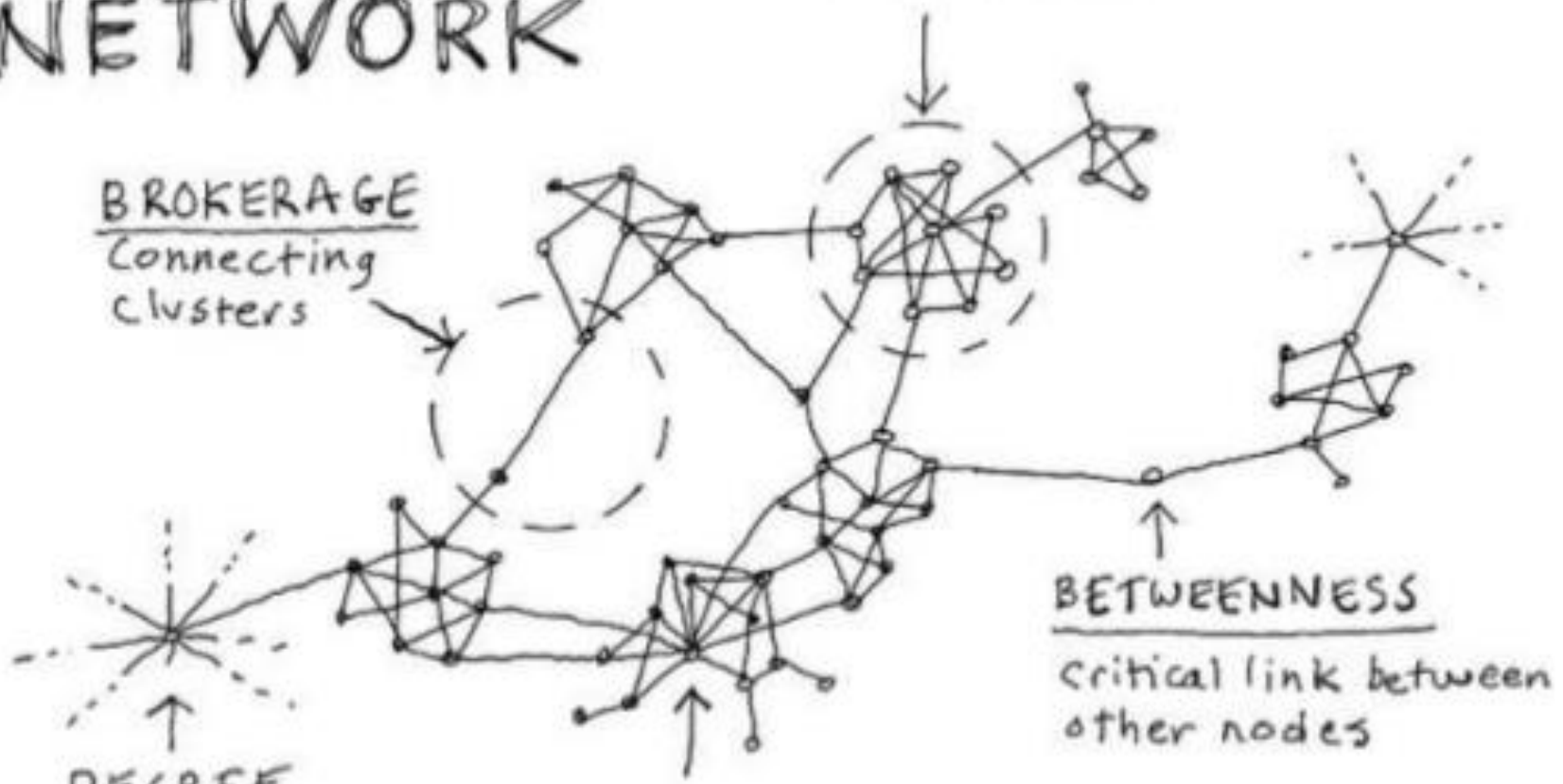
critical link between other nodes

DEGREE

Number of connections

CLOSENESS

How easily a node can make connections



Public health system: Collaborating across sectors

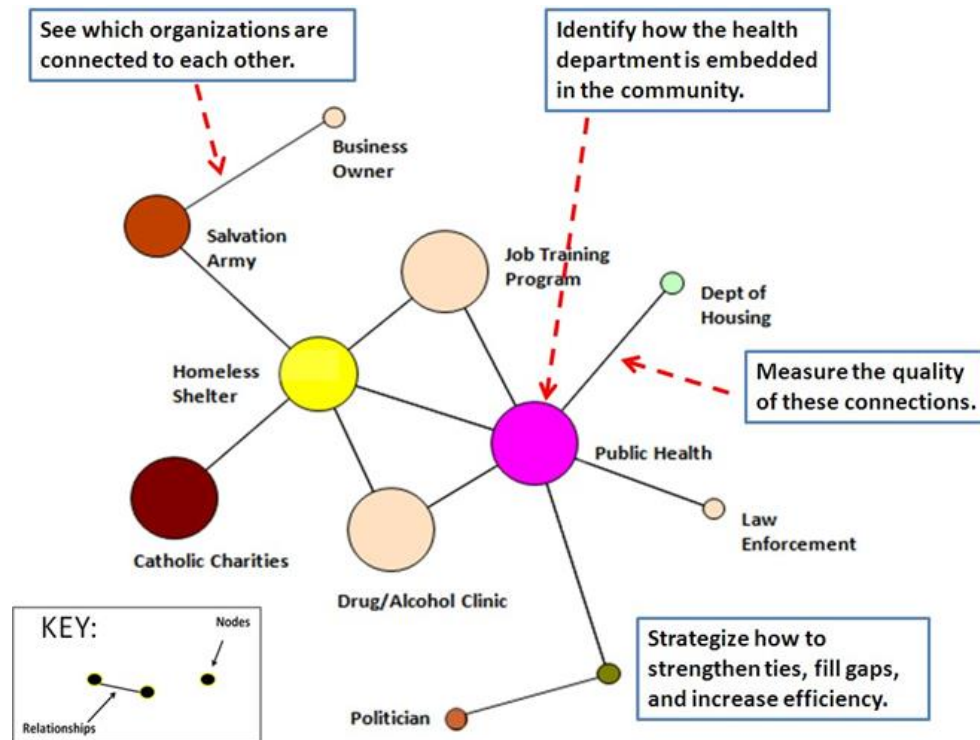


- Major challenge
- How to partner with other organisations, agencies and groups
- Collaboratively address goals in population wide health
- Maximise resource sharing
- Required multi-agency partnerships
- Antecedents of poor health are multi-factorial and require a multi-systemic approach



Operationalising collaboration as networks

- Public health collaboratives
- Operationalized as “networks”
- Stakeholder network analysis is a method used to measure the number *and* quality of relationships among organisations



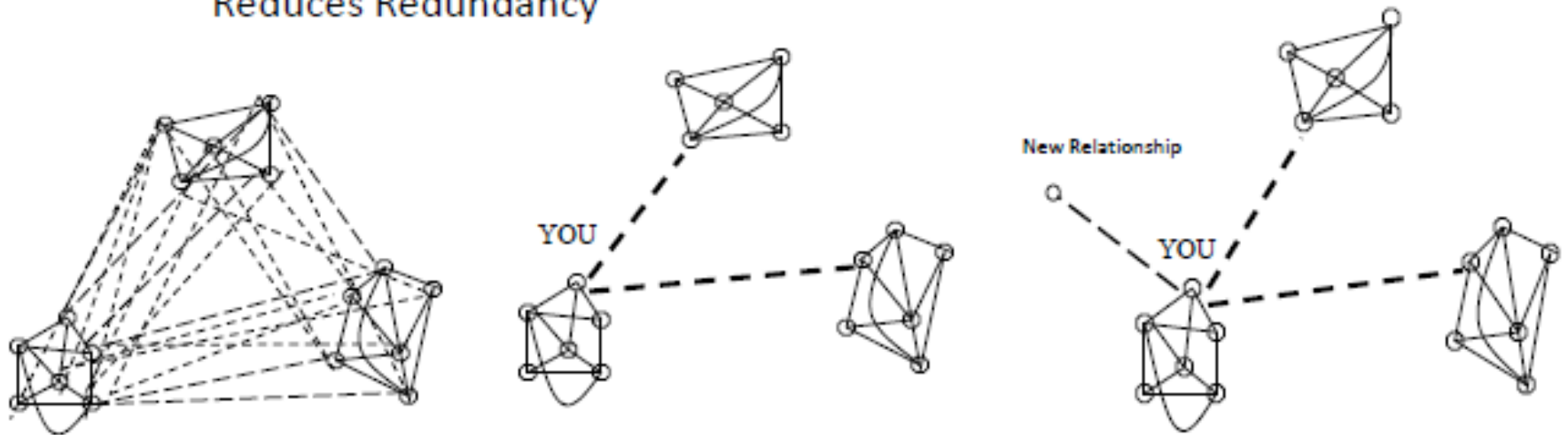
Core Dimensions of Connectivity in Public Health Collaboratives

Dimension	Measures
Membership	Organizational identification by name, type, and other organizational characteristics (e.g. size, mission of organization)
Network Interaction	Network patterns and positions identified by subgroups, key players, etc.
Role of HD	Convener/facilitator vs. equal member
Frequency of Interaction	Types and levels of communications among members
Organizational Value to the Collaborative	Power, involvement, resources
Trust	Reliability, shared belief in mission, opportunity for frank discussion
Reciprocity	Evidence of mutual exchange of resources

Varda et al. Core dimensions of connectivity in public health collaboratives. J Public Health Management Practice 2008.

Network Theories Give Us a Unique Perspective

- Strength of Weak Ties (Granovetter)
 - Counting Noses, Many stakeholders at the table, Greater Density
- Is More Really Better?
 - Law of N-Squared, Risk of Burn Out & Overuse, Collaboration Failure
- Less is More as an Alternative Solution (Burt: Structural Holes)
 - Less Ties to More Subgroups = Structural Advantages
 - High Quality Ties = Generates Information Benefits; Increasing Efficiency; Reduces Redundancy

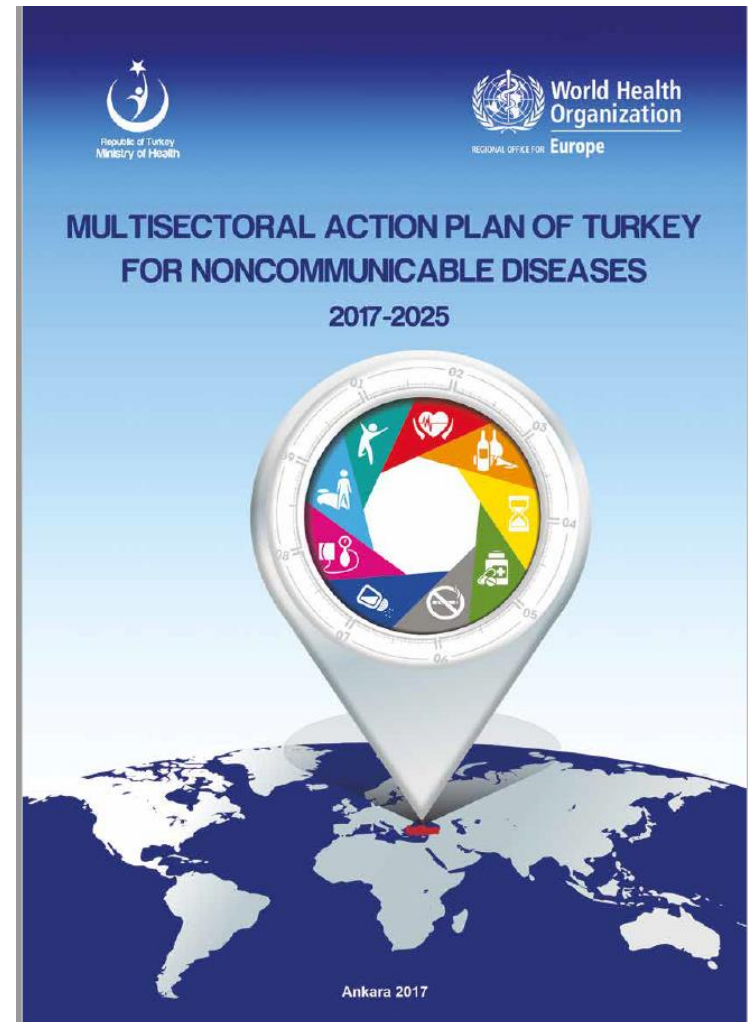


Network Analysis of Stakeholders in Turkey



To undertake stakeholder network analysis to understand:

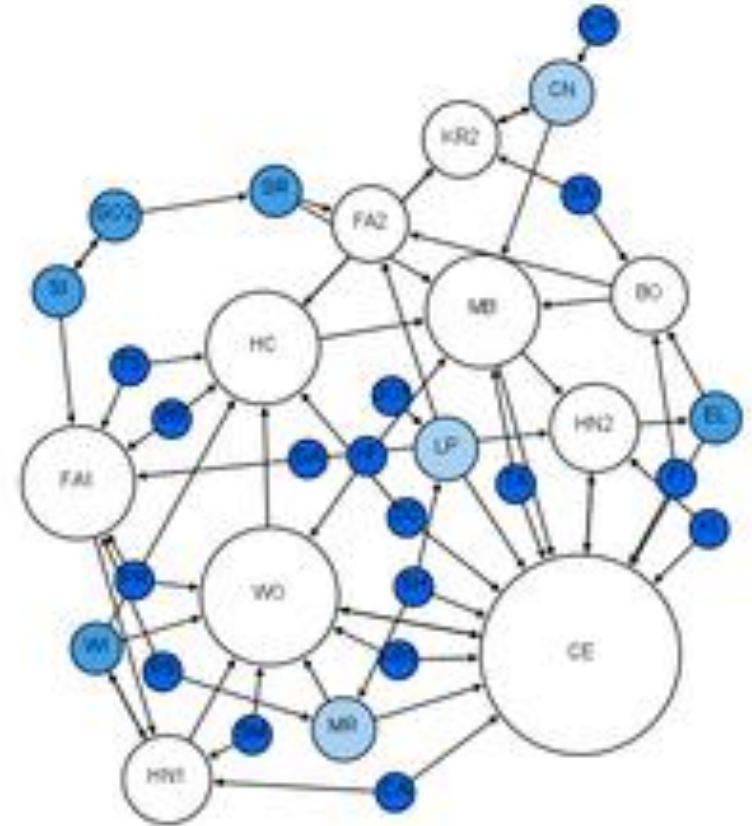
- Characteristics of the networks
- Structure of the network
- Communication
- Influence
- Trust
- Function
- Identify strategies for further strengthening and sustainability



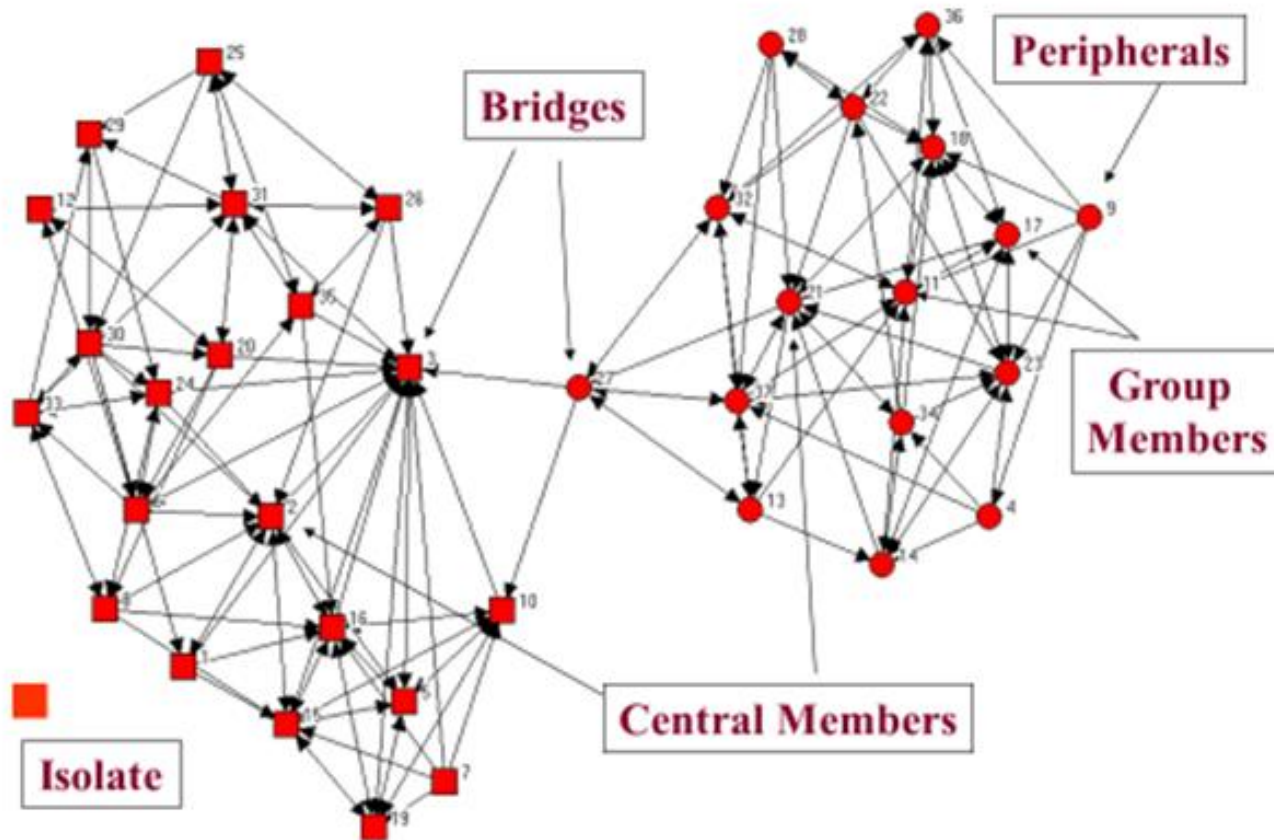
- Identification of the current stakeholders involved and how they are linked
- To understand how certain organisations are embedded in the network;
- To provide a description of the structure and characteristics of the network, how its participants communicate with each other and how influential they are
- To measure the quality of these connections;
- Identification of areas and strategies for further strengthening the participation and involvement of key stakeholders.

Methods

- > 100 stakeholders
- Eligible participants: named contributors in the Multi-sectoral Action Plan of Turkey for NCDs
- Socio-centric data (i.e. complete network)
- 33-item stakeholder network questionnaire
 - strength of relationships
 - trust
 - exchange of communication and resources
 - sustainability



- Network visualisations
- Change agents
- Boundary spanners
- Detect communities, cliques, components



Discussion

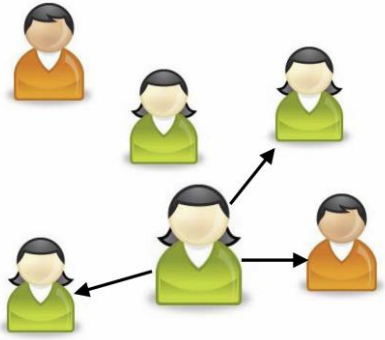


- Network science can help
- Better understand multi-sectoral stakeholder networks
- Inform network intervention approaches to improve efficiency and effectiveness of the network
- Strategies to sustainability the network
- Dynamic network – changing actors; changing organisations; changing aims and objectives; changing actions

Stakeholdernet.org



Relational data



data:

1	8	32	7		
2	32	21	30	37	7
3	2	17	21	30	33
4	19	17	27	21	7
5	28	29	12	22	10
6	9	11	34	13	7
7	13	9	6	8	1
8	1	7	32	21	17
9	6	7	11	13	34
10	28	29	5	31	
11	34	9	6	7	13
12	22	28	10	31	29
13	7	6	9	11	34
14	24	16	15	25	31
15	16	24	14		
16	15	24	14	37	25
17	33	30	27	8	4
18	7	21	1	17	4
19	32	30	33	21	27
20	17	21	30	4	3
21	30	32	19	33	27
22	12	37	31	14	5
23	17	18	27	26	
24	14	15	16	37	
25	10	14	28	16	31
26	29	5	28	12	24
27	4	13	7	11	10
28	5	10	12	29	29
29	26	5	10	31	31
30	21	33	32	19	28
31	10	15	12	16	27
32	30	21	33	8	1
33	17	21	30	32	7
34	11	9	6	7	13
35	17	2	23	21	20
36	10	5	24	22	12
37	16	14	15	22	24

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	
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6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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