

# Monitoring and Measuring Connectivity in Public Health Collaboratives with PARTNER

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# Public Health Collaboratives

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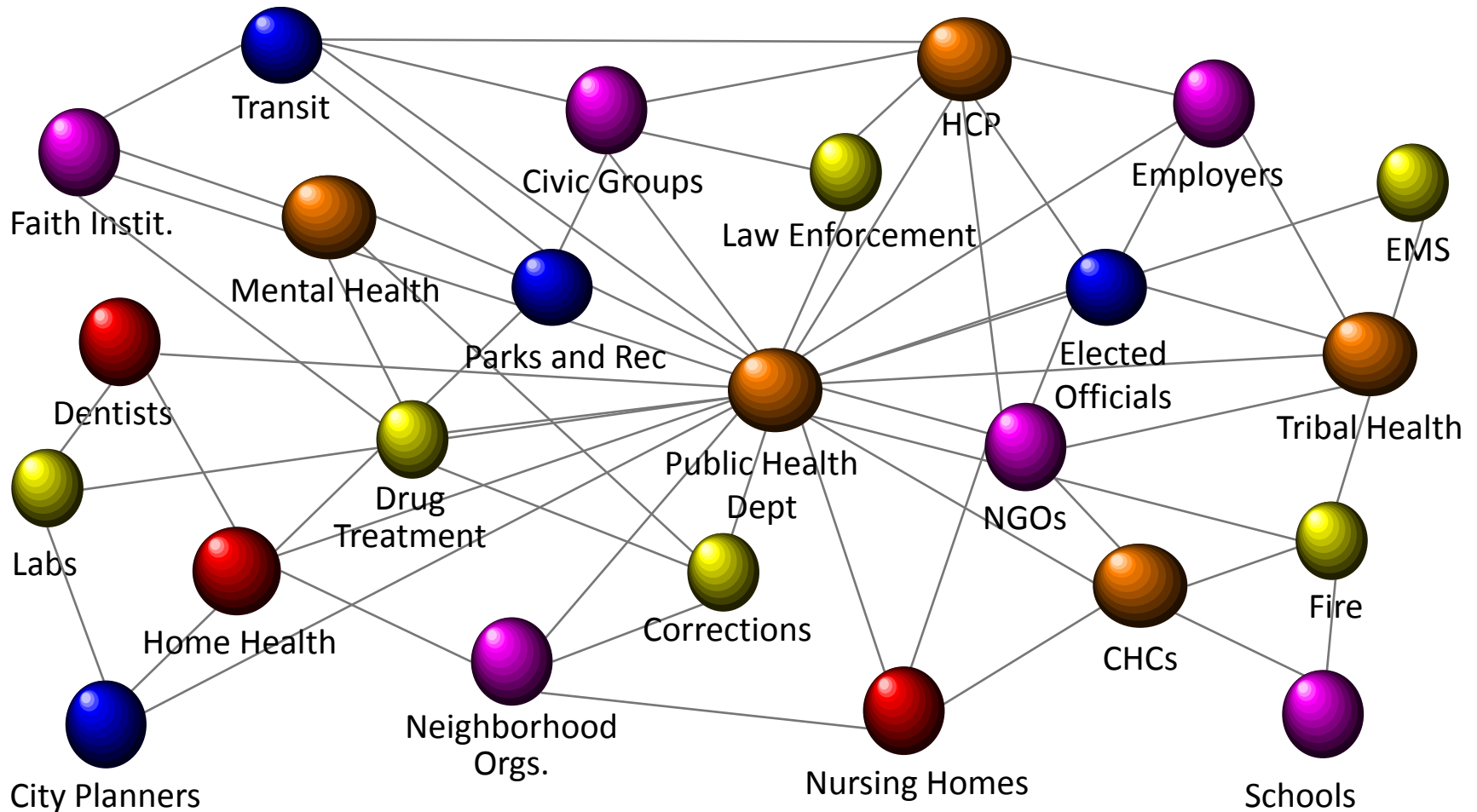
- As Complex Systems
- As Collective Action
- Major challenge = how to partner with other organizations, agencies, and groups to collaboratively address goals in population health while effectively maximizing resource sharing of the partners involved
- Today's efforts require multi-agency partnerships between (both governmental and non-governmental)
- These partnerships are created by an understanding that the antecedents of poor health are multi-factorial and thus require a multi-systemic approach

# Why Current Efforts Are Not Sufficient

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- The process by which public health departments have engaged partners in PHCs to address the multiple influences of these systems has varied
  - Few ways to measure and evaluate the success of these partnerships and how organizations interact with one another.
- Public health leaders, and partners involved in collaboratives, are eager to understand how to quantify and analyze the collaboratives
- Thus, a deeper understanding of how to assess the strength of a collaborative, what motivates and moves constituents to action on public health issues, and benefits from particular relationships in a collaborative is required.

# Public Health System



Graphic from: NACCHO (MAPP website):

<http://www.naccho.org/topics/infrastructure/MAPP/index.cfm>

# The MAPP Paradigm Shift

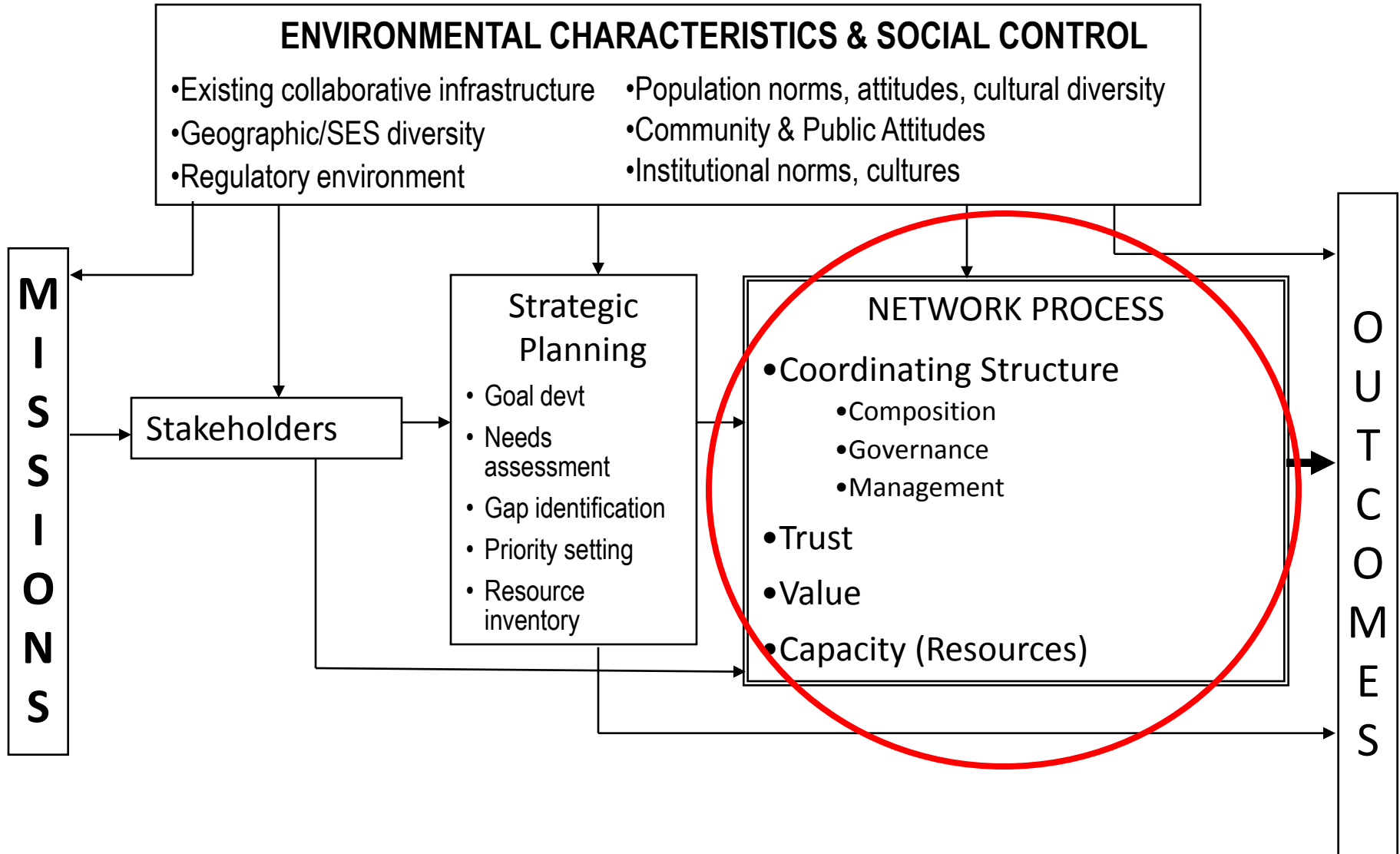
<b>FROM</b>	<b>TO</b>
<b>Operational planning</b>	<b>Strategic Planning</b>
<b>Focus on the agency</b>	<b>Focus on community &amp; entire public health system</b>
<b>Needs assessment</b>	<b>Emphasis on assets and resources</b>
<b>Medically oriented model</b>	<b>Broad definition of health</b>
<b>Agency knows all</b>	<b>Everyone knows something</b>

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# Framework for Community Collaboration

(Network Process is a unique piece of this framework)



# What is the Network Process?

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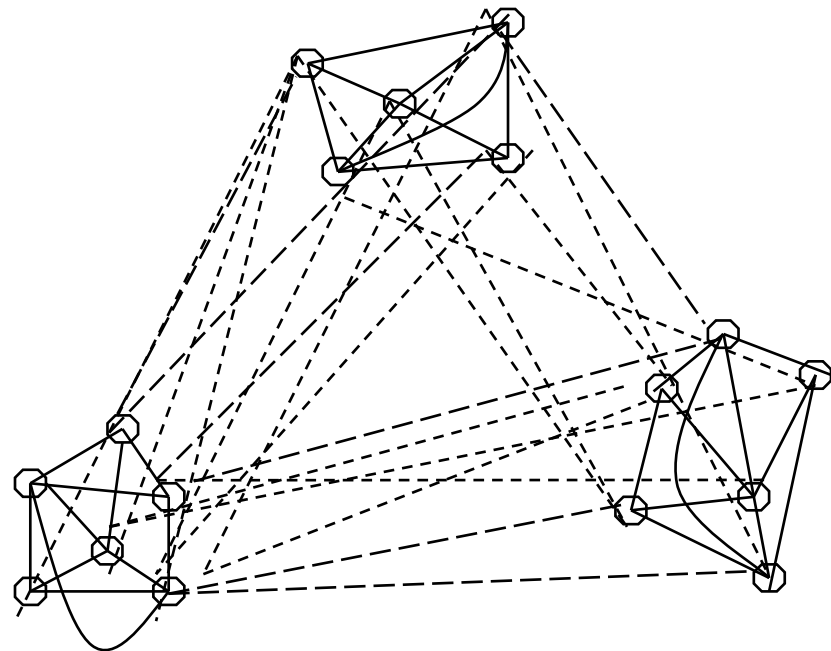
- Operationalize partners as a “network”
- Optimizing, not just a single relationship, the entire network of relationships
- Leads to policy/management decisions about
  - Priority of programs
  - Variances between actual and budgeted performance

Helps to answer **PROCESS QUESTIONS**:

- How well did the process meet the committee’s expectations?
- What action steps can be taken to improve the process?

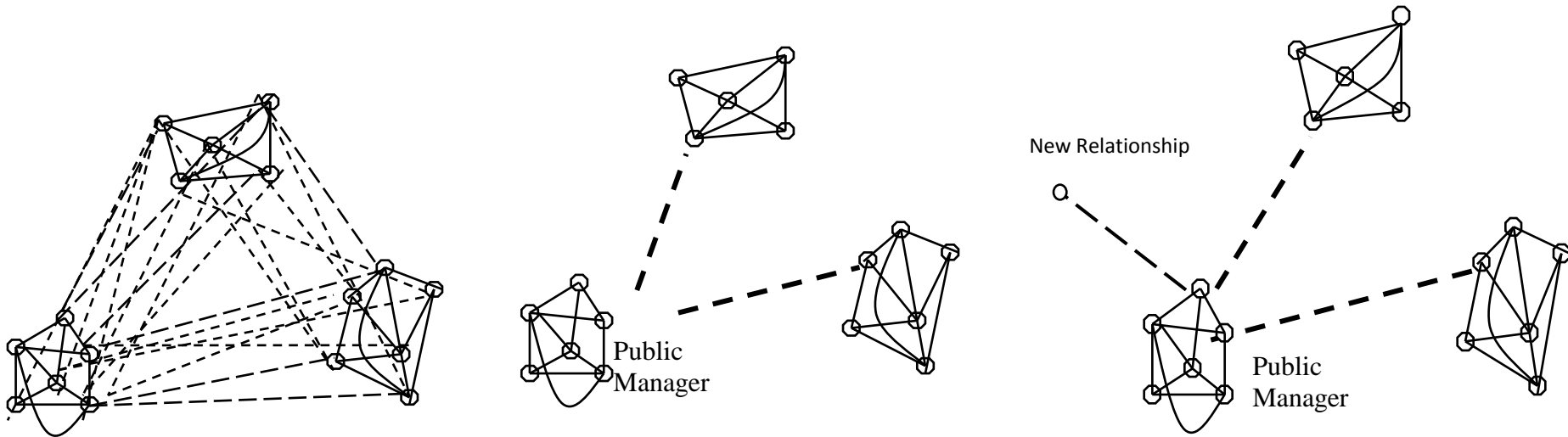
# Current PHC Strategy: More Collaboration is Better

- Granovetter: Strength of Weak Ties
  - “Connect on your similarity, and profit from your diversity (Krebs and Holley)
  - More Weak Ties = More Diversity
- Is More Really Better?
  - Counting Noses
  - Many stakeholders at the table
  - Greater Density
- Problems:
  - Law of N-Squared
  - Risk of Burn Out & Overuse
  - Collaboration Failure



# Less is More as an Alternative Solution

- Discriminate choices based on less is more theories
- Relationship Budgeting
- Burt: Structural Holes
  - Less Ties to More Subgroups = Structural Advantages
  - High Quality Ties = Generates Information Benefits; Increasing Efficiency; Reduces Redundancy



# Applying These Concepts to Public Health Collaboratives

3 MAPP Examples

# Core Dimensions of Connectivity in Public Health Collaboratives

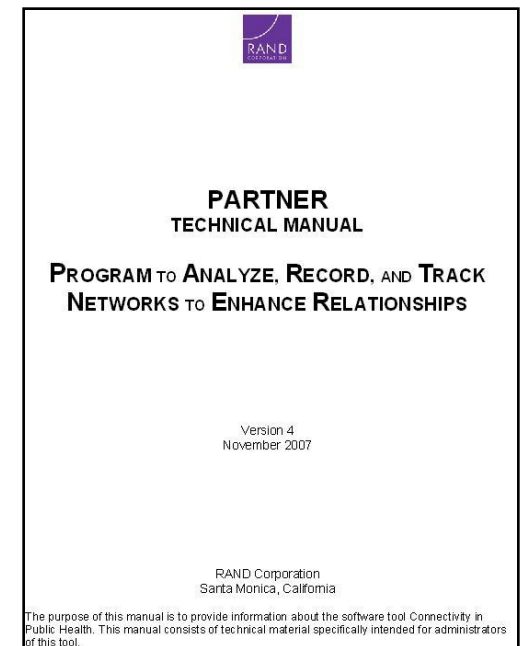
<b>Dimension</b>	<b>Measures</b>
Membership	Organizational identification by name, type, and other organizational characteristics (e.g. size, mission of organization)
Network Interaction	Network patterns and positions identified by subgroups, key players, etc.
Role of HD	Convener/facilitator vs. equal 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

# PARTNER

## PROGRAM TO ANALYZE, RECORD, AND TRACK NETWORKS TO ENHANCE RELATIONSHIPS

### 3 Components:

- Data Gathering: Survey
- Analysis Tool
- Technical Guide



# How It Works

Members of the Collaborative  
Answer Surveys



# PARTNER

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Before Analysis,

Data Gathering: Survey

# PARTNER Survey

Thank you for agreeing to participate in this survey.  
 The results will help us record, analyze, and track the way our collaborative works together to address health issues.

From: FILL IN

Collaborative: FILL IN

### What are the benefits?

- 1) To measure how well our collaborative scores on dimensions of connectivity
- 2) To visualize our connections (see network map to the right).

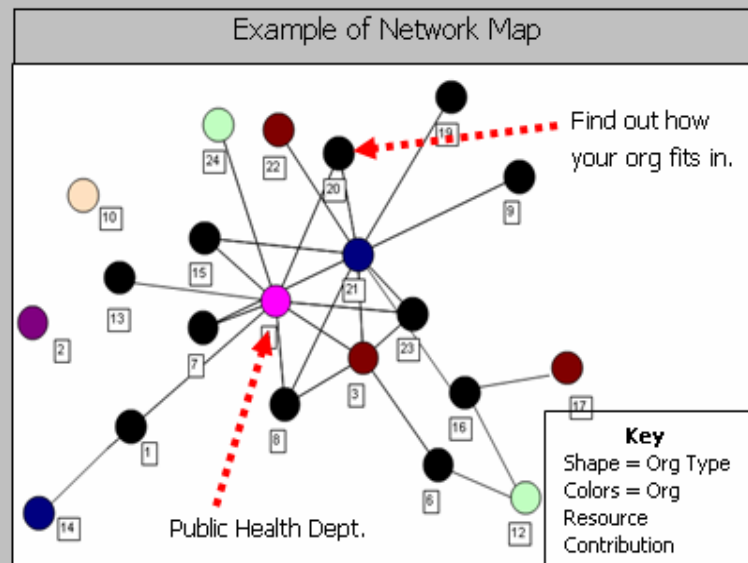
The survey should take # minutes to complete.

**\*\*While your organization will always appear on network maps, we need your responses to understand your specific relationships with other organizations/persons.\*\***

**START SURVEY**

Return Email: FILL IN

**\*\*Troubleshooting\*\*:** If you are not able to open the Microsoft Excel file or click on "START SURVEY", your security level may be set to "high" or "very high". To change it, simply go to the "Tools" menu in Excel and select "Macro" and then "Security". Select the "Security Level" tab and



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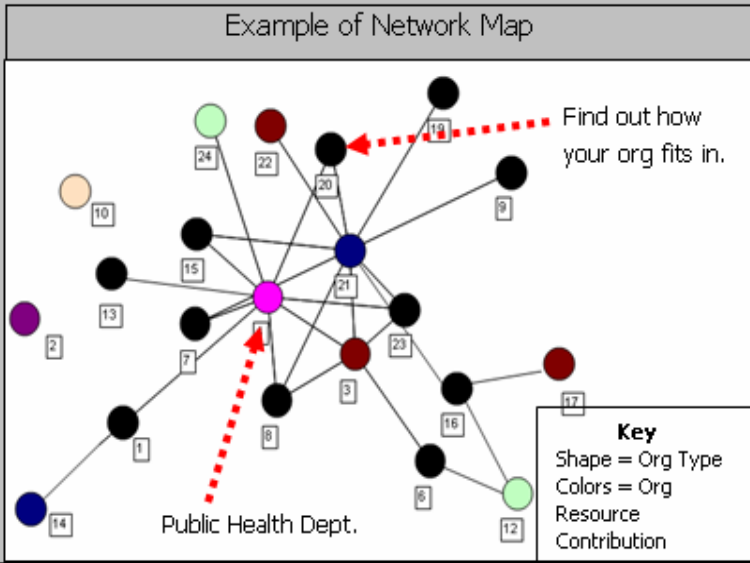
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## Instructions



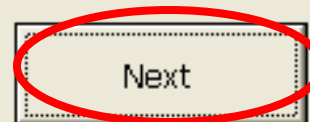
To begin, you will be asked to answer a few questions about your own organization.

You will then be asked to answer questions about partners who you work with in regards to issues related to the goals of the collaborative. The name of each organization will appear in the top left corner of the screen. A progress indicator on the top right hand corner of the screen will let you know how close you are to the end. Please answer all questions as they relate to your work as it relates to the collaborative.

Answer all questions from the perspective of your organization, rather than yourself as an individual. Feel free to check with others in your organization for more information.

Although this process may feel repetitive, we ask that you give thoughtful responses to the way your organization interacts with each organization/person. Each response you give is important to overall understanding of how we work together as a group.

At any time, you can save the file to your hard drive and continue the survey later by opening the file. When complete, you can re-save and return it by email.



## Organizational Information



Please answer the following questions about your organization.

1. Please select your organization from the list:

2. Please type your job title:

3. How long have you been in this position (in months)?

4. Please indicate what your organization contributes to the collaborative (choose as many as apply).

<input type="checkbox"/>	Funding
<input type="checkbox"/>	In-Kind Resources
<input type="checkbox"/>	Paid Staff
<input type="checkbox"/>	Volunteer Staff
<input type="checkbox"/>	Data Sets
<input type="checkbox"/>	Info/Feedback

5. Which of the above describe your organization's most important contribution?

6. Please indicate which of the following outcomes have been achieved due to the work of the collaborative (choose as many as apply).

<input type="checkbox"/>	Education
<input type="checkbox"/>	Increased Services
<input type="checkbox"/>	Reduction of Health Disparities
<input type="checkbox"/>	Increased Resource Sharing
<input type="checkbox"/>	Increased Knowledge Sharing

7. Which of the above describes the most successful outcome of the collaborative?

Next

## Select Organizations



Please check the box(es) of the organizations/partners that you recognize from the list below. Then click the 'Add' button. You will only be asked questions of the organizations/partners that you select.

All organizations in your collaborative:

- Salvation Army
- Public Health
- Catholic Charities
- Dept of Housing
- Homeless Shelter
- Job Training Program
- Drug/Alcohol Clinic
- Law Enforcement
- Politician
- Business Owner

Add ->

Delete <-

Organizations that you recognize:

Homeless Shelter  
Drug/Alcohol Clinic  
Business Owner

Select/Deselect All

Next

Delete All

## Organization 1

Progress Indicator:

Please answer the following questions  
for the organization/person listed here:

1. How frequently do you work with this organization on issues related to the collaborative's goals?

- Never
- Once a year or less
- Every few months
- Every few weeks
- Every week

2. To what extent do you work collaboratively with this organizations on issues unrelated to the collaborative?

- Never
- Once a year or less
- Every few months
- Every few weeks
- Every week

**Value**

3. How valuable is this organization/person to achieving the overall mission of the collaborative in terms of:

[More Info About Terms Used](#)**(a) Power/Influence**

- Not at all
- A small amount
- A fair amount
- A great deal

**(b) Level of Involvement**

- Not at all
- A small amount
- A fair amount
- A great deal

**(c) Resource Contribution**

- Not at all
- A small amount
- A fair amount
- A great deal

**Trust**

4. To what extent is this organization/person:

[More Info About Terms Used](#)**(a) Reliable**

- Not at all
- A small amount
- A fair amount
- A great deal

**(b) In Support of Mission**

- Not at all
- A small amount
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**(c) Open to Discussion**

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Please answer the following questions for the organization/person listed here:

1. Do you know this organization/person?

**Frequency of Contact**

2. How frequently does your organization work with this organization on topics related to the collaborative's goals through e-mail, via phone, or in person?

**Value**

3. How valuable is this organization/person to achieving the overall mission of the New Jersey Public Health System in terms of:

[More Info About Terms Used](#)

**Trust**

4. To what extent is this organization/person:

[More Info About Terms Used](#)

Value is defined along three dimensions.

a) Power: the organization/person holds a prominent position in the community by being powerful, having influence, success as a change agent, and showing leadership.

b) Level of Involvement: the organization/person is strongly committed and active in the collaborative and gets things done.

c) Resources: the organization/person brings resources to the collaborative like funding, information, or other resources.

Each of the three characteristics are considered equally important (no one is necessarily more valuable than another), however the more any one organization/person has of each improves the way the organization/person is valued overall.

OK

Not at all

A small amount

A fair amount

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### Trust

4. To what extent is this organization/person:

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## Help

Trust is considered crucial to the success of collaboration. Although difficult to operationalize, trust is measured along three dimensions.

a) **Reliable:** this organization/person is reliable in terms of following through on commitments.

b) **In Support of Mission:** this organization/person shares a common vision of the end goal of what the collaborative should accomplish.

c) **Open to Discussion:** this organization/person is willing to engage in frank, open, and civil discussion (especially when disagreement exists). The organization/person is willing to consider a variety of viewpoints and talk together (rather than at each other). Your organization is able to communicate with this organization in an open, trusting manner.

OK

Not at all  
 A small amount  
 A fair amount  
 A great deal

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Save this file and e-mail it later

E-mail it now

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Save this file and e-mail it later

E-mail it now

This message has not been sent.

To... email@email.edu

Cc...

Bcc...

Subject: survey.xls

Attach... catholic charities.xls (317 KB) Attachment Options...

[Empty message body area]

# **PARTNER**

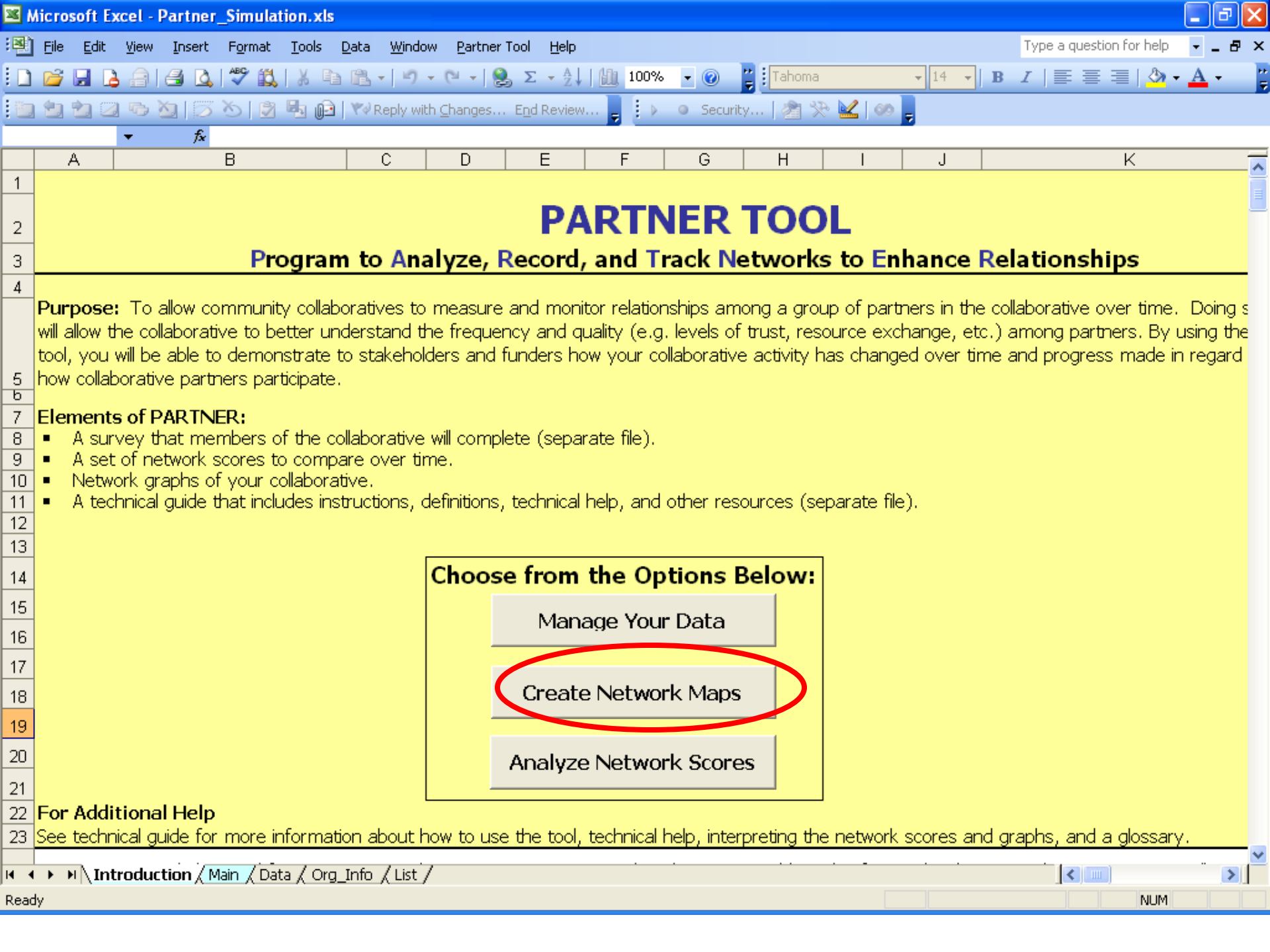
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Analysis Tool

# How It Works

Members of the Collaborative  
Answer Surveys





# PARTNER TOOL

Program to Analyze, Record, and Track Networks to Enhance Relationships

**Purpose:** To allow community collaboratives to measure and monitor relationships among a group of partners in the collaborative over time. Doing so will allow the collaborative to better understand the frequency and quality (e.g. levels of trust, resource exchange, etc.) among partners. By using the tool, you will be able to demonstrate to stakeholders and funders how your collaborative activity has changed over time and progress made in regard to how collaborative partners participate.

## Elements of PARTNER:

- A survey that members of the collaborative will complete (separate file).
- A set of network scores to compare over time.
- Network graphs of your collaborative.
- A technical guide that includes instructions, definitions, technical help, and other resources (separate file).

### Choose from the Options Below:

Manage Your Data

Create Network Maps

Analyze Network Scores

## For Additional Help

See technical guide for more information about how to use the tool, technical help, interpreting the network scores and graphs, and a glossary.

**Network Maps**

General | Frequency | Value | Resources

**GENERAL OPTIONS**

Size of network map

Min  Max

Choose what groups to show:

- Nonprofit Org
- Public Org
- Private Org
- Unaffiliated

Select All

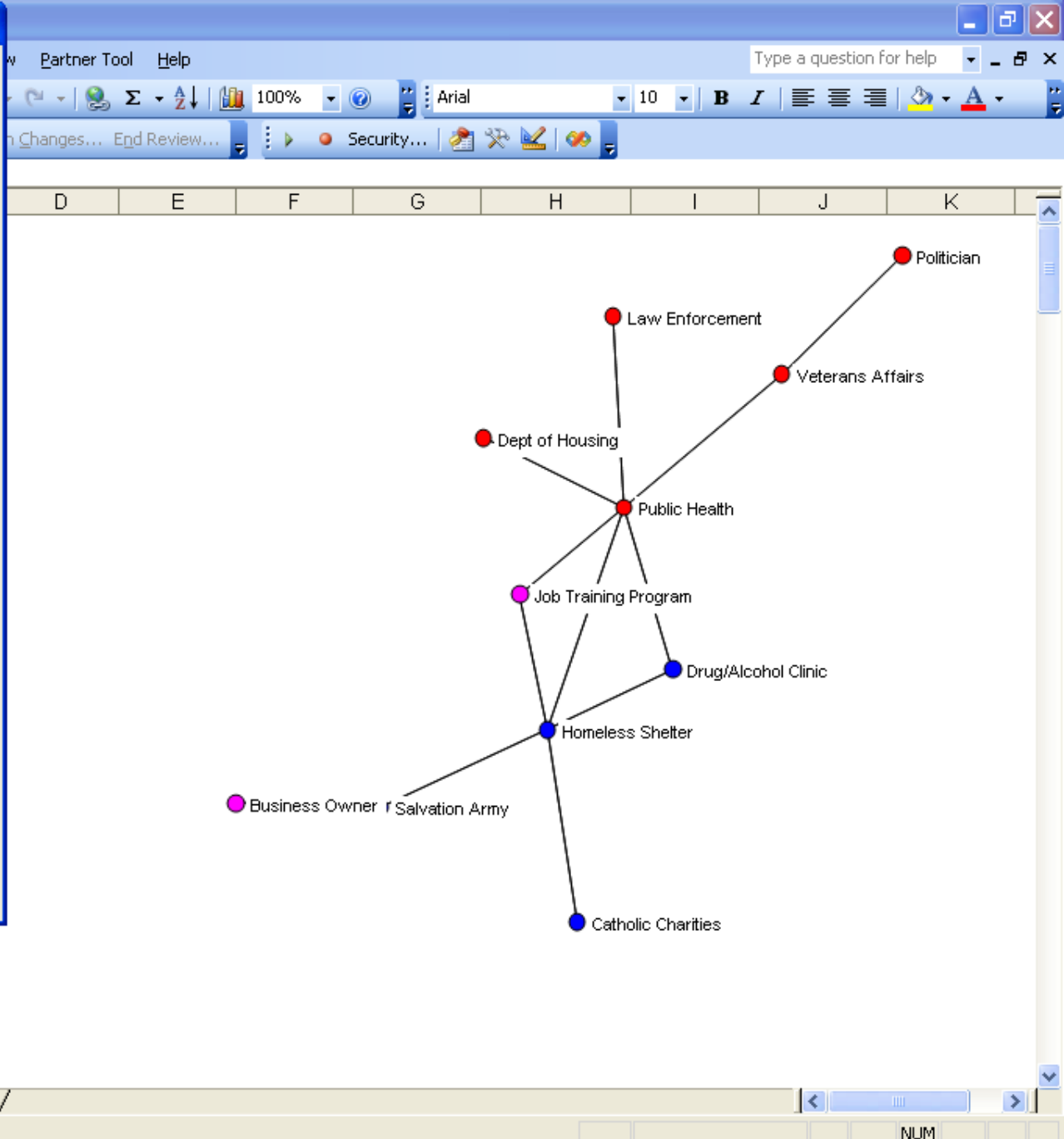
Show group affiliation with:

- Different Shapes
- Different Colors
- Don't Show

Show Names of Organizatio

Update Network Map

**Display Network** Erase



28

29

30

31

32

33

**Group Key**

- Nonprofit Org
- Public Org

Introduction | **Main** | Data | Org\_Info | List

Ready

**Network Maps**

General | Frequency | **Value** | Resources

**DISPLAY STRATEGIC VALUE OF ORGANIZATIONS**

None

Overall Value

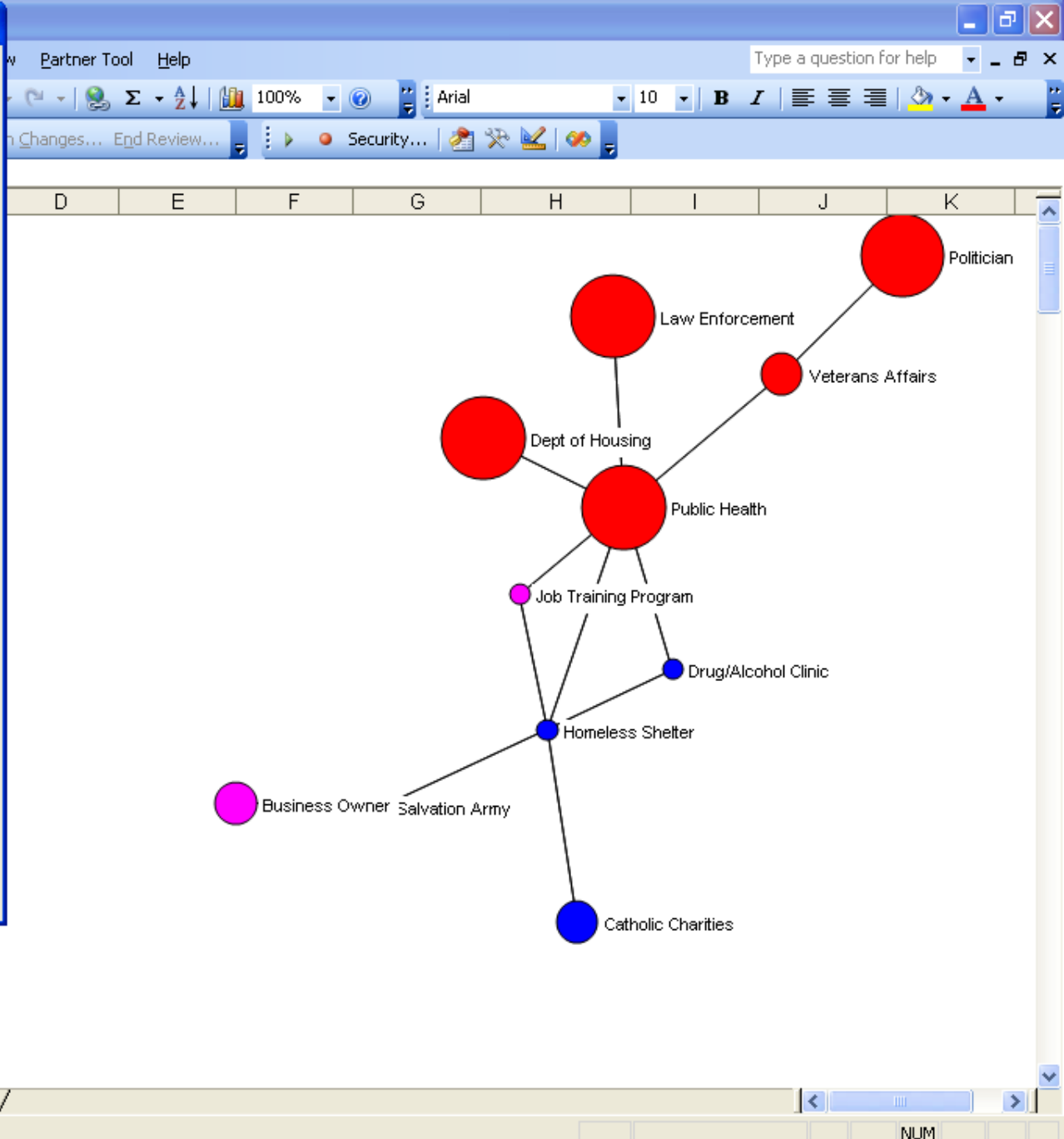
**Power/Influence**

Level of Involvement

Level of Resource Contribution

**Update Network Map**

Display Network Erase



28

29

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Nonprofit Org

Public Org

Introduction | Main | Data | Org\_Info | List

Ready

NUM

**Network Maps**

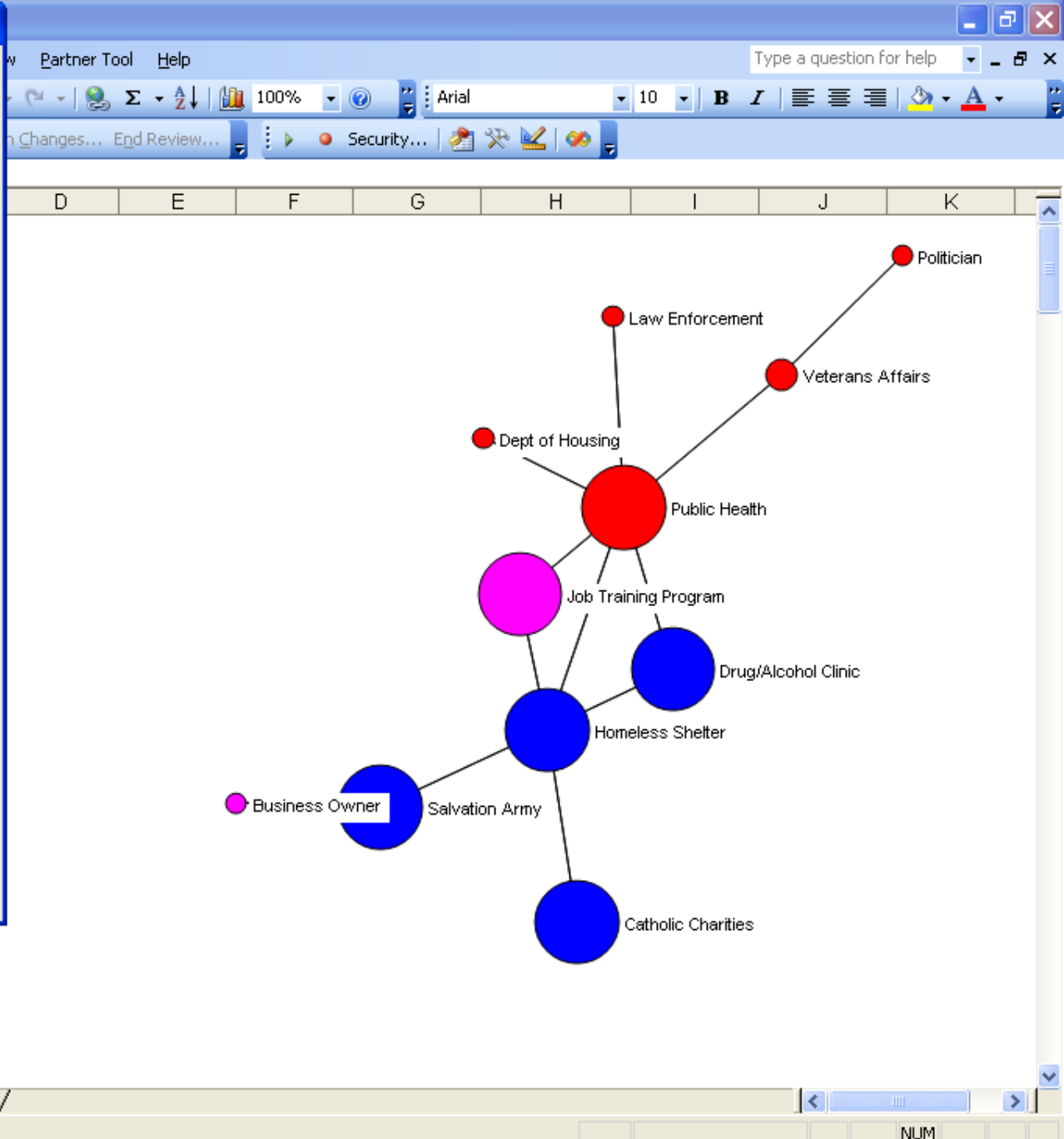
General | **Frequency** | **Value** | Resources

**DISPLAY STRATEGIC VALUE OF ORGANIZATIONS**

None  
 Overall Value  
 Power/Influence  
 **Level of Involvement**  
 Level of Resource Contribution

**Update Network Map**

Display Network      Erase



28

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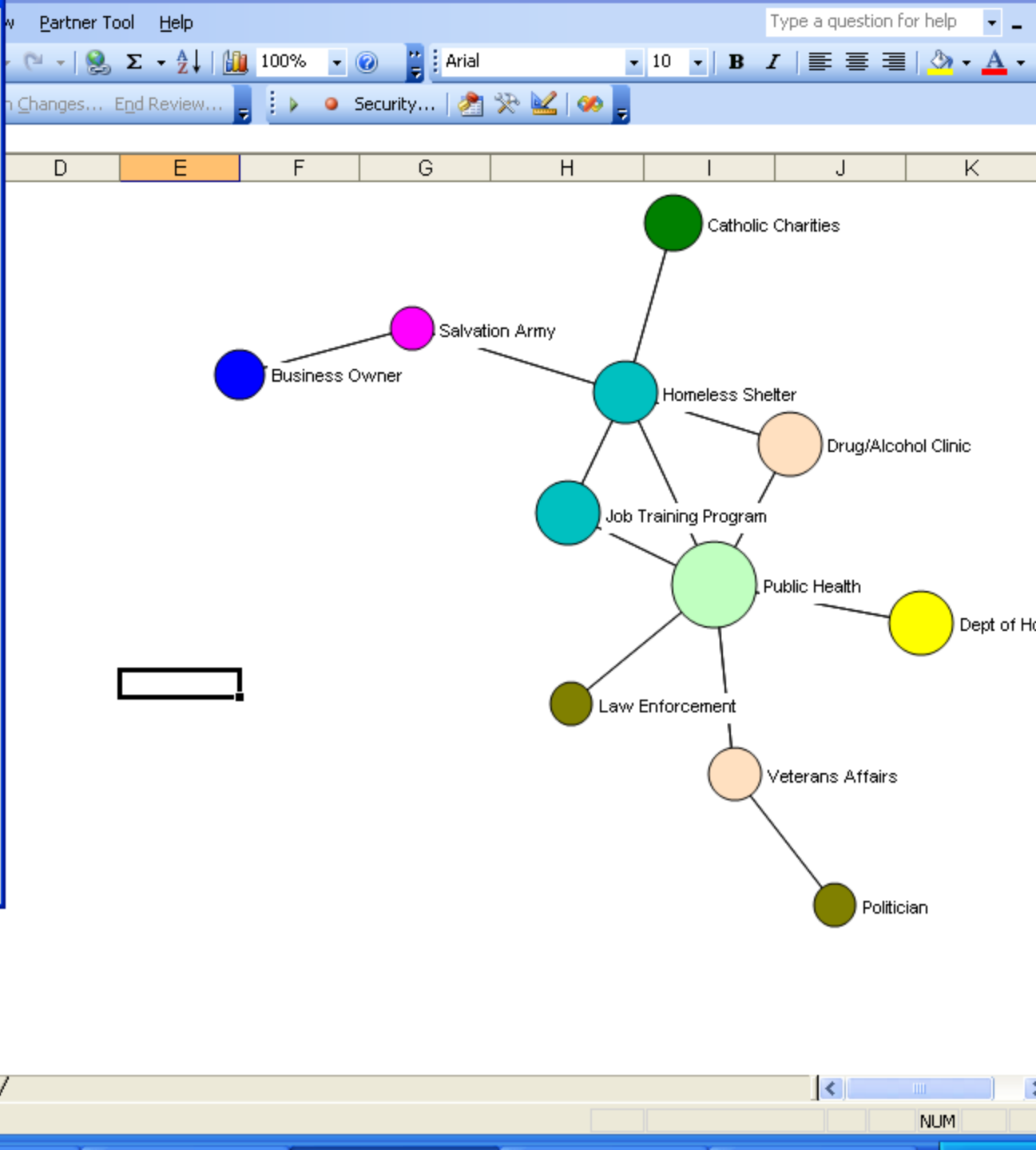
Introduction | **Main** | Data | Org\_Info | List

Ready

General | Frequency | Value | Resources

### DISPLAY RESOURCES (Choose one)

- None
- Each Organization's Most Important Contribution
- Funding
- In-Kind Resources
- Paid Staff
- Volunteer Staff
- Data Sets
- Info/Feedback
- Specific Health Expertise
- Expertise Other Than in Health
- Community Connections
- Decision-Making
- Facilitation
- Advocacy
- Leadership



### Network Maps

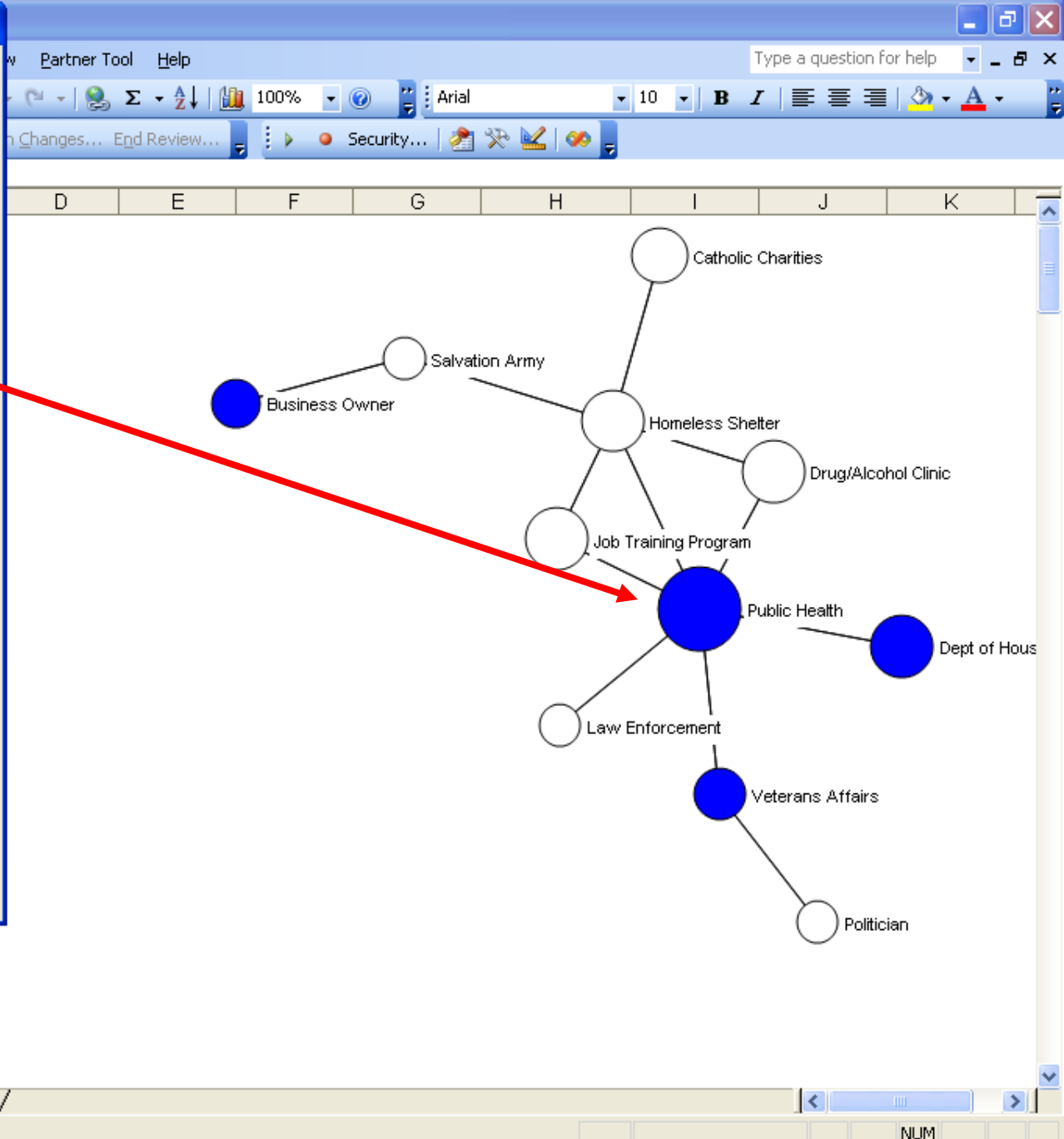
General | Frequency | Value | Resources

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- Specific Health Expertise
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Update Network Map

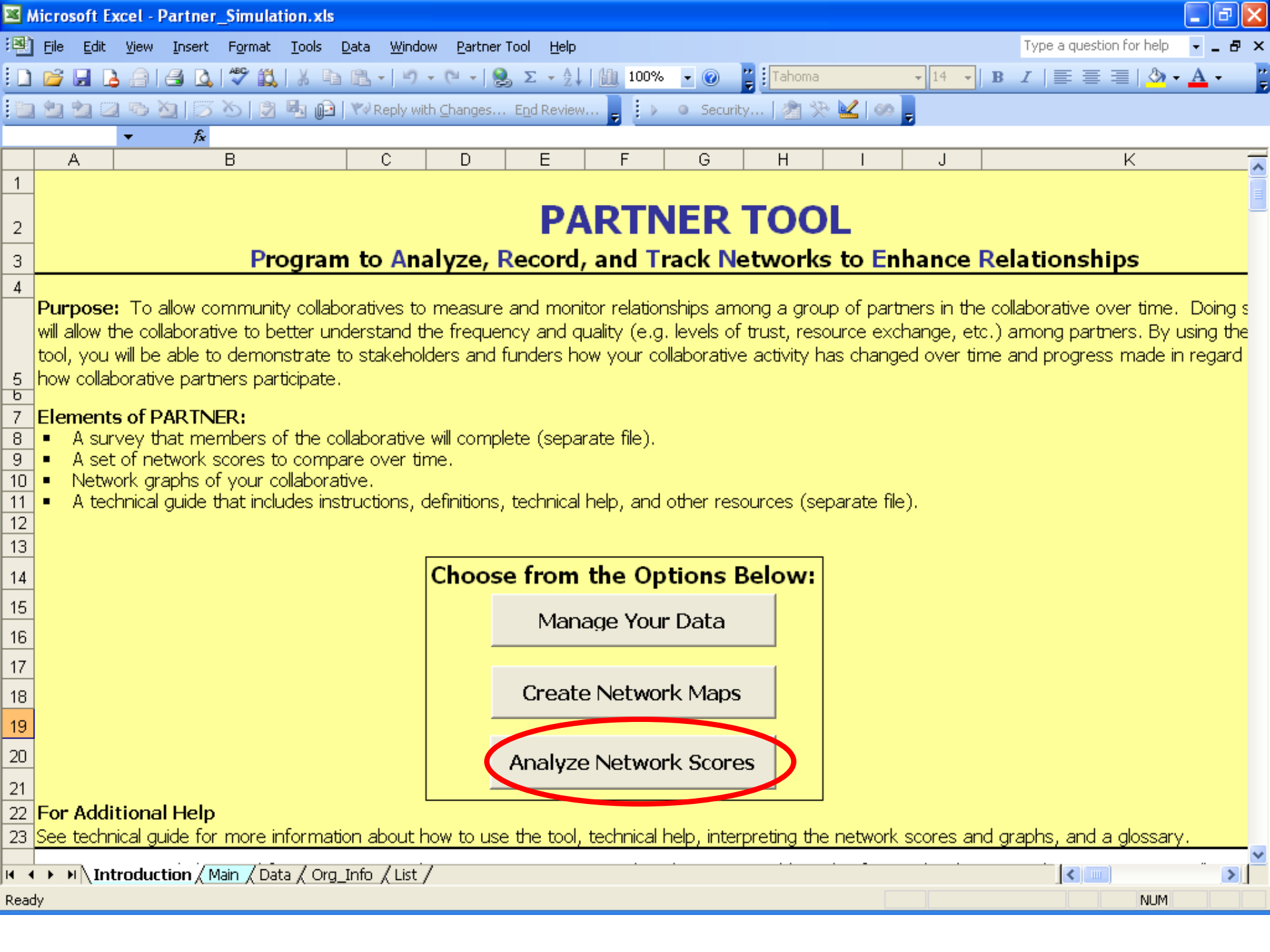
Display Network Erase



28  
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32  
33

Introduction | Main | Data | Org\_Info | List

Ready



File Edit View Insert Format Tools Data Window Partner tool Help

Type a question for help

Tahoma 10 B I

Security...

A1

Data Management

List of Organizations

Network Maps...

Scores

**Network Scores**

Density	21.80%
Degree Centralization	46.70%
Trust	50.30%

Density: Percentage of ties present in the network in relation to the total number of possible ties in the entire network.

Degree Centralization: The lower the centralization score, the more similar the members are in terms of their number of connections to others (e.g. more decentralized).

Trust: The percentage of how much members trust one another. A 100% occurs when all members t

**Individual Scores**

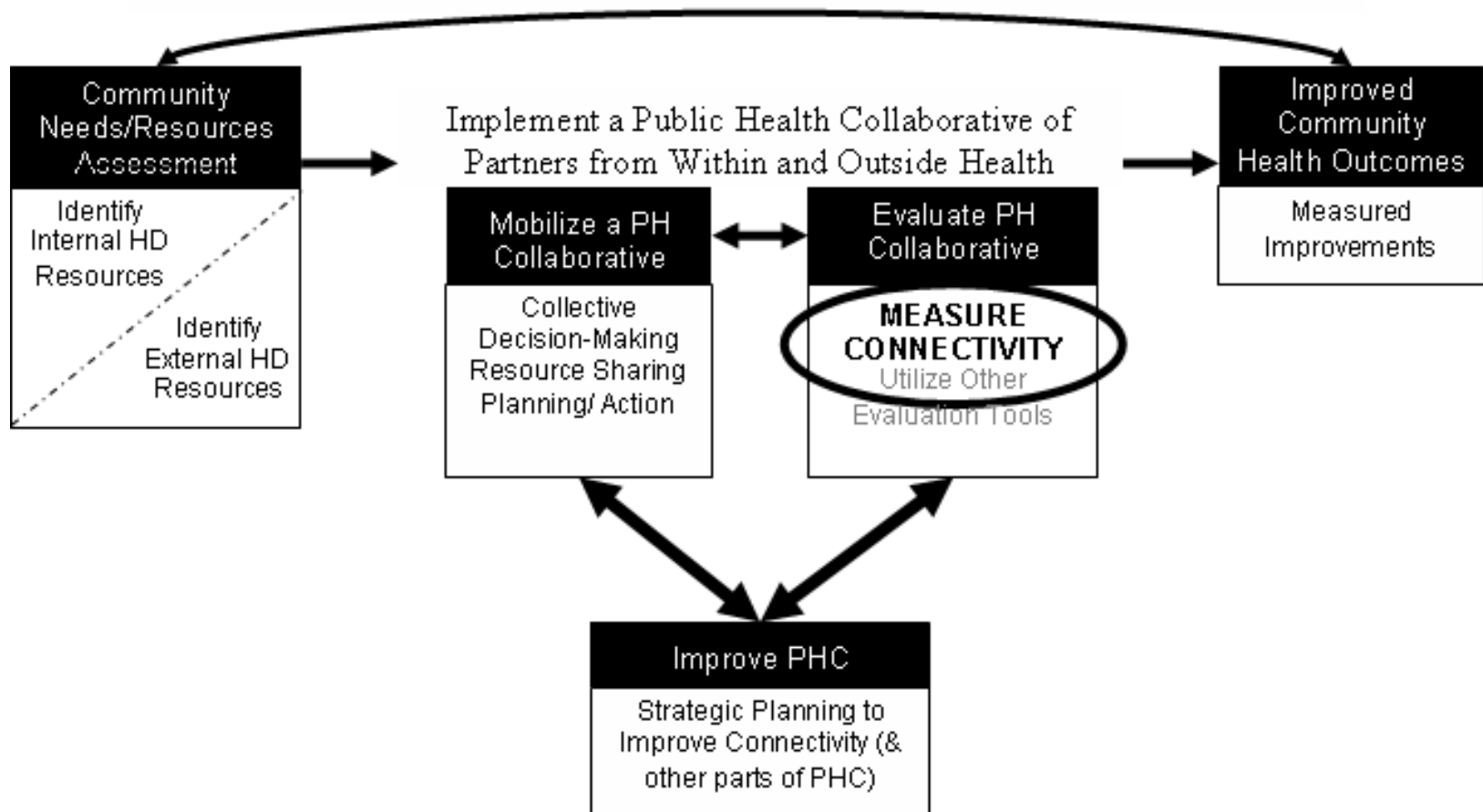
	CENTRALITY/CONNECTIVITY/REDUNDANCY				VALUE (1-4)				Total Trust (1-4)
	Degree Centrality (max 10)	Non-Redundant Ties	Closeness Centrality	Relative Connectivity	Total Value (1-4)	Influence/Power (1-4)	Level of Involvement (1-4)	Resources (1-4)	
Salvation Army	2	2	0.43	17%	2	1	4	1	3
Veterans Affairs	2	2	0.45	35%	2.5	2	1.5	4	1
Public Health	6	5.23	0.67	100%	4	4	4	4	4
Catholic Charities	1	1	0.4	17%	2.67	2	4	2	3.67
Dept of Housing	1	1	0.42	0%	3	4	1	4	1
Homeless Shelter	5	4.23	0.63	86%	2.93	1	4	3.8	3.6
Job Training Program	2	1	0.5	46%	3	1	4	4	4
Drug/Alcohol Clinic	2	1	0.5	17%	3	1	4	4	4
Law Enforcement	1	1	0.42	47%	2	4	1	1	1
Politician	1	1	0.32	15%	2	4	1	1	1
Business Owner	1	1	0.31	12%	2.33	2	1	4	1.33

Degree Centrality: # of connections to other members of the network

Non-redundant ties: shows the number of non-redundant ties in relation to the other members that each organization is connected too.

# What Would I Do With All This Information?

## Engage in Strategic Management

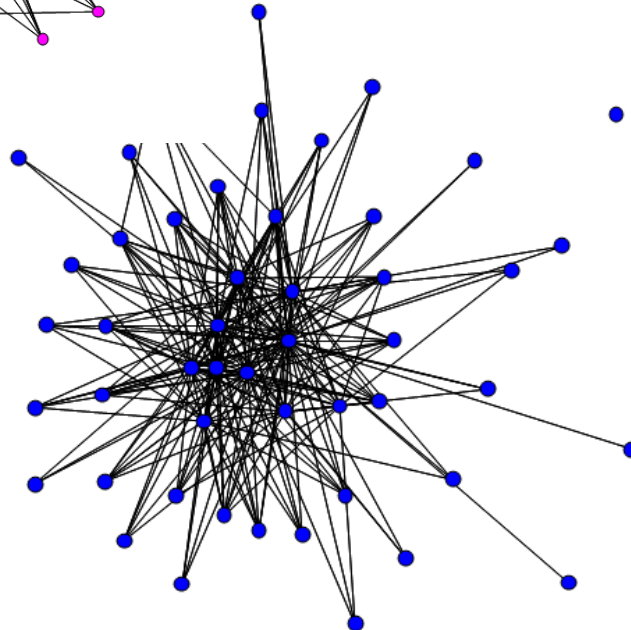
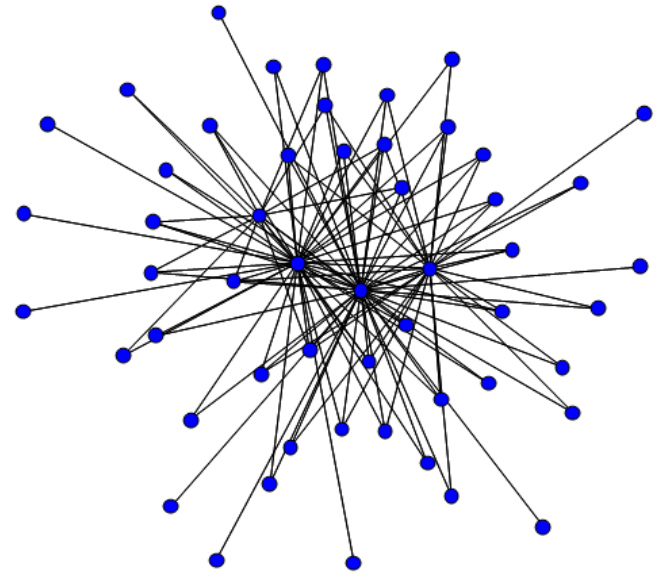
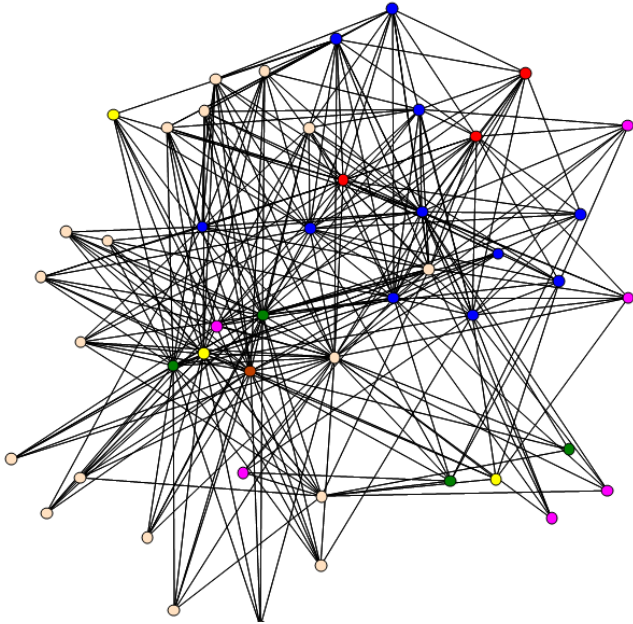


# 4 Steps in Strategic Network Management

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- Step 1: Take Note of Potential Partners
- Step 2: Assess the Characteristics of Relationships
- Step 3: Consider the Connectivity Among Members of the Network
- Step 4: Match Evaluation to Collaborative's Goals

# 3 MAPP PH Collaboratives: Operationalizing Measures



Social Network  
Analysis: Measure of  
the relationships  
between actors rather  
than a measure of the  
actors themselves

# Step 1

---

- Step 1: Take Note of Potential Partners
  - Knowing the Network: Are the right connections in place? Are any key connections missing? Who are playing leadership roles in the community? Who is not, but should be?
  - List of Members; Type of Org; Centrality of Members
- Gather information, describe & discuss structure and quality of network

# Know the Network: Members Descriptions

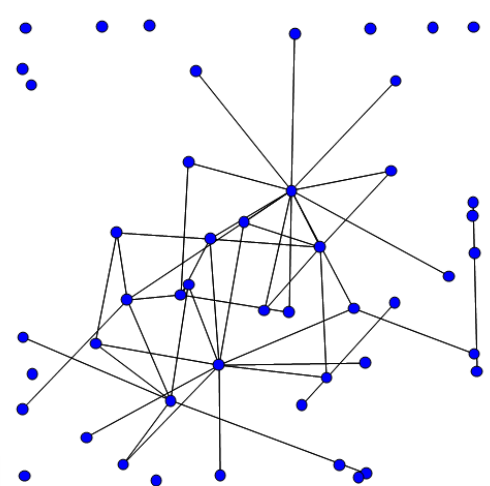
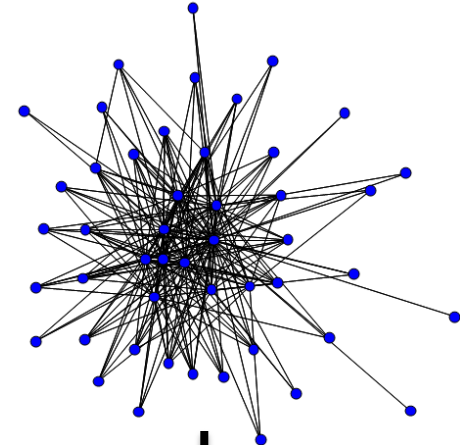
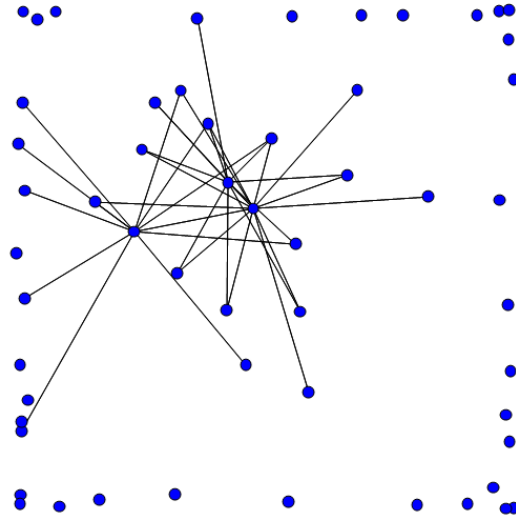
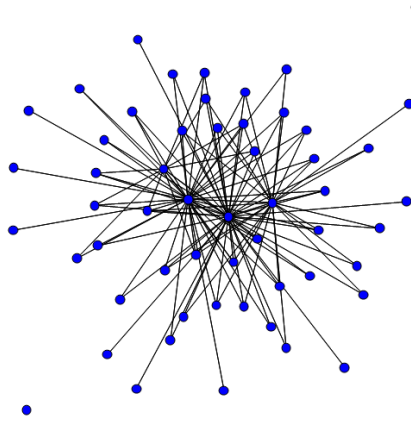
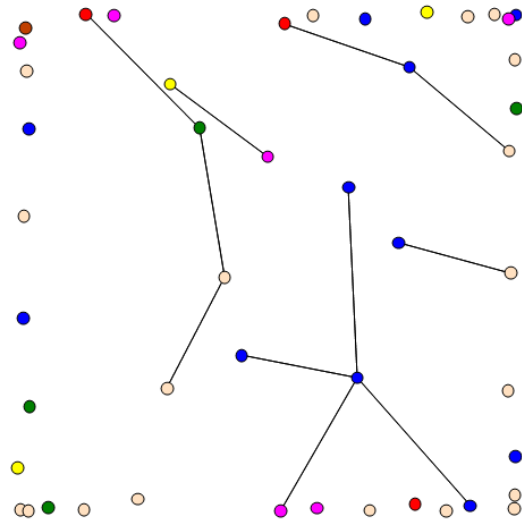
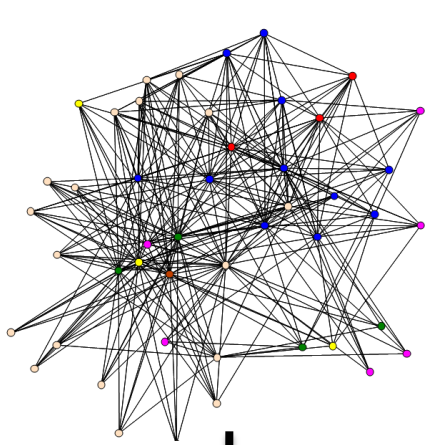
<b>Collaborative/ Mission</b>	<b>Maturation of Collaborative</b>	<b># of Members (Response Rate)</b>	<b>Types of Partners</b>	<b>Central Players (of top 10)</b>	<b>Role of HD</b>
#1 - Multiple Workgroups to Improve Community's Health	Most Mature	53 (85%)	20% NP 27% Bus 51% Govt	6 Govt (60%) 3 NP (30%) 1 Bus (10%)	Most Central
#2 – Collaborative to Increase Flu Vaccination	Least Mature	55 (90%)	36% NP 18% Bus 45% Govt	7 Govt (70%) 3 Bus (30%)	Most Central
#3 – Multiple Workgroups to Improve Community's Health		47 (75%)	23% NP 30% Bus 47% Govt	6 Govt (60%) 4 Bus (40%)	Most Central

# Step 2 & 3

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- **Step 2: Assess the Characteristics of Relationships**
  - Dimensions of Trust
  - Strategic Value of Organization
  - Resource Exchange
  - Governance
  - Level of Interaction
- **Step 3: Consider the Connectivity Among Members of the Network**
  - Does a structure exist?
  - What is the role of the health department?
  - What is the level of connectivity?
  - Is the collaborative centralized/decentralized?
  - Who are the key players?
  - Does it meet the goals of the collaborative?

# Frequency of Interaction



# Whole Network Scores

## Network Scores – Collaborative #1

Density	27.20%
Degree Centralization	44.30%
Trust	83.10%

Health Depts. Are 4 of  
the Top 7 Most Central  
Members

## Network Scores – Collaboration #2

Density	8.00%
Degree Centralization	74.30%
Trust	70.00%

Local Health  
Department is Most  
Central Member

## Network Scores – Collaboration #3

Density	20.20%
Degree Centralization	83.30%
Trust	71.30%

Local Health  
Department is Most  
Central Member

# Relative Connectivity

- Utilizes qualitative + structural nature of ties

- $Connectivity(j) = \sum_{i=1, i \neq j}^n \delta_{ji} \cdot V_i \cdot T_{ij}$

– Where:

- $V_i$  – value score for organization (node)  $i$ ;
- $T_{ij}$  – trust that organization (node)  $i$  has in organization  $j$ ;
- $\delta_{ij}$  – binary variable (0 or 1) for connection between  $i$  and  $j$ .

– Then, to find the relative connectivity score we just divide the above connectivity score by the maximum score among all organizations in the network:

– Relative connectivity ( $j$ ) =

$$\frac{Connectivity(j)}{\text{Max}[Connectivity(i)]_{i=1,..n}}$$

# Relative Connectivity

- A measure of the “benefit” each member of the collaborative gets in return for their participation
- # of “others” that *trust you* and are *considered valuable* to the collaborative
  - So, as more people who are valuable trust you, your score goes up.

Degree Centrality (max 46)	Relative Connectivity	Total Value (1-4)	Total Trust (1-4)
32	100%	2.33	4
28	88%	3.3	3.85
26	99%	3.95	3.97
25	93%	3.5	3.64
25	69%	3.17	3.46
23	87%	3.46	3.67
23	64%	2.87	3.2
22	90%	3.5	3.72
22	65%	3.37	3.4
20	65%	4	4
19	68%	3.17	3.4
17	79%	3.71	3.89
15	59%	3.03	3.36
15	56%	3.52	3.79
14	56%	2.87	3.36
14	39%	3.33	3.67
13	51%	3.33	3.58
13	40%	1.67	2.33
12	38%	2.83	3
12	55%	3.53	3.8
12	37%	n/a	n/a
11	33%	3.33	3.5
11	33%	4	4

Please answer the following questions for the organization/person listed here:

1. Do you know this organization/person?

**Frequency of Contact**

2. How frequently does your organization work with this organization on topics related to the collaborative's goals through e-mail, via phone, or in person?

**Value**

3. How valuable is this organization/person to achieving the overall mission of the New Jersey Public Health System in terms of:

[More Info About Terms Used](#)

**Trust**

4. To what extent is this organization/person:

[More Info About Terms Used](#)

Value is defined along three dimensions.

a) Power: the organization/person holds a prominent position in the community by being powerful, having influence, success as a change agent, and showing leadership.

b) Level of Involvement: the organization/person is strongly committed and active in the collaborative and gets things done.

c) Resources: the organization/person brings resources to the collaborative like funding, information, or other resources.

Each of the three characteristics are considered equally important (no one is necessarily more valuable than another), however the more any one organization/person has of each improves the way the organization/person is valued overall.

OK

Not at all

A small amount

A fair amount

A great deal

Not at all

A small amount

A fair amount

A great deal

Not at all

A small amount

A fair amount

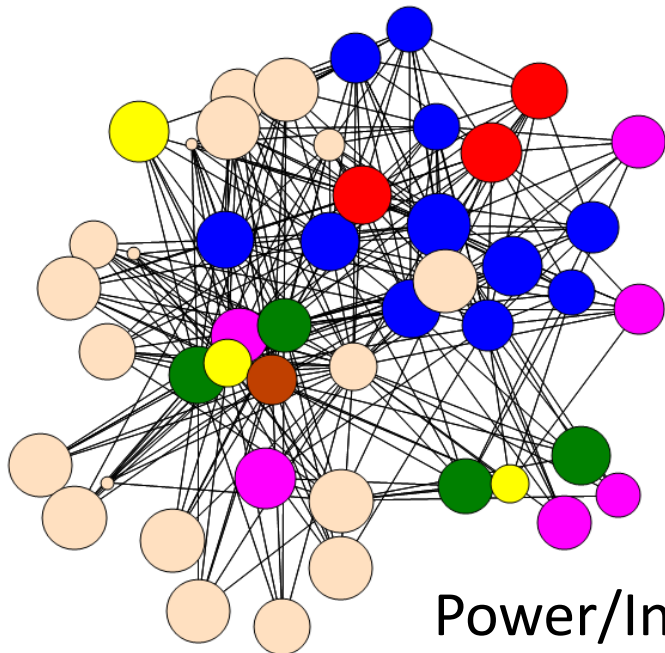
A great deal

Previous

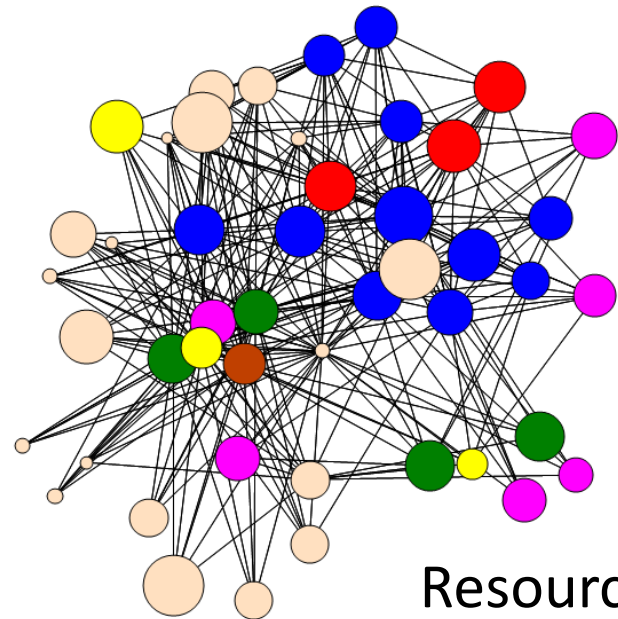
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# Value of Partner

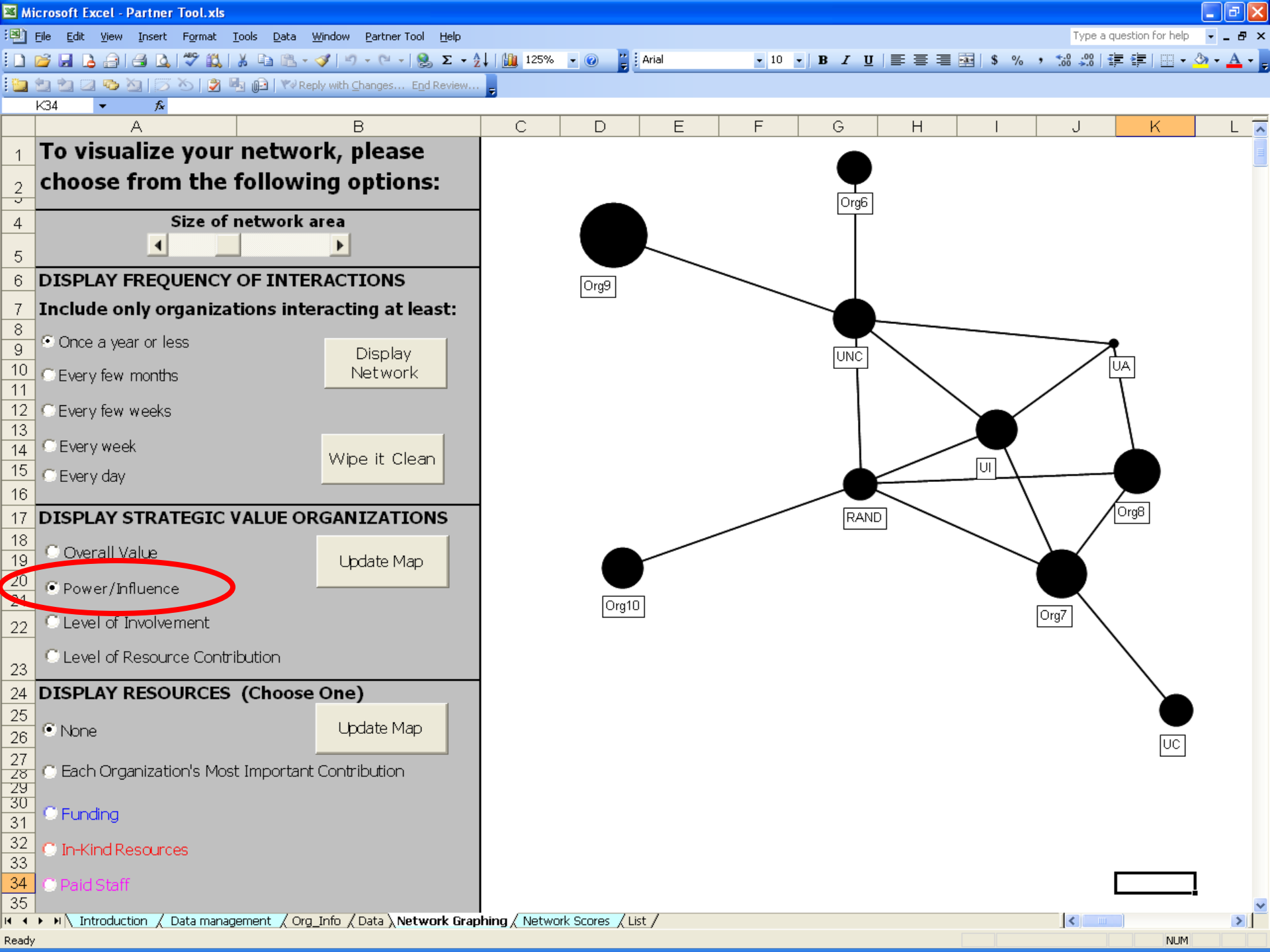
- Power/Influence
- Level of Involvement: strongly committed, gets things done
- Resources: brought to collaborative (i.e. funding, information, etc.)

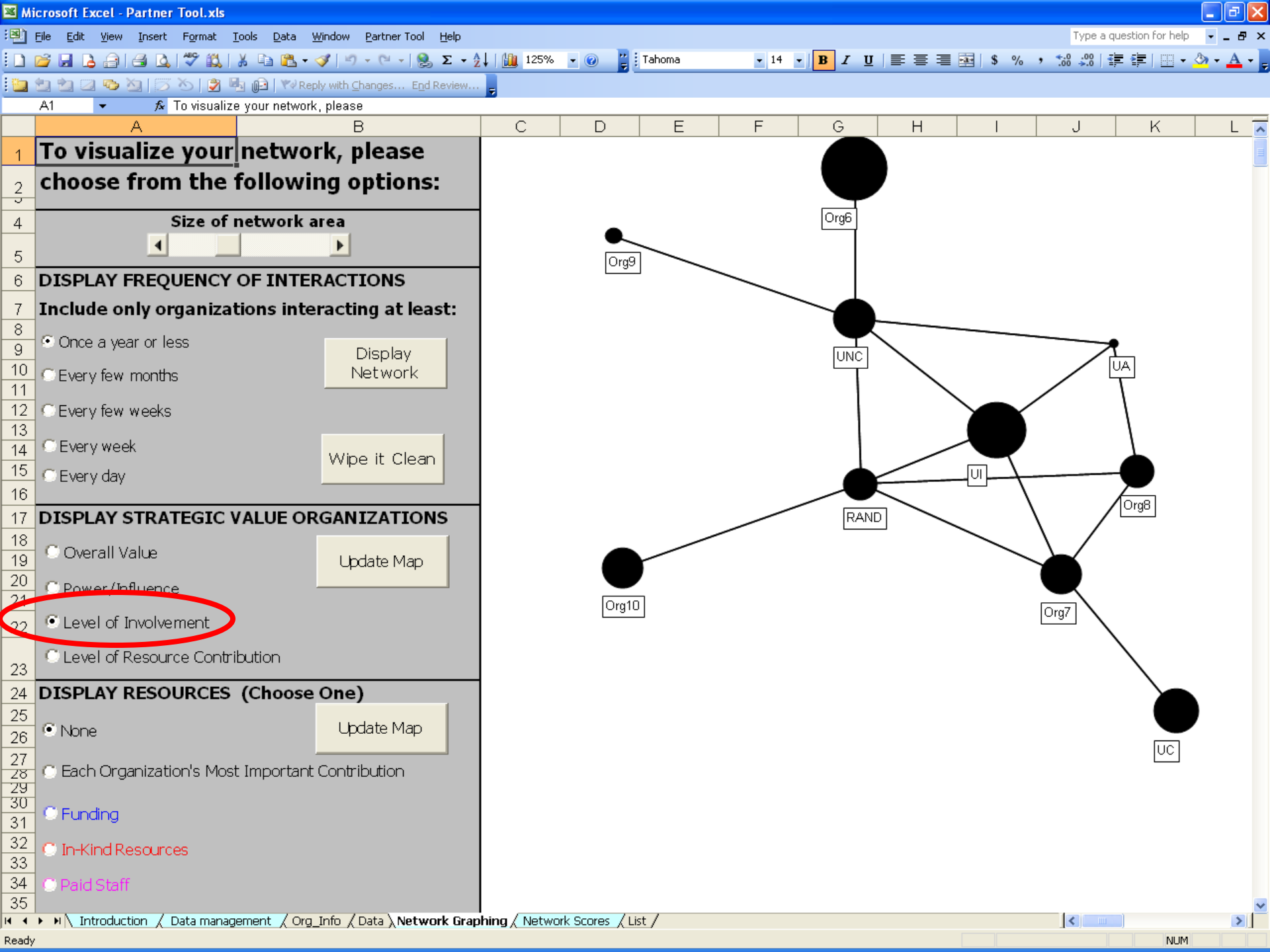


Power/Influence ]



Resource  
Contribution





## Survey

Please answer the following questions for the organization/person listed here:

1. Do you know this organization/person?

### Frequency of Contact

2. How frequently does your organization work with this organization on topics related to the collaborative's goals through e-mail, via phone, or in person?

### Value

3. How valuable is this organization/person to achieving the overall mission of the New Jersey Public Health System in terms of:

[More Info About Terms Used](#)

### Trust

4. To what extent is this organization/person:

[More Info About Terms Used](#)

## Help

Trust is considered crucial to the success of collaboration. Although difficult to operationalize, trust is measured along three dimensions.

a) **Reliable:** this organization/person is reliable in terms of following through on commitments.

b) **In Support of Mission:** this organization/person shares a common vision of the end goal of what the collaborative should accomplish.

c) **Open to Discussion:** this organization/person is willing to engage in frank, open, and civil discussion (especially when disagreement exists). The organization/person is willing to consider a variety of viewpoints and talk together (rather than at each other). Your organization is able to communicate with this organization in an open, trusting manner.

OK

Not at all  
 A small amount  
 A fair amount  
 A great deal

Not at all  
 A small amount  
 A fair amount  
 A great deal

Not at all  
 A small amount  
 A fair amount  
 A great deal

Previous

Next

# Trust

- Reliable: follows through on commitments
- In Support of Mission: common vision of end goal
- Open to Discussion: open, civil discussion, talk together, consider a variety of viewpoints

## Network Scores – Collaborative #1

Density	27.20%
Degree Centralization	44.30%
Trust	83.10%

## Network Scores – Collaborative #2

Density	8.00%
Degree Centralization	74.30%
Trust	70.00%

## Network Scores – Collaborative #3

Density	20.20%
Degree Centralization	83.30%
Trust	71.30%

# Conclusions

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- Maturity of collaborative may impact outcomes
  - Centralization (less centralized over time)
  - Frequency of Interaction
- High levels of trust, mission congruence, resource contribution, and transparency
- Centrality and structural equivalence are not related to these characteristics
  - Centralization and frequent interaction is not necessarily related to those characteristics that promote the development of public goods

# Steps Toward Strategic Management

## Step 4

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- Step 4: Match Evaluation to Collaborative's Goals
  - Relationship building, particularly across traditional divides to provide access to innovation and info
  - Relationship budgeting; collaboration failure
  - Facilitate collaboration for mutual benefit: through short term or long term projects (Krebs & Holley)
- What action steps should be taken to improve/meet collaborative's process goals?

# Step 4

## Match Evaluation to Collaborative's Goals

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- Consider levels of trust and value: changes?
- Increase/Decrease network ties
- Leverage existing relationships/resources
- Identify gaps, vulnerable points
- Account for the cost of strategizing and fostering new relationships
- Report progress of collaborative to funders, stakeholders, community members, partners
- **In other words – engage in strategic network management**

# Questions?

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