

# Using Social Network Analysis to understand the impact of systems integration efforts: A Case Study from Thunder Bay

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# Overview

- ▶ Background
- ▶ Methods
- ▶ Results and next steps

# Origin of the project

- ▶ Grew out of partnership with TBay CAB
- ▶ Interest in systems integration efforts
  - ▶ CAB and Community focus on expanding systems integration work
  - ▶ Academic interest in understanding the outcomes of these efforts

Funding provided by Lakehead University



# Why Social Network Analysis?

- ▶ Social Network Analysis (SNA) is a tool for:
  - ▶ assessing relationships among individuals
    - ▶ Some studies conducted SNA among homeless individuals
  - ▶ interorganizational and/or intraorganizational relationships
    - ▶ Some studies assessing integration in certain areas of social and health services
    - ▶ Limited use for homelessness service providers networks\*
      - ▶ Keast in Brisbane, Gold Coast, Townsville and Cairns
      - ▶ Fleury in Montreal through AHCS

Keast, R., Waterhouse, J. M., Brown, K., & Murphy, G. (2008). Closing the gaps and opening doors: The function of an integrated homelessness service system: Place-based networks analysis and case studies.

Fleury, M. J., Grenier, G., Lesage, A., Ma, N., & Ngui, A. N. (2014). Network collaboration of organizations for homeless individuals in the Montreal region. *International journal of integrated care*, 14(1).

# Methods

- ▶ Adaptation of Keast data collection tool
  - ▶ Questions about Shared information, Joint delivery of programs, Funding relationship
  - ▶ Questions about strength of relationship
- ▶ Data collected in 2017
- ▶ Survey distributed by email to the Thunder Bay CAB and open for wider distribution
- ▶ 19 organisations participated and 34 organisations were identified in data analysis

# Finding

## Network Characteristics

	Whole Network	Shared Info	Funding	Joint Delivery
Nodes	34	34	34	34
Edges	427	376	47	102
% of network	100%	88%	11%	24%

## Network Statistics

Statistic	Whole Network	Shared Info	Funding	Joint Delivery
Avg Degree	12.6	11.06	1.38	3
Graph Density	0.38	0.34	0.04	0.09

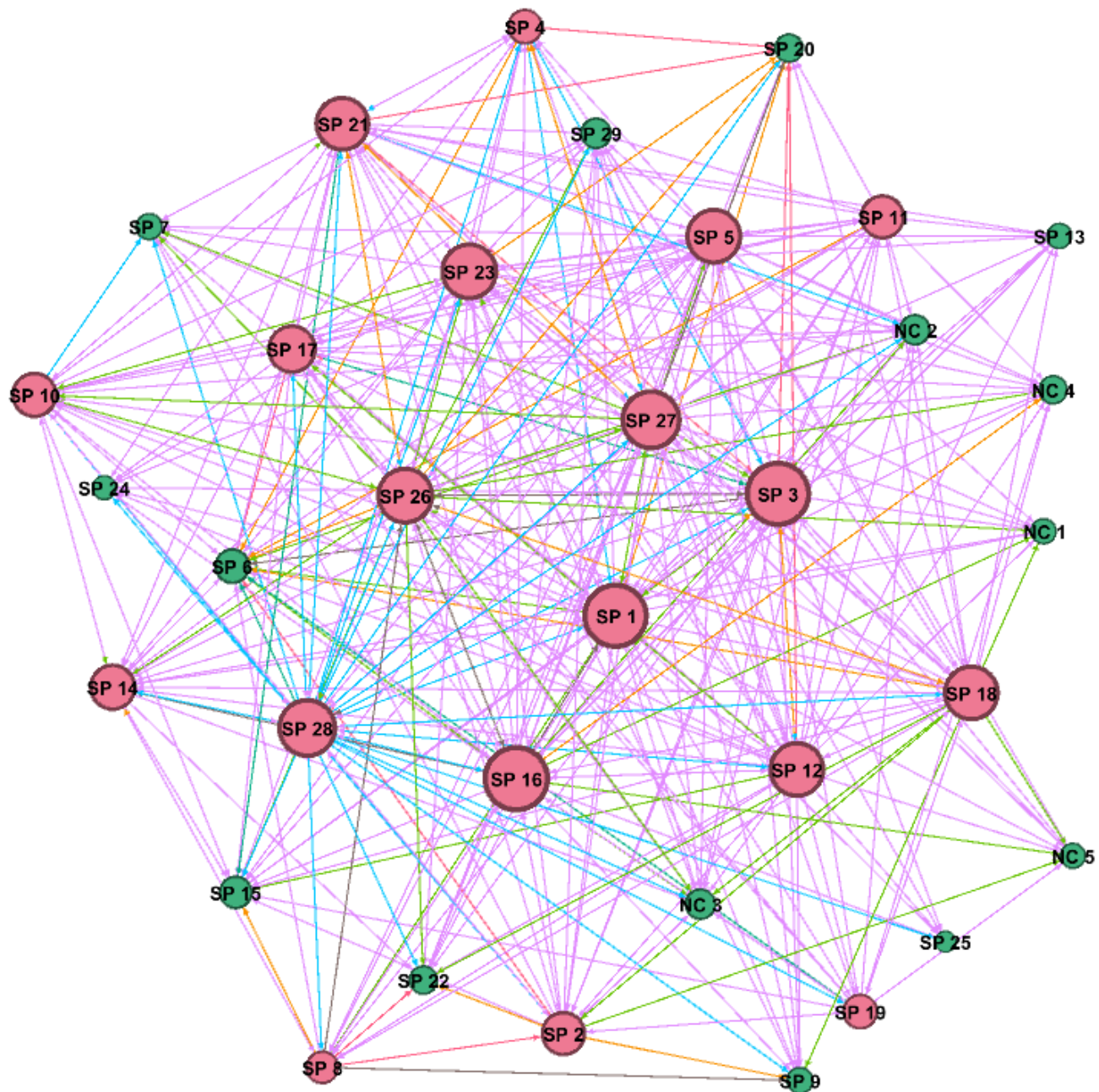
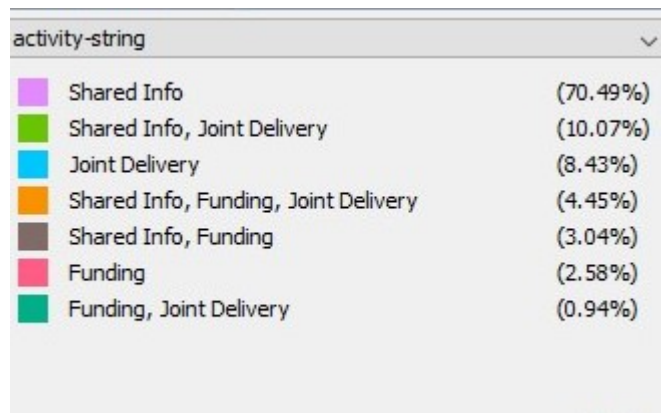
**Average Degree.** The average number of connections across the entire network.

**Graph Density.** Graph density measures how complete a network is. A network with all possible connections has a density of 1.

# Interpreting the SNA Maps

- ▶ Role of organisations within the network
  - ▶ Identifying changing role of organisations within the network
    - ▶ Size of node
      - ▶ changes depending on nature and strength of relationship
      - ▶ Multiple relationships change relative size of nodes
    - ▶ Directionality
      - ▶ Important context for understanding the nature of relationship
- ▶ Complete network is at bottom of each slide for an initial comparison

# The Network

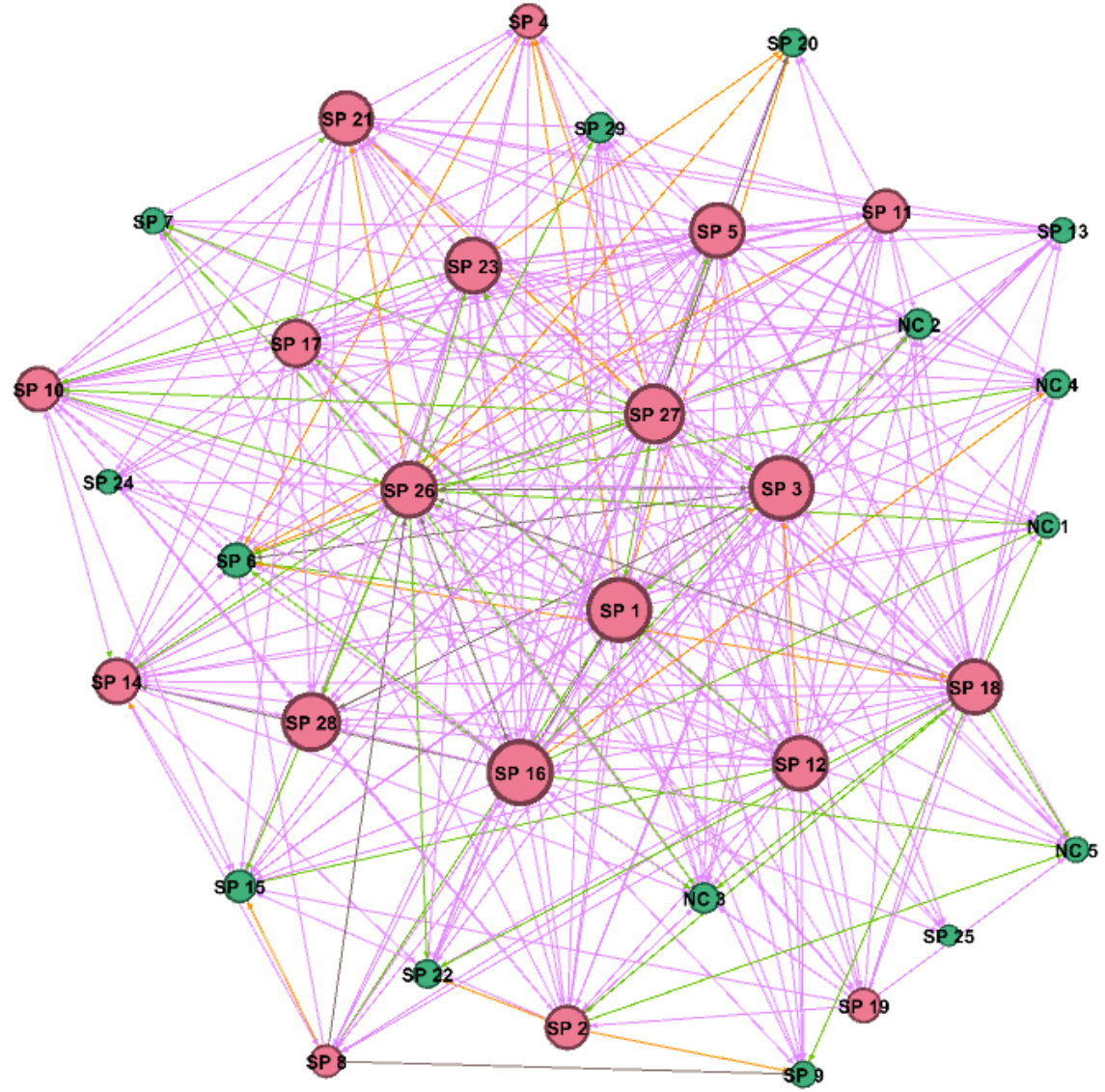
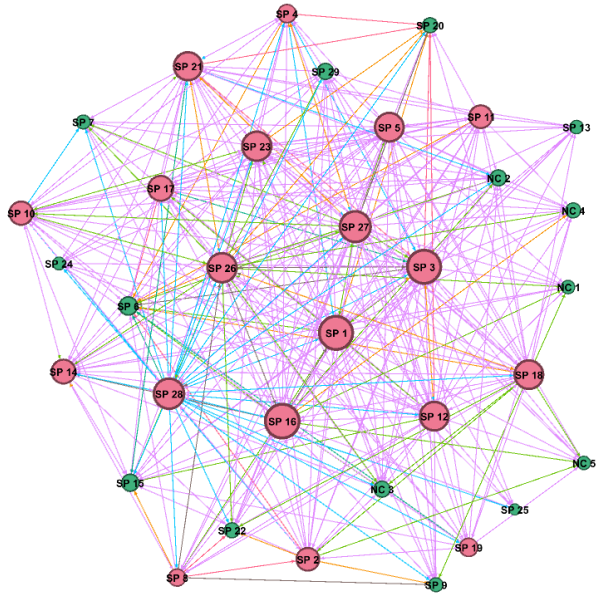




# Shared info

activity-string

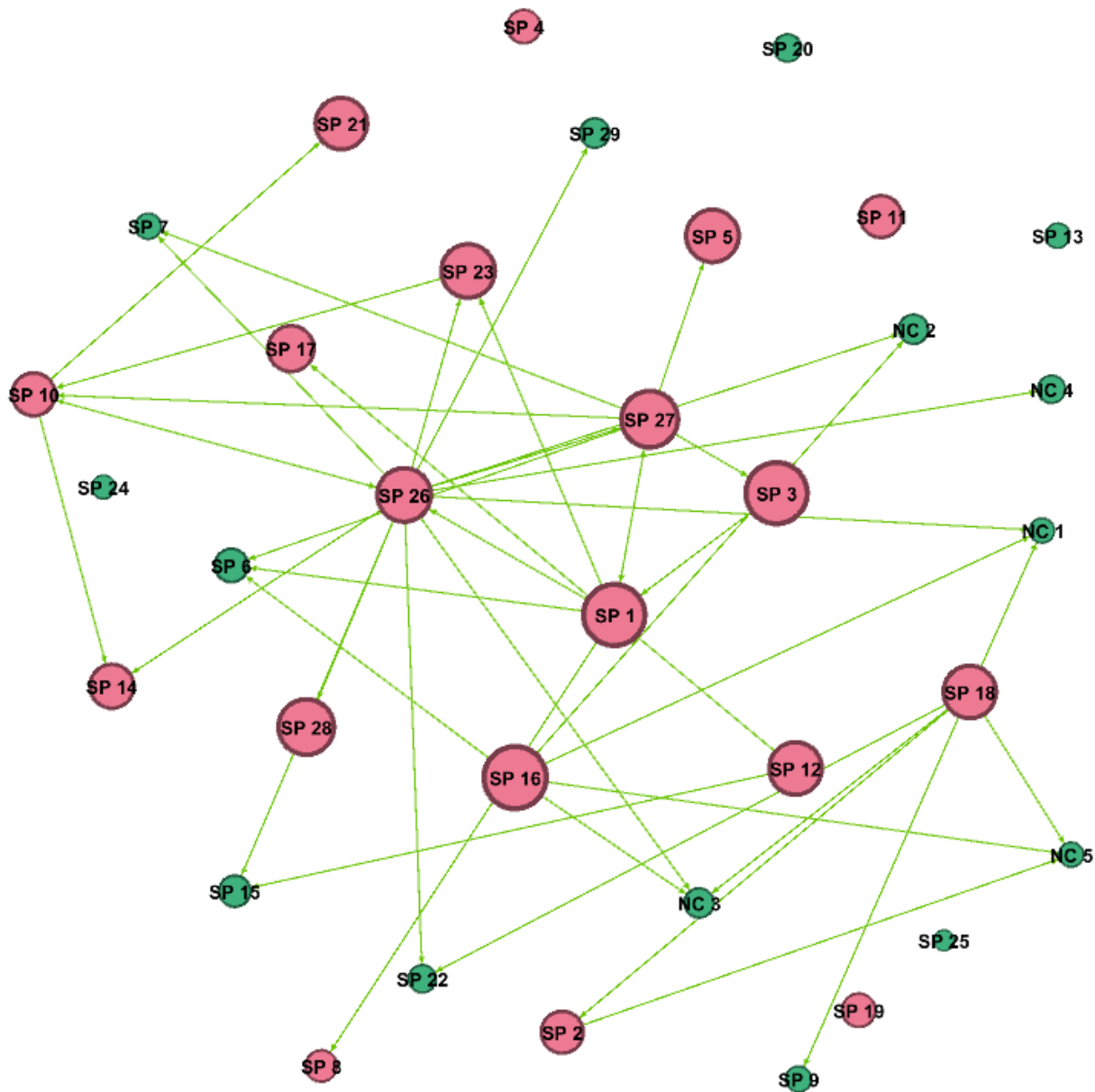
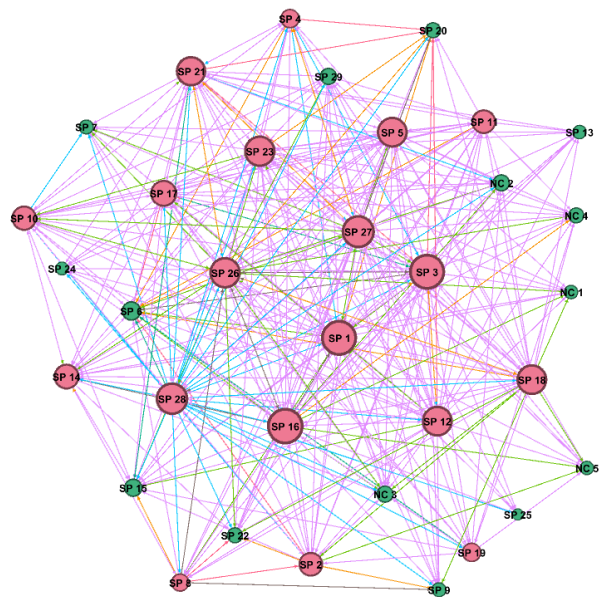
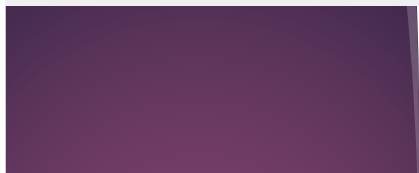
Shared Info	(70.49%)
Shared Info, Joint Delivery	(10.07%)
Joint Delivery	(8.43%)
Shared Info, Funding, Joint Delivery	(4.45%)
Shared Info, Funding	(3.04%)
Funding	(2.58%)
Funding, Joint Delivery	(0.94%)



# Shared Info & Joint Delivery

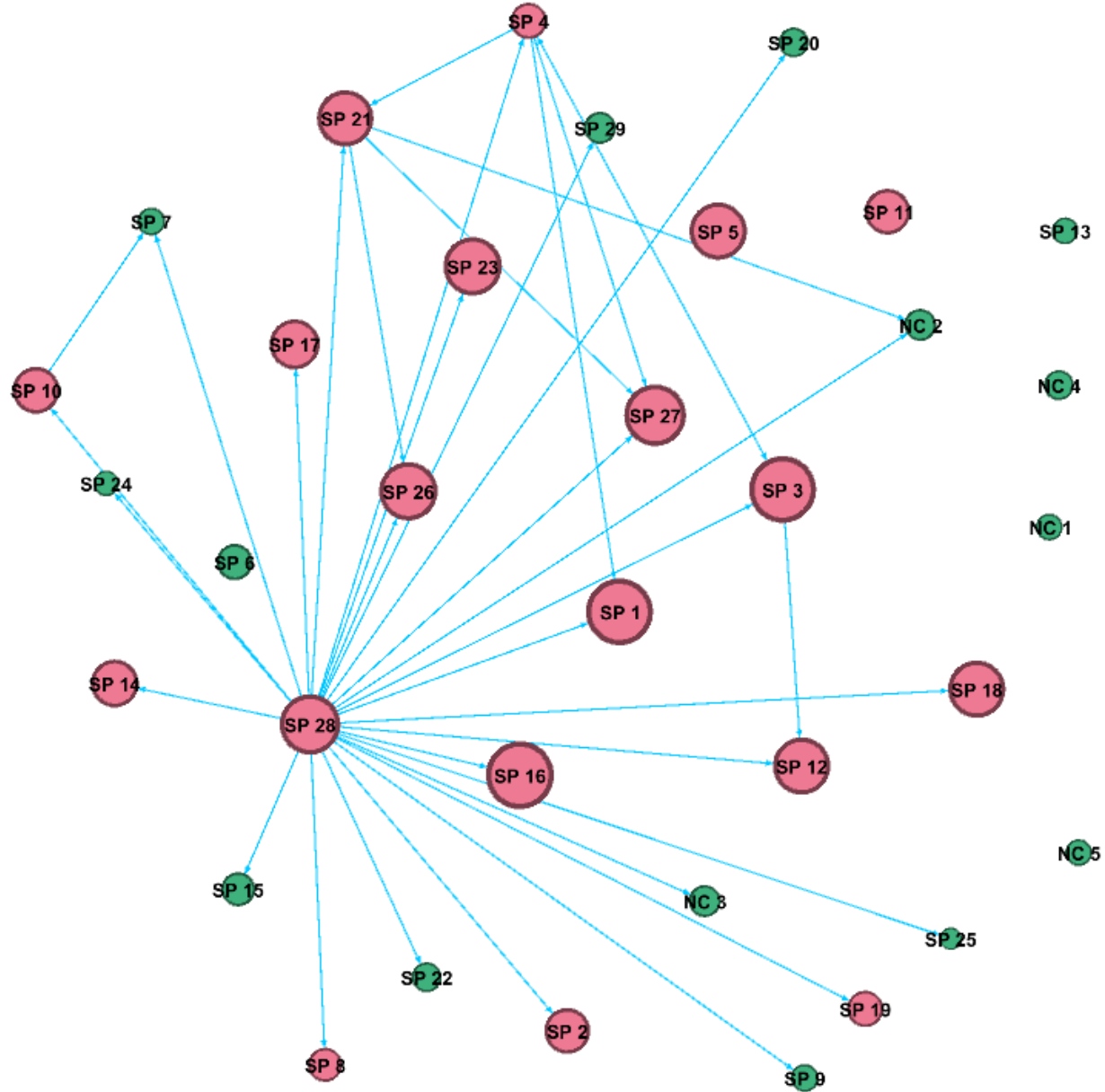
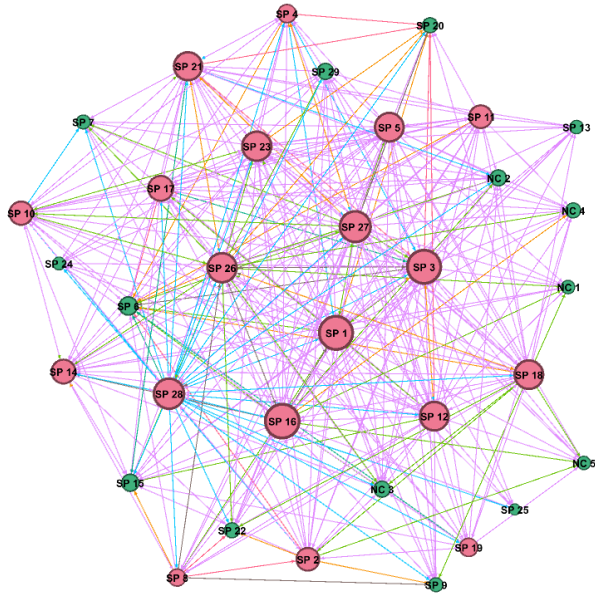
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# Joint Delivery of Programs

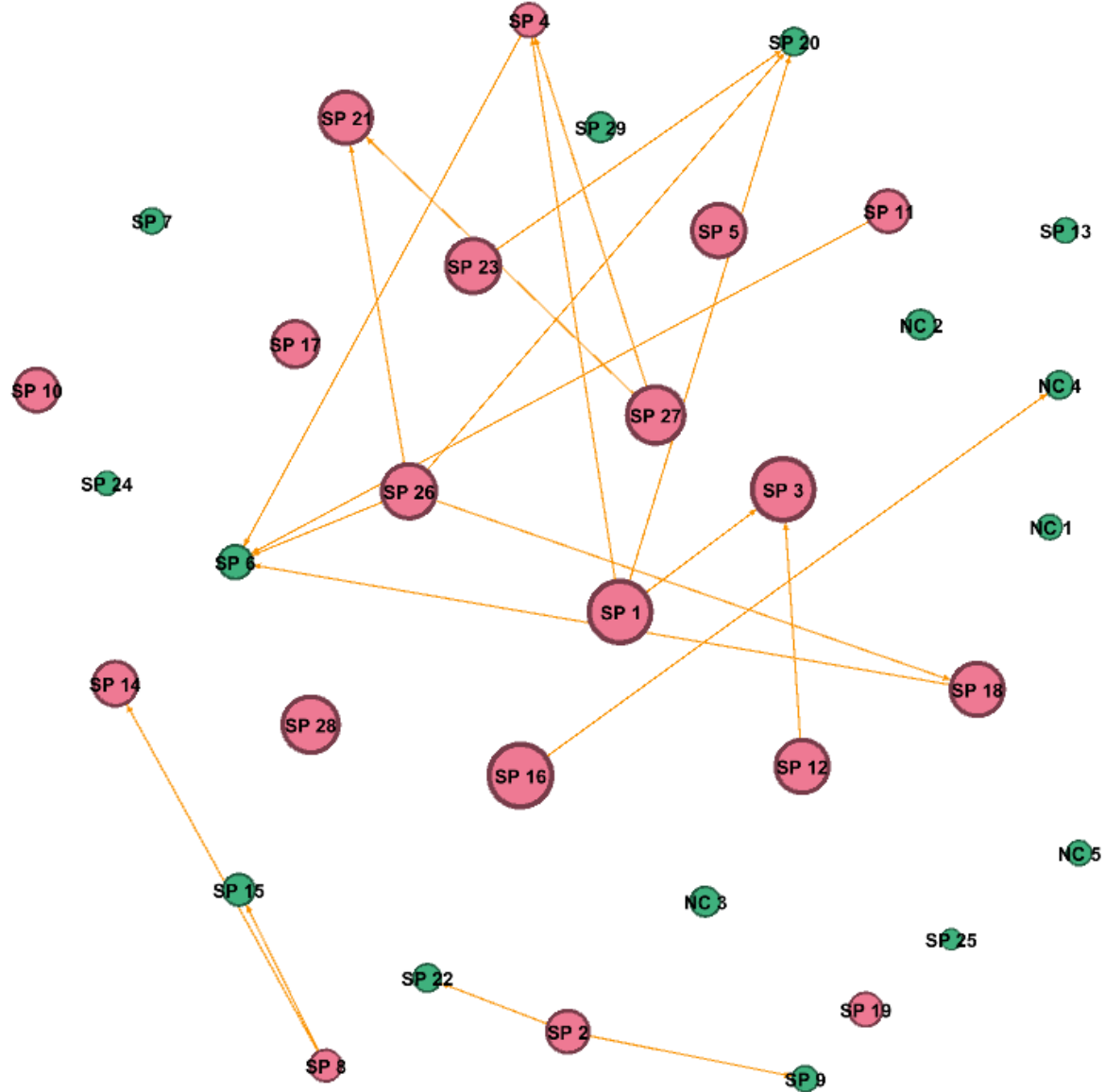
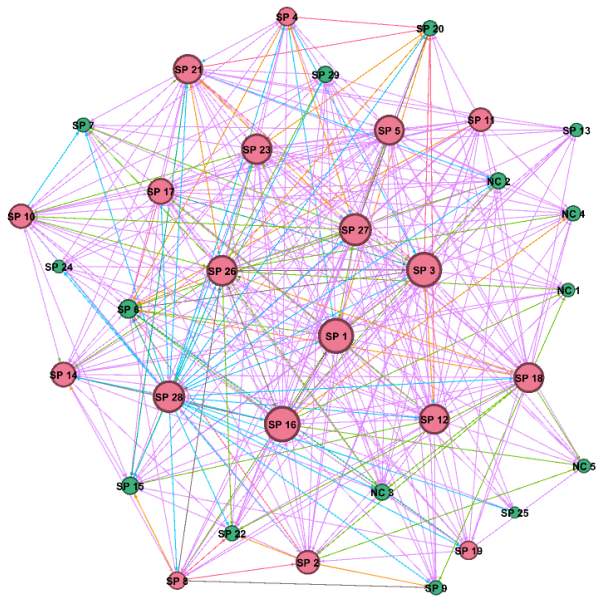
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# Shared info with joint delivery and funding

activity-string

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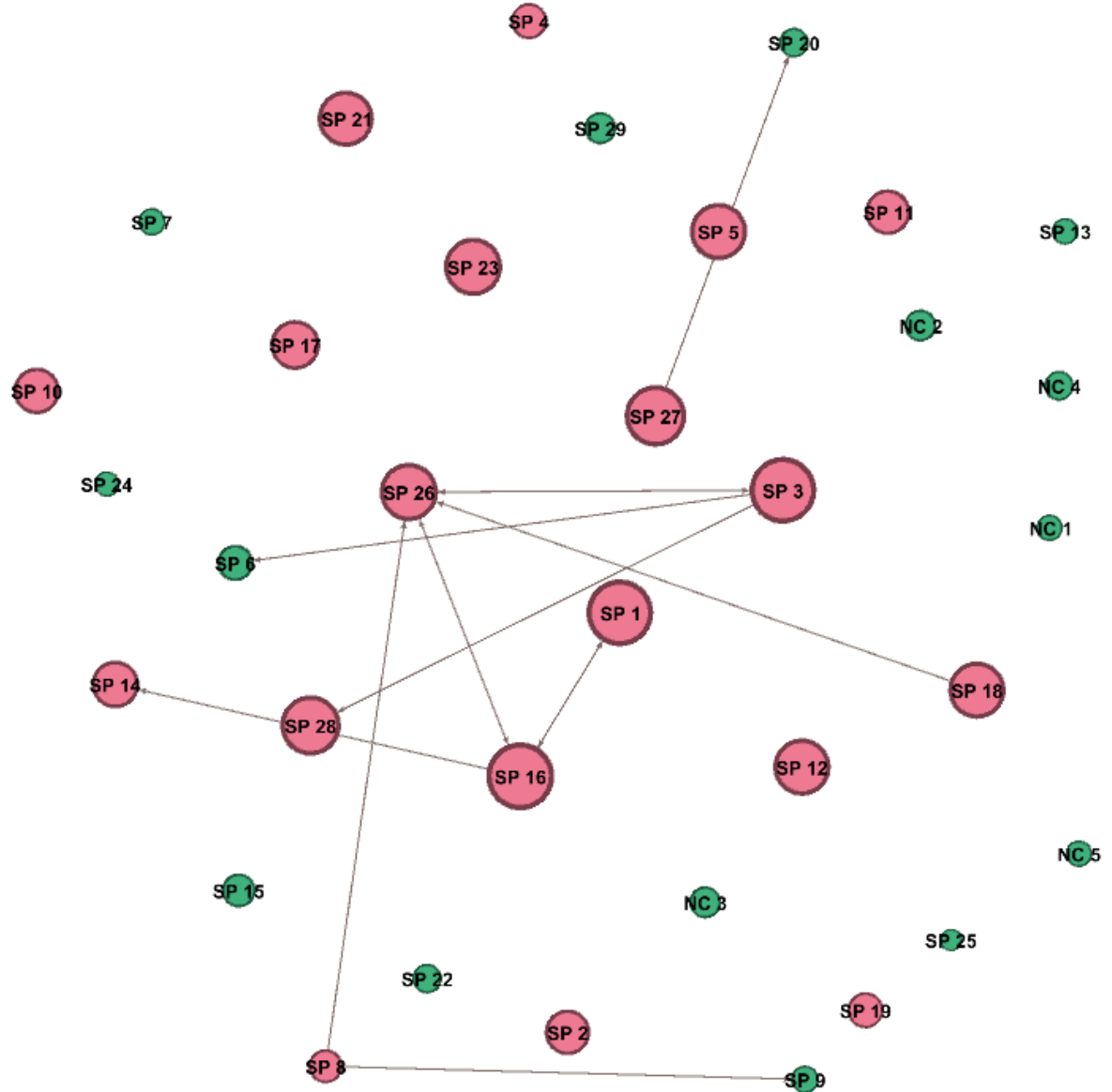
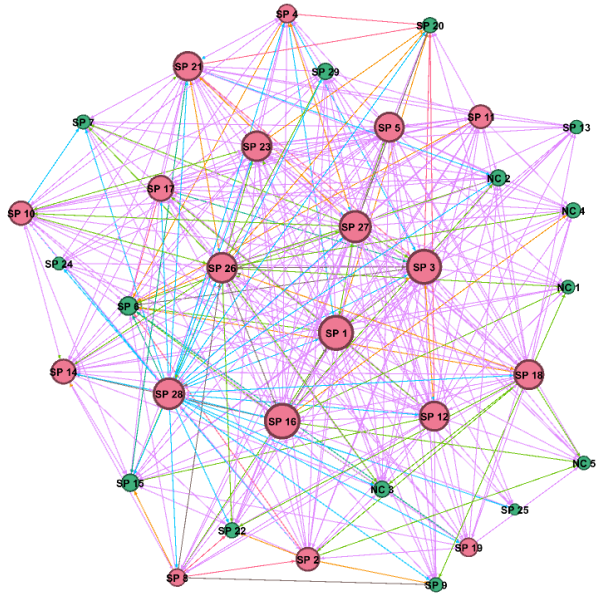


# Shared info and Funding



activity-string

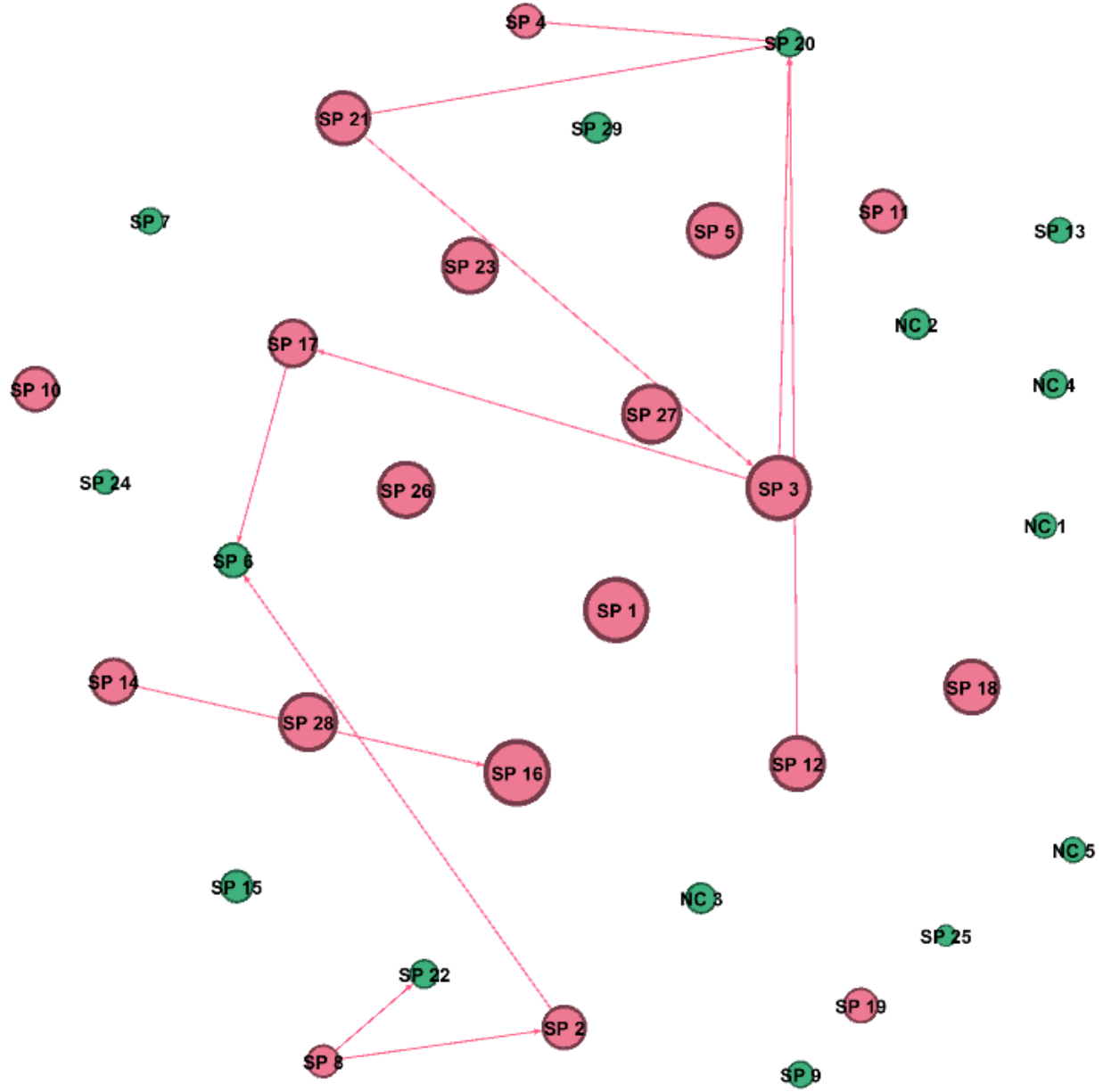
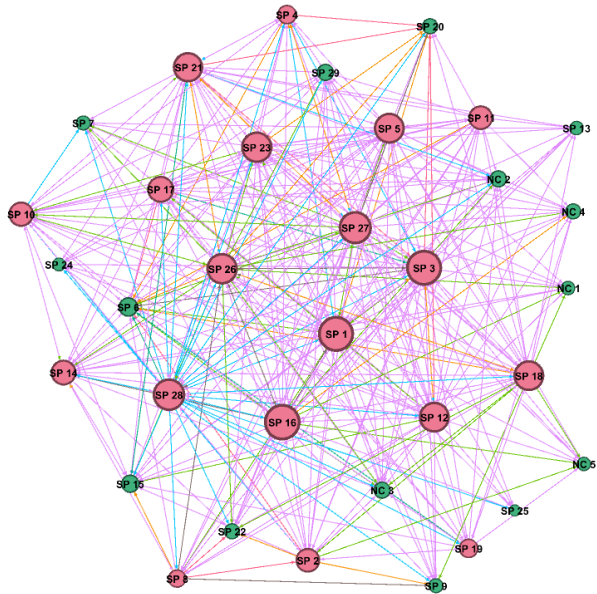
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# Funding relationship

activity-string

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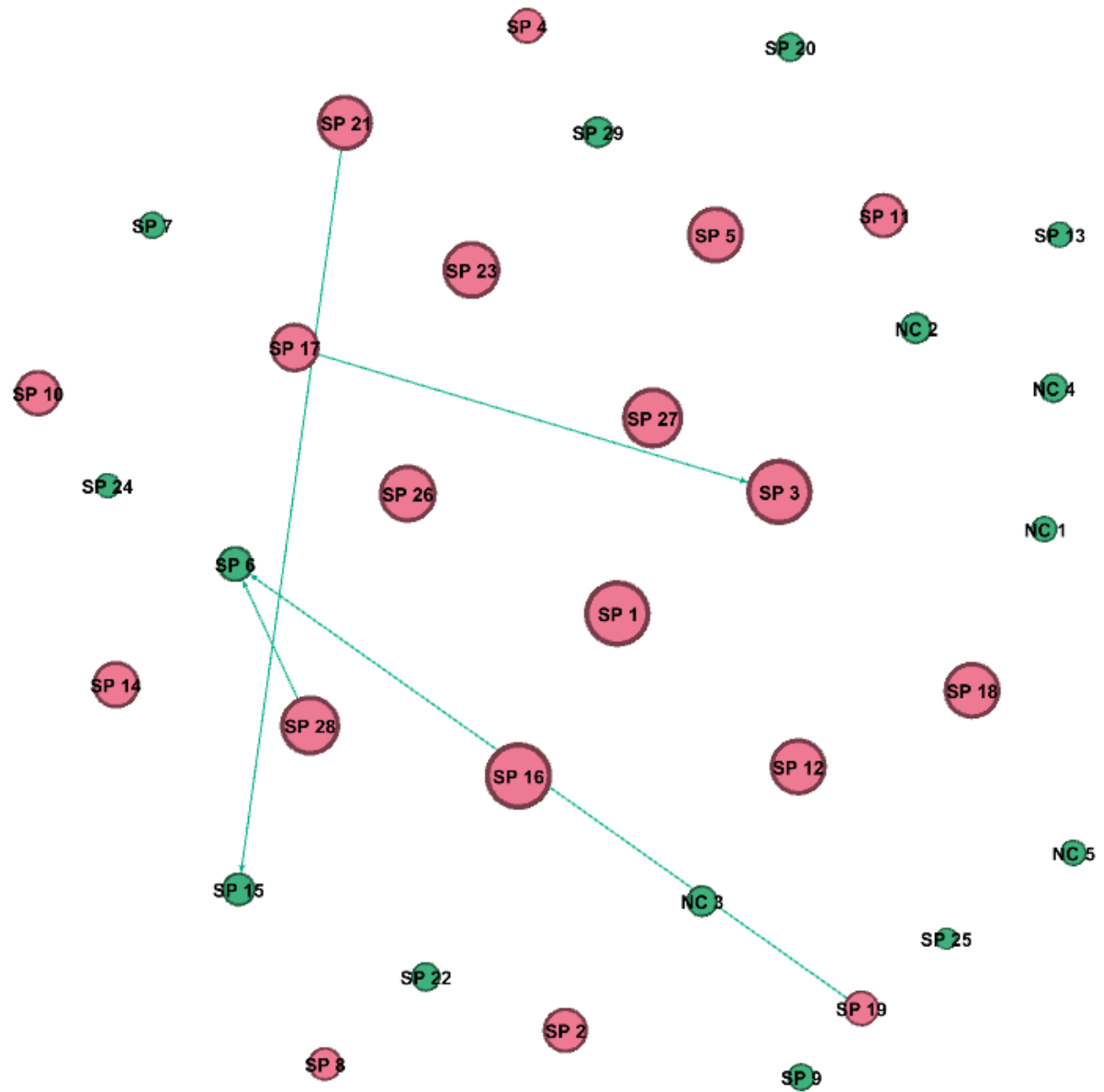
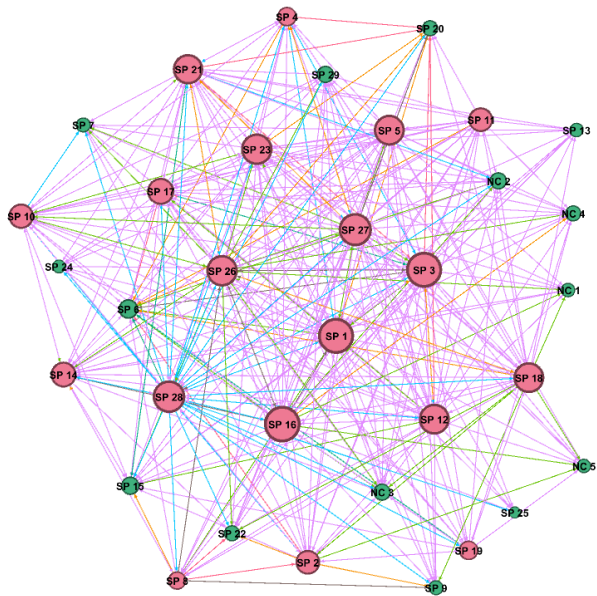


# Funding and Joint Delivery of Programs



activity-string

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# Lessons and next steps

- ▶ Initial analysis
  - ▶ Potential for more in depth analysis such as according to service provider type
- ▶ Limitations – lessons learned about survey design and delivery for improved data and results
  - ▶ Expanding network and organisational outreach and options for responses
  - ▶ In person data collection



# Lessons and next steps

- ▶ Useful for demonstrating
  - ▶ types of relationships
  - ▶ strengths of relationships
  - ▶ differences in network performance between different types of relationships
- ▶ Could be used to compare impacts of system integration activities using pre and post application
- ▶ Potential for comparison between cities and regions



Thanks!

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