How Is the Network of Quitlines Changing?  
Key Service Findings of The KIQNIC Project

Scott J. Leischow1, Keith Provan2, Joe Bonito2, Jessie Saul3, Gregg Moor4, Robin Lemaire2, Jonathan E. Beagles2

1Mayo Clinic, Scottsdale AZ; 2University of Arizona, Tucson AZ; 3North American Quitline Consortium, Oakland CA; 4InSource Research Group, Coquitlam, BC

Introduction
This study is designed to better understand the network and communications mechanisms by which stakeholders in the North American Quitline Consortium (NAQC), especially state/provincial-level funders and service providers/vendors, interact, share new knowledge, make decisions about how and when to implement new knowledge, and actually adopt practices that they believe will improve quitline outcomes.

Methods
- Surveys were implemented 2009-2011, and our goal is to explore how new knowledge – especially new scientific and innovations evidence – is disseminated, implemented, and integrated within the NAQC community of 73 funder entities (some Canadian quitlines had multiple funders) and 20 service providers plus the NAQC main administrative office (NAO).
- Network data on service delivery info sharing ties at 2 levels of intensity for quitline funders and providers between Years 1 and 3 was analyzed.

Network Plots
The network can best be seen by examining a series of network plots. These plots are presented in Figures 1 to 4. Each plot shows all the network organizations, or “nodes,” including providers (red squares), funders (blue circles), and NAQC’s NAO (yellow triangle). The lines indicate the existence of a tie between two organizations based on the reported flow of information about service delivery, at either moderate or high intensity. The arrow for each tie indicates the direction of the information flow. The size of each node indicates the relative outflow of information (outdegree centrality) from that organization to others in the network. The larger the size, the more the organization is a major sender of information.

Results
Comparison of the Total Number of Service Delivery Information Ties, Density, and Centralization

Regardless of whether certain relationships are excluded from the analysis, density decreased over the two-year period studied. Density dropped precipitously once ties to the NAO and contractual provider ties were eliminated. In addition, when all ties are considered, the network in year 1 was modestly centralized while in Year 3 the network became much more centralized.

Preliminary Conclusions
While the overall connectivity of the network declined somewhat over time, it is apparent that much of the strength of the network, at least in terms of the flow of information regarding services, is based on ties to the NAO and through the contractual relationship between individual quitline funders and their providers. Once these two information connections are excluded, network density drops substantially, suggesting that both providers and funders are not reaching out to those in other states and provinces to send and receive service related information.

Acknowledgements
The KIQNIC project is funded by Grant Number R01CA128638 from the National Institutes of Health to the Mayo Clinic in Scottsdale, Arizona.