Supplemental materials for:

Mundt MP, Zakletskaia LI. Professional communication networks and job satisfaction in primary care clinics. *Ann Fam Med.* 2019;17(5):428-435.

Supplemental Appendix. The Borgatti-Everett Algorithm for Detecting Core-Periphery Structure

Let G = (V, E) be an undirected, unweighted graph of vertices V and edges E, and let $A = (a_{ij})$ be the adjacency matrix of G, where $a_{ij} = 1$ if node *i* and node *j* are linked, and 0, otherwise. Let δ be a vector of length n with entries equal to one, or zero, if the corresponding node belongs to the core or the periphery, respectively. Furthermore, let $\Delta=(\Delta_{ij})$ be the adjacency matrix of the ideal core/periphery network, where $\Delta_{ij} = 1$ if $\delta_i = 1$ and $\delta_i = 1$, and $\Delta_{ij} = 0$ if $\delta_i = 0$ and $\delta_i = 0$ (i.e., $\Delta = \delta^T\delta$, where δ^T is the transpose of the row vector δ). Determining a network's core–periphery structure is an optimization problem aimed at finding the vector δ such that $\rho = \sum A_{ij}\Delta_{ij}$ (1) achieves its maximum value. The measure ρ is maximal when the adjacency matrix A and the matrix Δ are identical, hence a network has core/periphery structure if ρ is large [1]. The Borgatti–Everett algorithm finds the vector δ such that the correlation between the $\Delta = \delta^T\delta$ matrix and the data (adjacency) matrix A is maximized. An idealized core-periphery structure is demonstrated in Figure 2.

Supplemental Figure. Idealized Core-Periphery Structure