

#### Text Box 1 - A brief glossary of network terms

*Connected component:* A network graph in which there is a path of some length from each person to every other person in the network. Everyone is connected to everyone else.

*Geodesic:* The term derives from cartography, where it is used to describe the shortest distance between two points on a sphere. In network usage, it is the shortest number of steps between any two persons in a connected component. The shortest possible distance is one. Confusion arises when a larger number represents the fewest steps between two people. This is the longest shortest distance.

*Chain-link design:* The network design used in this study involved identifying a “seed,” (the initial respondent) who names contacts. One of those contacts is selected by nomination of the seed to be the next respondent in the chain. The chain-link design may be viewed as a subset of the snowball design, wherein all of the seed’s contacts are respondents, taken out as many steps as are appropriate for the study.

*Interactive network:* This is a generic term that simply implies qualitatively that the persons in the network are highly interconnected.

*Degree distribution:* The number of contacts named is often referred to as the degree of the respondent. People will name different numbers of contacts and the degree distribution is the frequency distribution of the number of contacts named by respondents.

*Undirected graph:* A good description is found in *Borgatti SP, Everett MG, Johnson JC. Analyzing Social Networks. Sage, London, 2013: “Undirected graphs are used for relations where direction does not make sense, or logically must always be reciprocated...”*(p. 12) In this study, we are examining, sexual, drug-using and acquaintanceship networks, which fit this definition.

*Point connectivity.* This is the maximum number of different paths that connect two persons in a network. It is equivalent to the number of nodes that would have to be removed to disconnect those two persons.

Supplemental Table 1. Matrix of Geometric and Geodesic Distance for the lower risk area									
	Social (geodesic) Distance (shortest number of edges between persons)								
Geometric distance (km)	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>&lt;1</b>	1140	5663	7455	7279	4375	1503	583	243	16
<b>1</b>	154	896	2575	3726	2664	1058	391	80	17
<b>2</b>	97	971	1978	2583	1830	793	162	54	8
<b>3</b>	74	498	1390	2189	1592	818	144	92	2
<b>4</b>	82	466	1323	1694	1288	375	94	49	6
<b>5</b>	54	466	1348	2238	1066	471	160	75	6
<b>6</b>	77	467	1345	1938	1516	719	247	94	12
<b>7</b>	70	383	1222	1576	1152	457	245	116	22
<b>8</b>	58	349	946	1386	896	386	284	130	18
<b>9</b>	41	288	954	1309	1017	623	167	108	16
<b>10</b>	51	312	1082	1195	832	406	101	54	12
<b>11</b>	43	310	1044	1279	914	368	131	47	5
<b>12</b>	48	320	823	1325	854	321	92	67	8
<b>13</b>	36	284	760	928	547	386	187	68	9
<b>14</b>	37	218	621	1172	893	607	368	150	16
<b>15</b>	57	323	728	1039	823	628	429	171	32
<b>16</b>	24	126	459	688	501	172	160	73	11
<b>17</b>	28	177	464	781	459	171	42	25	4
<b>18</b>	25	211	472	661	420	166	85	40	5
<b>19</b>	39	203	626	885	549	159	77	26	3
<b>20</b>	35	159	395	566	361	132	79	38	5
<b>≥21</b>	188	1737	5046	7602	5765	2277	1125	333	39

Supplemental Table 2. Matrix of Geometric and Geodesic Distance for the lower risk area

	Social Distance (shortest number of edges between persons)							
Geometric distance (km)	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>&lt;1</b>	1476	8696	18129	22096	10577	2654	85	0
<b>1</b>	247	1631	5304	8038	6921	2269	79	0
<b>2</b>	113	826	2582	4108	2738	911	39	0
<b>3</b>	86	834	2472	3336	1763	623	47	9
<b>4</b>	69	599	1964	2942	1819	758	45	0
<b>5</b>	71	592	1671	3044	1744	584	48	2
<b>6</b>	95	660	1880	2967	1397	376	25	1
<b>7</b>	62	448	1371	2505	1627	544	40	2
<b>8</b>	52	315	1150	2230	1718	556	70	18
<b>9</b>	43	367	1113	1983	1157	455	99	1
<b>10</b>	56	310	1087	1823	1239	317	42	0
<b>11</b>	40	328	1023	2073	1493	413	34	3
<b>12</b>	25	195	876	1571	1038	233	15	0
<b>13</b>	26	209	683	1334	777	126	18	0
<b>14</b>	55	245	845	1683	1169	196	22	0
<b>15</b>	41	264	1075	2203	1354	211	17	0
<b>16</b>	20	190	813	1219	806	241	27	0
<b>17</b>	19	179	521	879	793	136	7	0
<b>18</b>	28	240	539	804	524	164	9	0
<b>19</b>	5	141	515	817	515	140	15	0
<b>20</b>	12	141	525	1062	518	113	17	0
<b>≥21</b>	189	1431	5711	11749	8044	2043	57	0