

*'Health professional networks as a vector for improving health care quality and safety. A systematic review. Cunningham et al.*

**Appendix Table B:** Research design and methodology of studies

| Study                          | Study Design/<br>Quality        | Methodology              |           |             |                                    |                                      |  |  |                          |
|--------------------------------|---------------------------------|--------------------------|-----------|-------------|------------------------------------|--------------------------------------|--|--|--------------------------|
|                                |                                 | Survey                   | Interview | Observation | Document Analysis or Archival Data | Sample size/<br>(response rate)      | Social Network Analysis                      | Level of Analysis                        | Other Analysis           |
| Calloway et al., 1999[51]      | comparative case studies<br>+++ | √<br>(interview)         | -         | -           | -                                  | 325 agencies<br>(100%)               | √<br>structure connections                   | networks                                 | sociometric analysis     |
| Carpentier et al., 2008[41]    | comparative case studies<br>+   | √<br>(interview)         | -         | -           | √                                  | 21 staff (95%)                       | √<br>connections                             | actor, organisation, inter-institutional | content analysis: NVivo  |
| Chase, 1995[27]                | ethnographic study<br>++        | -                        | √         | √           | √                                  | 97 nurses (31% observed)             | -  | actors organisation                      | -                        |
| Cott, 1997[49]                 | case study<br>++                | √<br>(self-administered) | -         | -           | -                                  | 153 health workers (60%)             | √<br>structure homogeneity                   | actors, team                             | -                        |
| Creswick & Westbrook, 2007[28] | case study<br>+++               | √<br>(self-administered) | -         | -           | -                                  | 47 renal ward staff (96%)            | √<br>connections homogeneity                 | actors, network                          | -                        |
| Creswick et al., 2009[29]      | case study<br>+++               | √<br>(self-administered) | -         | -           | -                                  | 109 emergency department staff (94%) | √<br>connections homogeneity density         | actors, network                          | -                        |
| Fattore et al., 2009[42]       | comparative case study<br>+++   | -                        | -         | -           | archival data                      | 92 GPs, 2001, 157 GPs, 2004 (100%)   | √<br>social capital social influence density | actors, networks                         | multiple regression: OLS |

| Study  | Study Design / Quality        | Methodology                |           |             |                                    |  |                                     |                              |                     |
|--|-------------------------------|----------------------------|-----------|-------------|------------------------------------|--|-------------------------------------|------------------------------|---------------------|
|  |                               | Survey                     | Interview | Observation | Document Analysis or Archival Data | Sample Size/ (response rate)   | Social Network Analysis             | Level of Analysis            | Other Analysis      |
| Garrett & McDaniel, 2001[30]   | cross-sectional study<br>+    | √<br>(self-administered)   | -         | -           | -                                  | 287 nurses (26%)   | -                                   | actors, organisation         | multiple regression |
| Gold et al., 2008[47]  | cross-sectional study<br>+++  | √<br>(mailed)              | √         | -           | -                                  | 9 health plans, 6 support organisations (100%)                             | √<br>connections centrality         | network (inter-organisation) | -                   |
| Heng et al., 2005[35]  | case study<br>++              | √                          | -         | -           | -                                  | 15 hospital managers (100%)  | √<br>brokerage structural holes     | actors, network              | -                   |
| Lemieux-Charles et al., 2005[36]   | multi-case study<br>+++       | √                          | -         | -           | √                                  | 1 clinician, 1 manager: each of 60 organisations (100%)                    | √<br>connections cliques            | networks (inter-agency)      | -                   |
| Lewis et al., 2008[37]   | comparative case study<br>+++ | √<br>(3 annual interviews) | -         | -           | -                                  | 96 urban primary care, 98 rural (100%)                                     | √<br>structure centrality stability | networks                     | -                   |
| Lindholm, 2006[43]; Lindholm et al., 2003[44]; Lindholm et al., 2004[45] | cross-sectional study<br>+++  | √<br>(mailed)              | -         | -           | -                                  | 322 chief manager nurses (77%) 373 physician clinical directors (73%)      | -                                   | actors, network              | odds ratios         |
| Lurie et al., 2009[48]   | case study<br>++              | √                          | -         | -           | archival data                      | 18 (ICU teams), 53 researchers, 157 committee members, 12 directors (100%) | √<br>connections                    | actors, networks             | -                   |

| Study                       | Study Design / Quality                   | Methodology      |           |             |                                    |   |  |                              |                     |
|-----------------------------|--|------------------|-----------|-------------|------------------------------------|---|--|------------------------------|---------------------|
|                             |  | Survey           | Interview | Observation | Document Analysis or Archival Data | Sample Size/ (response rate)  | Social Network Analysis                    | Level of Analysis            | Other Analysis      |
| MacPhee, 2000[31]           | comparative case study<br>++             | √                | -         | -           | -                                  | 300 traditional nurses (40%) 100 flexible nurses (46%)  | √<br>structure homogeneity                 | actors, network              | -                   |
| MacPhee & Scott, 2002[32]   | comparative case study<br>++             | √                | -         | -           | -                                  | 225 nurses (33%)  | √<br>structure homogeneity                 | actors, network              | T-tests             |
| Mendel et al 2009[33]       | comparative case study: T1 and T2<br>+++ | √<br>(interview) | -         | -           | -                                  | (2004) 38 organisations (92%), (2006) 59 organisations (93%)  | √<br>connections<br>diffusion<br>stability | network (inter-organisation) | -                   |
| Milward & Provan, 1998[52]  | multi-case study<br>+++                  | √<br>(interview) | -         | -           | -                                  | 32 to 36 agencies for each of 4 service networks, 23 agencies for substance-abuse network (92-100%) | √<br>connections                           | network (inter-organisation) | -                   |
| Milward & Provan, 2003[38]  | multi-case study<br>++                   | √<br>(interview) | -         | -           | -                                  | 40 agencies (100%)  | √<br>connections<br>stability              | network (inter-organisation) | -                   |
| Mossholder et al., 2005[34] | case study<br>++                         | √                | -         | -           | -                                  | 374 hospital staff (58%)  | √<br>connections<br>embeddedness           | actors, network              | survival analysis   |
| Ommen et al. 2009[46]       | cross-sectional case study<br>+++        | √                | -         | -           | -                                  | 454 physicians (61%)  | -  | actors, organisation         | multiple regression |

| Study  | Study Design / Quality       | Methodology      |           |             |                                    |  |  |                                  |                            |
|--|------------------------------|------------------|-----------|-------------|------------------------------------|--|--|----------------------------------|----------------------------|
|  |                              | Survey           | Interview | Observation | Document Analysis or Archival Data | Sample Size/ response rate                         | Social Network Analysis                                      | Level of Social Network Analysis | Other Statistical Analysis |
| Ormrod et al. 2007[53]   | ethnographic study<br>++     | -                | √         | √           | √                                  | 3 mental health agencies                           | -  | actors/team                      | -                          |
| Peng et al., 2006[39]  | cross-sectional study<br>++  | √                | -         | -           | -                                  | 494 hospitals (20%)                                | -  | organisation, network            | multiple regression        |
| Rangachari, 2008[40]   | multi-case study<br>+++      | √                | √         | -           | -                                  | 65 staff (100%)                                    | √<br>brokerage<br>hierarchy<br>density                       | networks                         | -                          |
| Webster et al., 1999[50]   | multi-case study<br>+++      | √<br>(interview) | -         | -           | -                                  | 8 mental health teams: 8-11 in each (100%)         | √<br>connections<br>centrality                               | actors ,teams                    | -                          |
| West & Barron, 2005:[54]<br>West et al., 1999[55]  | cross-sectional study<br>+++ | √<br>(telephone) | -         | -           | -                                  | 50 nursing directors, 50 medical directors (49.5%) | √<br>connections<br>homogeneity<br>brokerage<br>embeddedness | actors,<br>networks              | -                          |
| <b>TOTAL</b>   | <b>26</b>                    | <b>23</b>        | <b>4</b>  | <b>2</b>    | <b>6</b>                           |  | <b>20</b>  |                                  |                            |
| +++ All of the study quality assessment criteria were fulfilled; ++ Almost all of the criteria were fulfilled; + Some of the criteria were fulfilled; – Few or no criteria were fulfilled. |                              |                  |           |             |                                    |  |  |                                  |                            |