Algorithm Additional file 3: Pseudocode for a generic greedy search algorithm.

**Require:** Initialize an empty Bayesian network $G$ containing $n$ nodes (i.e., a BN with $n$ nodes but no edges)

1. Evaluate the score of $G$: $\text{Score}(G)$
2. $BEST = \text{Score}(G)$
3. repeat
   4. $FROM = 0$
   5. $TO = 0$
   6. for $i = 1$ to $n$ do
      7. for $j = 1$ to $n$ do
         8. $G' = G$
         9. if $i \neq j$ then
            10. if there is no edge between the nodes $i$ and $j$ in $G'$ then
               11. Modify $G'$: add an edge between the nodes $i$ and $j$ in $G'$ such that $i$ is a parent of $j$: $(i \rightarrow j)$
               12. if the resulting $G'$ is a DAG then
                  13. if ($\text{Score}(G') > BEST$) then
                     14. $BEST = \text{Score}(G')$
                     15. $FROM = i$
                     16. $TO = j$
                  17. end if
               18. end if
            19. end if
         20. end for
      21. end for
   22. if $FROM > 0$ then
      23. Modify $G$: add an edge between the nodes $FROM$ and $TO$ in $G$ such that $FROM$ is a parent of $TO$: $(FROM \rightarrow TO)$
   24. end if
   25. until $FROM = 0$
26. return $G$ as the structure of the BN