

**Table S1.** List of nodes in the crane accident causation network.

Incident outcome					
I1	Crane injuries	I4	Worker fall	I7	Electric shock
I2	Object strike	I5	Trapping	I8	Collapse of crane
I3	Drown	I6	Collision injures	I9	Load drop
Causal factor					
H1	Unskilled operators	C8	Unexpected operation	E11	Wet ground
H2	Carelessness	C9	Broken/failed rope	E12	Collapse of container
H3	Operation error	C10	Metal fatigue	E13	Working near a hole
H4	In an unsafe position	C11	Parts of a crane fall	E14	Collapse of working platform
H5	Lack of safety awareness	C12	Connection failure	M1	Unqualified employment
H6	Fatigue	C13	Collision	M2	Absence of signaler
H7	Improper use of PPE	E1	Strong wind	M3	Improper rescue
H8	Lack of communication and coordination	E2	Poor visibility	M4	Improper safety management measures
H9	Old age	E3	Soft ground	M5	Tight working schedule
C1	Crane unbalanced	E4	Uneven ground	M6	Improper inspection and maintenance
C2	Support failure	E5	Collapse of wall	M7	Improper work area division
C3	Machine failure	E6	Slope	M8	Improper reporting and investigation procedures
C4	Overloading	E7	Unsafe workplaces	M9	Mistakes again
C5	Hazardous lifting	E8	Floor failure	M1	Contractor's violation
C6	Load/hook swing/tilted	E9	Pieces dropped	M1	Improper cost control
C7	Unsafe design	E10	Rainy weather		

PPE: personal protective equipment.