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| Question |
| **Should there be an option for family presence vs. no family presence to be used in resuscitation after cardiac arrest?** |
| **Population:** | Adults requiring resuscitation for cardiac arrest in any setting |
| **Intervention:** | Family presence during resuscitation after cardiac arrest.  |
| **Comparison:** | Family not present during resuscitation after cardiac arrest. |
| **Main outcomes:** | * Patient outcomes (short and long term): return of spontaneous circulation, survival (to hospital admission, hospital discharge, 3 months, 6 months, 1 year), survival with good neurological outcomes (at same time points), depression and anxiety.
* Family (or significant other) outcomes: (short and long term) PTSD, coping, perception of the resuscitation, depression and anxiety amongst family members, complicated grief syndrome.
* Health care provider outcomes: perception of the resuscitation, performance, perceived futility in some circumstances, psychological stress including projection to provider’s own family.
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| **Setting:** | Any setting including public areas, homes and hospital settings.  |
| **Background:** | The low survival rates mean that cardiac arrest is a pivotal event during which family members may wish to be present during resuscitative efforts.1 Advocates of family presence during resuscitation cite improved coping and grieving outcomes for the family, reduced litigation, and improved resuscitation team behaviours.1-3 Conversely, concerns have been raised about the distress that family presence during resuscitation may cause families or healthcare providers, and the impact of family presence during resuscitation on team performance.1,4 In 2021, an International Liaison Committee on Resuscitation (ILCOR) systematic review of family presence during neonatal and paediatric resuscitation showed: that parents/family members wanted the option to be present for their child's resuscitation; wide variation in health care provider attitudes towards family presence during paediatric or neonatal resuscitation; and insufficient evidence to demonstrate the effect of family presence during resuscitation on patient or family outcomes.5  |
| **Conflict of interests:** | None of the Task Force members declared any conflict of interest and this was acknowledged and managed by the Task Force Chairs and Conflict of Interest committee.  |

# Assessment

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| ProblemIs the problem a priority? |
| Judgement | Research evidence | Additional considerations |
| ○ No○ Probably no○ Probably yes● Yes○ Varies○ Don't know | The low survival rates mean that cardiac arrest is a pivotal event during which family members may wish to be present during resuscitative efforts.1 Systematic reviews related to family presence during adult resuscitation thus far have focused on RCTs, which may not provide a comprehensive assessment of the research evidence to date. | Cultural, religious, sociological factors may impact on practice related to family presence during resuscitation. COVID-19 may have impacted established practices around family presence during resuscitation in some settings. |
| Desirable EffectsHow substantial are the desirable anticipated effects? |
| Judgement | Research evidence | Additional considerations |
| ○ Trivial● Small○ Moderate○ Large○ Varies○ Don't know | **Patient survival (short and long term)**Only four6-9 (including one RCT6) of the 12 studies6-17 reporting patient outcomes reported on the impact of family presence versus no family presence during adult resuscitation. Three found no significant difference in ROSC based on family presence or absence. One study favoured family absence during cardiac arrest for ROSC and survival to discharge. This study was potentially limited in the size of the ‘family present’ group.**Family outcomes**All participants (n=24) in one survey of family members18 and 94% (n=44) in another19 stated they would witness the resuscitation again. Two of three studies that questioned family members about regret found that none (of six family members),17 and 3% (n=9)6 regretted being present. Family members believed witnessing the resuscitation assisted them to cope with their grief (100%, n=24)18 and adjust to their family members death (76%, n=36).19 In an interview of 14 family members all believed witnessing the resuscitation was important and helpful.12 Anxiety and anxiety symptoms at 90-days was found to be significantly lower than in those that witnessed a family member’s resuscitation.6,11,13 Finally, 64% (n=30) of family members believed their presence was meaningful to their dying family member and helped them to die peacefully (62%, n=29).19 Themes that emerged in the qualitative studies centred around being able to choose whether to be present;20,21 being physically (need for proximity) and emotionally present;10,21-23 need for information and communication with providers;10,21,22 and need for support (physical, emotional and spiritual).10,22 Other studies reported notions of families knowing that ‘everything was done’.20,21**Provider outcomes**Positive experiences of family presence during resuscitation were reported by 3.3%24 to 22.4%25 of providers.24-27 Positive experiences were that the resuscitation team could provide reassurance to families,28 and there was an opportunity for collaboration between providers and families in providing patient care, comfort and physical closeness.28-30 Providers could alleviating family concerns, guide families through a traumatic experience and respond to families existential needs which they viewed to be a positive experience.28,29,31 Around three-quarters of providers supported family presence during resuscitation,12,19 and up to 68% believe their function during resuscitation was not impaired by family presence.18,19 Providers believed that the patient benefited from family presence (50%),32 family members benefited by being present (69%),32 and family members were able to emotionally tolerate being present (58%).32Educational preparation and experience of providers was a key factor in managing the stressful situation of family presence during resuscitation, and managing family distress.29,33,34 | None of the research considered the role of cultural, religious, sociological factors and reporting of any patient characteristics varied and was very limited. More clarity around the effect of family presence may be achieved when considered in the setting of these factors. |
| Undesirable EffectsHow substantial are the undesirable anticipated effects? |
| Judgement | Research evidence | Additional considerations |
| ● Trivial○ Small○ Moderate○ Large○ Varies○ Don't know | **Patient survival (short and long term)**In one study, survival to hospital discharge was significantly lower when families were present in both unadjusted (p=0.04) and adjusted analyses (p=0.03),35 but two other studies showed no difference in 28-day survival,36 or 30-day survival37 respectively.**Family outcomes**Depression screening was conducted in four studies,6,11,13,38 three at 90-days11,13,38 and one at 30-days.6 One study found witnessing resuscitation was an independent predictor of depression at 90-days (95% CI: 1.27-35.34, p=0.03),11 two found less depression/depression symptoms amongst those who witnessed resuscitation at 90-days (95% CI: 0.12-0.58;13 15% vs 26%, p=0.0096) and one found no significant difference between the groups at 30-days.38Post-traumatic stress disorder (PTSD) symptoms were investigated in four studies.6,13,38,39 One study reported that family members witnessing resuscitation had significantly higher PTSD symptom scores (14.47 vs.7.60, 95%CI: 0.57-13.17, p = 0.03),39 and another reported higher likelihood of experiencing increased arousal at 60 days post event (40.9% vs 13.9%: 95%CI: 3.6-50.4%).38 However, two other studies reported that family members present during resuscitation had less PTSD at 90-days (RR=0.05; 95%CI=0.01-0.15;40 27% vs 41%, p=0.00136).Some studies reported that family members found being present during resuscitation a brutal and dehumanising experience21 that was distressing,20,21 and were worried about trying to remove thoughts about the resuscitation.20 Family members reported being afraid of interfering or disrupting resuscitative efforts20 or losing emotional control,20 and others perceived that there was an excessive or unnecessarily heroic approach to resuscitation,21 and that it was too long and possibly extended for their benefit.19**Provider Outcomes**Negative experiences included families preventing or interfering with resuscitation,28 aggressive or disruptive family behaviours,28,30 and provider concern about family trauma and heighted awareness of negative and visually distressing images for the family witnessing the resuscitation.28-30A number of studies reported internal conflicts for providers who needed to balance compassionate care and technical competence,29,30 reconcile unsettling emotions with their professional practice and responsibilities,29 move from patient to family care, and resolve feelings of guilt and failure associated with termination of resuscitation or discomfort with performing futile resuscitation.31A minority believed that family presence hindered care in terms of clinical performance (8.3%),41 and interruptions (13.1%);41 12% agreed or strongly agreed that family members interfered in care,32 and 12% agreed or strongly agreed that team communication was negatively affected by family presence.32Three studies investigated provider anxiety42 or stress.6,43 Mean anxiety was 8/10 in providers who had family witnessing resuscitation compared to 3/10 for providers without family witnessing the resuscitation.42 No difference was found in stress levels for either study reporting provider stress.6,43 | **Family outcomes**Other factors contributing to depression or PTSD were not factored into the studies. |
| Certainty of evidenceWhat is the overall certainty of the evidence of effects? |
| Judgement | Research evidence | Additional considerations |
| ● Very low○ Low○ Moderate○ High○ No included studies |

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| **Outcome** | **Certainty of evidence** |
| Patient outcomes  | Very low | ⊕ |
| Family outcomes: depression, anxiety, PTSD | Very low | ⊕ |
| Family outcomes: experience of resuscitation | Very low | ⊕ |
| Provider outcomes: experience | Very low | ⊕ |
| Provider outcomes: anxiety, stress | Very low | ⊕ |

 | There were 2 RCTs and 16 observational studies. The remaining studies were qualitative (12 studies) and mixed-methods (1 study).Certainty was downgraded to very low due to significant heterogeneity in study design, resuscitation setting, populations and assessment tools used. Sample sizes varied across the studies ranging from five44 to 3,2578.  |
| ValuesIs there important uncertainty about or variability in how much people value the main outcomes? |
| Judgement | Research evidence | Additional considerations |
| ○ Important uncertainty or variability○ Possibly important uncertainty or variability● Probably no important uncertainty or variability○ No important uncertainty or variability | Main outcome is survival, and neurologically intact survival. COSCA has confirmed importance of these outcomes.45 Families and health care providers are likely to value the outcomes included in this systematic review.46Family and provider outcomes were decided and prioritised by the BLS and EIT Task Forces.  |  |
| Balance of effectsDoes the balance between desirable and undesirable effects favor the intervention or the comparison? |
| Judgement | Research evidence | Additional considerations |
| ○ Favors the comparison○ Probably favors the comparison○ Does not favor either the intervention or the comparison● Probably favors the intervention○ Favors the intervention○ Varies○ Don't know | There is insufficient evidence to categorically state the effect on patient, family and provider outcomes. However, the evidence in this systematic review suggests little impact on patient outcomes, positive effects for family who are present during a loved-one’s resuscitation and little negative psychological impact on providers. Furthermore, the outcomes of the systematic review suggest negative outcomes reported by providers can be addressed with the development of policies and procedures to assist healthcare providers to navigate family presence during resuscitation.  |  |
| Resources requiredHow large are the resource requirements (costs)? |
| Judgement | Research evidence | Additional considerations |
| ○ Large costs● Moderate costs○ Negligible costs and savings○ Moderate savings○ Large savings○ Varies○ Don't know | No studies reported on the costs associated with family presence. One study described an area had been set up to allow families to witness the resuscitation (i.e. a viewing window) but no costs were given.42 It is possible that there may be costs associated with setting up viewing areas.The evidence is clear that providers would like family support personnel,32,33,36,38,43,47,48 and policies or protocols for family presence during resuscitation,18,25,26,48 and specific provider training manage family presence during resuscitation.48,49 These initiatives would need to be funded. |  |
| Certainty of evidence of required resourcesWhat is the certainty of the evidence of resource requirements (costs)? |
| Judgement | Research evidence | Additional considerations |
| ○ Very low○ Low○ Moderate○ High● No included studies | No studies compared the cost-effectiveness of family presence versus no family presence.  |  |
| Cost effectivenessDoes the cost-effectiveness of the intervention favor the intervention or the comparison? |
| Judgement | Research evidence | Additional considerations |
| ○ Favors the comparison○ Probably favors the comparison○ Does not favor either the intervention or the comparison○ Probably favors the intervention○ Favors the intervention○ Varies● No included studies | No studies compared the cost-effectiveness of family presence versus no family presence. As stated, providers have identified the need for family support personnel,32,33,36,38,43,47,48 and policies or protocols for family presence during resuscitation,18,25,26,48 and specific provider training manage family presence during resuscitation.48,49 All of these will require resourcing, and the cost effectiveness of this should be investigated.  |  |
| EquityWhat would be the impact on health equity? |
| Judgement | Research evidence | Additional considerations |
| ○ Reduced○ Probably reduced○ Probably no impact○ Probably increased○ Increased○ Varies● Don't know | None of the included studies addressed health equity in this setting.  |  |
| AcceptabilityIs the intervention acceptable to key stakeholders? |
| Judgement | Research evidence | Additional considerations |
| ○ No○ Probably no● Probably yes○ Yes○ Varies○ Don't know | This will vary according to setting but overall the acceptability is ‘probably yes’. Some of the apprehension apparent amongst some providers can be addressed with education and based policies or protocols around family presence. | The physical setting, cultural and social norms will impact upon this outcome for families and providers. Cultural and social norms will play a large part in the acceptability of this intervention. |
| FeasibilityIs the intervention feasible to implement? |
| Judgement | Research evidence | Additional considerations |
| ○ No○ Probably no● Probably yes○ Yes○ Varies○ Don't know | Depending on the setting the feasibility varies. In the prehospital setting family presence is common and no action is needed. In the hospital setting the feasibility is dependent on resources and facilities.  | Cultural and social norms influence the attitudes of both families and providers. In some settings, it may not be feasible for this intervention to be implemented based on these factors which may take time to change, if there is a desire to do so. |

# Summary of judgements

|  | **Judgement** |
| --- | --- |
| **Problem** | No | Probably no | Probably yes | **Yes** |  | Varies | Don't know |
| **Desirable Effects** | Trivial | **Small** | Moderate | Large |  | Varies | Don't know |
| **Undesirable Effects** | Large | Moderate | Small | **Trivial** |  | Varies | Don't know |
| **Certainty of evidence** | **Very low** | Low | Moderate | High |  |  | No included studies |
| **Values** | Important uncertainty or variability | Possibly important uncertainty or variability | **Probably no important uncertainty or variability** | No important uncertainty or variability |  |  |  |
| **Balance of effects** | Favors the comparison | Probably favors the comparison | Does not favor either the intervention or the comparison | Probably favors the intervention | **Favors the intervention** | Varies | Don't know |
| **Resources required** | Large costs | **Moderate costs** | Negligible costs and savings | Moderate savings | Large savings | Varies | **Don't know** |
| **Certainty of evidence of required resources** | Very low | Low | Moderate | High |  |  | **No included studies** |
| **Cost effectiveness** | Favors the comparison | Probably favors the comparison | Does not favor either the intervention or the comparison | Probably favors the intervention | Favors the intervention | Varies | **No included studies** |
| **Equity** | Reduced | Probably reduced | Probably no impact | Probably increased | Increased | Varies | **Don't know** |
| **Acceptability** | No | Probably no | **Probably yes** | Yes |  | Varies | Don't know |
| **Feasibility** | No | Probably no | **Probably yes** | Yes |  | Varies | Don't know |

# Type of recommendation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strong recommendation against the intervention | Conditional recommendation against the intervention | Conditional recommendation for either the intervention or the comparison | Conditional recommendation for the intervention | Strong recommendation for the intervention |
| ○  | ○  | ○ | ●   | ○  |

# Conclusions

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| Recommendation |
|   We suggest  that family members be provided with the option to be present during in-hospital adult resuscitation from cardiac arrest. (weak recommendation; very low certainty of evidence)  We suggest  that family members be provided with the option to be present during out-of-hospital adult resuscitation from cardiac arrest acknowledging that providers are often not able to control this.  (weak recommendation; very low certainty of evidence)  Policies or protocols about family presence during resuscitation should be developed to guide and support healthcare professional decision-making. (Good Practice Statement)  When implementing family presence procedures,  healthcare providers should receive education about family presence during adult cardiac arrest resuscitation, including how to manage these stressful situations, family distress and their own responses to these situations. (good practice statement) |
| Justification |
| In making these recommendations, the Education, Implementation and Teams (EIT), the Basic Life Support (BLS), and the Advanced Life Support (ALS) Task Forces considered the following:* Some of the participants in these studies may have cultural, religious or other sociological factors that can influence their attitudes and behaviors regarding family presence during adult resuscitation. The Task Forces considered the overall findings on patient, family and provider outcomes excluding these factors because none of the included studies investigated them.
* There will be a need for resuscitation councils to adapt the treatment recommendations to their local environments to meet the cultural, religious and sociological expectations of family presence during adult cardiac arrest resuscitation.
* The practice context (out-of-hospital versus in-hospital) can vary significantly in terms of attitudes and experiences of family presence during resuscitation, however establishing the overall impact on patient, family and provider outcomes was considered more important than isolating the findings to one setting.
* The nature of the cardiac arrest requiring resuscitation, or the characteristics of the patient (i.e. younger versus older adult, precipitating illness/ condition) were not reported in the included studies. Therefore, the Task Forces considered the overall findings on patient, family and provider outcomes in the absence of this information. . The age of family members viewing resuscitation may require further consideration especially when they are less than 18 years of age.
* There were only two RCTs comprising between 100-630 participants but these trials contained some methodological limitations.6,42 Nonetheless, we acknowledge the difficulty in conducting an RCT in this setting where it would be unethical to stop a family member from being present or absent in these circumstances.
* In making the weak recommendations we considered the reported negative experiences of providers from a psychological and family management standpoint. However, we believe the implementation of provider education, and unit-based policies and protocols will address many of these issues.
* Provider education and unit-based policies or protocols were not directly examined in any of the studies, however two Good Practice Statements have been made based on the recommendations of the included studies and the absence of any evidence of harm.
* While none of the studies considered any other factors that may contribute to detrimental mental health outcomes following family witnessed resuscitation for family members or healthcare providers, there may be a need for education and/or structured follow-up regarding the possible long-term effects of witnessed resuscitation on these cohorts.
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| Subgroup considerations |
| As stated above, no consideration has been given to subgroups in arriving at the treatment recommendations, however future research should consider cultural, religious or other sociological factors as well as resourcing and setting factors. |
| Implementation considerations |
| * Cultural, religious or other sociological factors as well as practice context (out-of-hospital versus in-hospital) can influence attitudes and behaviors regarding family presence during adult resuscitation and these must be considered when implementing these Treatment Recommendations.
* The cost of policy or protocol development, education and resourcing (including staffing and infrastructure) must be considered when implementing the Treatment Recommendations.
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| Monitoring and evaluation |
| Following implementation of ‘family presence during resuscitation’ policies, ongoing monitoring of patient, family and healthcare provider outcomes should occur in order to ensure there is no detriment to any of these populations. This will allow for tailoring of provider educational opportunities and setting resourcing to ensure optimal outcomes. |
| Research priorities |
| Future research should focus on testing interventions such as provider training programs, use of family support persons and implementation of organisational guidelines and policies to reduce the individual decision burden, facilitate and operationalise care of families during adult resuscitation. |

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