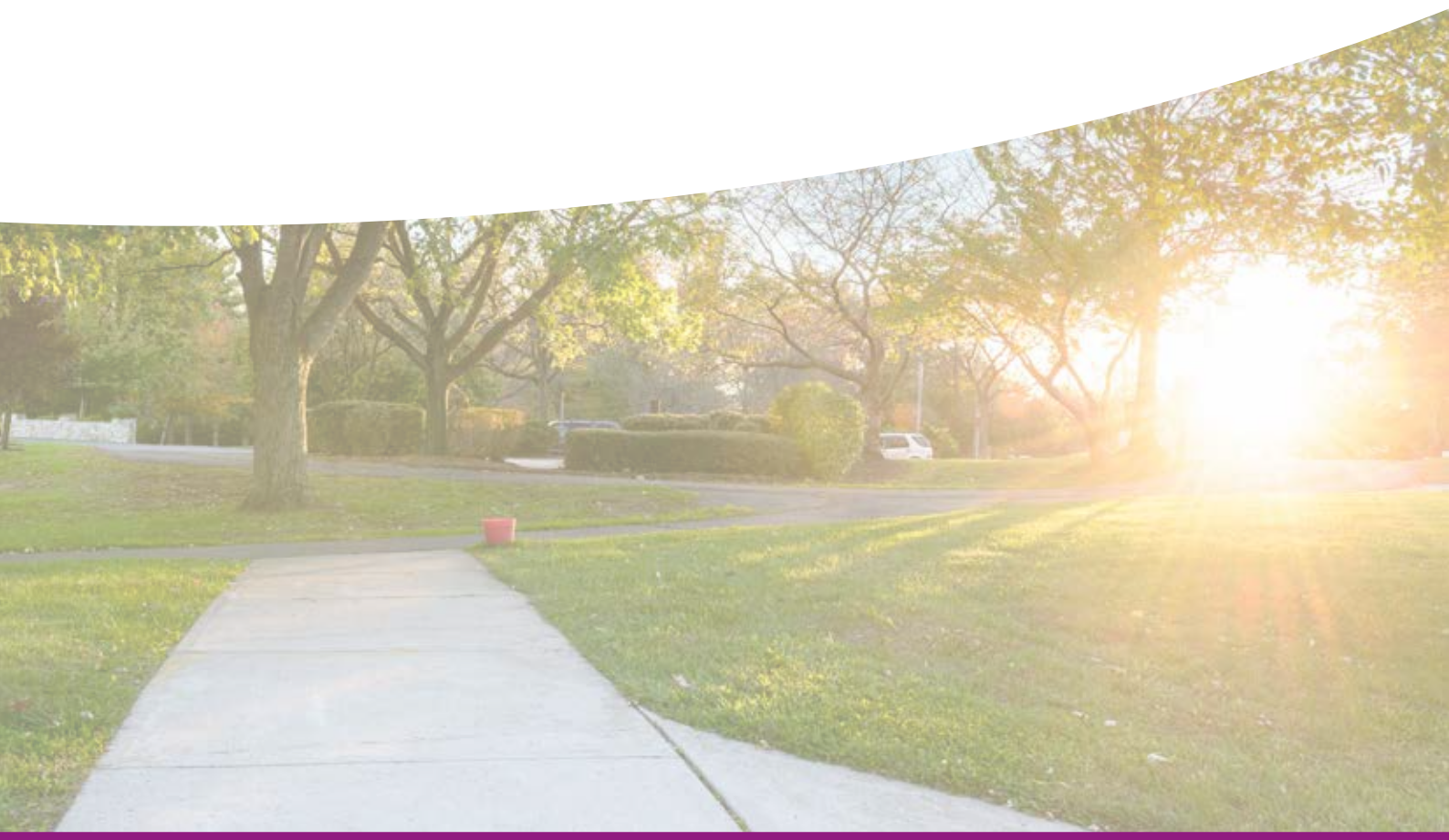
Intensive Care Society

Guidance On:

Transfer of Critically Ill Patients to the Outdoors



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Acknowledgments

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Introduction

A prolonged stay in critical care has far reaching consequences for the patient and their family, causing both long term physical and psychological consequences including (but not limited to) post-traumatic stress disorder, muscle loss, fatigue and anxiety.

Walking outside and feeling fresh air is something that we would normally experience daily. Observational research consistently shows a wide range of improve outcomes for both mental and physical health.[1] Patients who have prolonged stays in critical care frequently report the benefit in terms of recovery and mental health of spending time outside or in a space containing plants. As part of critical care humanisation, the process of transferring patients outside into a garden or other suitable area should become part of our routine practice. [2] [3]

Transfer of patients, particularly critically ill patients, is not without risk and it is important that transfers are both safe and done to high standards due to the risk of adverse events during transfer. Staff members should be appropriately trained, and equipment should be checked prior to transfer as equipment failure is consistently identified as the most common adverse event during transfer. [4] [5]

The purpose of this document is to provide staff with guidance on how to safely transfer patients into an outside environment with the aim to improve their quality of life and long-term outcomes.

Standards

This guidance must be used in conjunction with the Intensive Care Society guidance on: the Transfer of the Critically Ill Adult. [5]

Accompanying personnel and risk assessment

- Any staff escorting a critically ill patient outside must have appropriate (as deemed by their local trust) transfer training within their speciality. [6]
- The critical care consultant and nurse in charge must consent for the patient to go outside to ensure safety concerns are identified, and safety is maintained on the critical care unit and during the transfer.
- Prior to the transfer a risk assessment must be carried out to determine the level of risk to the patient, personnel required on transfer and the area being transferred too. This must be carried out by an experienced practitioner (who is transfer trained) prior to the transfer, and should take into account the following (appendix 1):
  - Patient's current clinical condition
  - Specific risks related to the condition e.g. patient with a tracheostomy
  - Risks related to movement/ transfer
  - Likelihood of deterioration during transfer
  - Potential for intervention during transfer
  - Duration and mode of transfer (e.g. bed/ chair/ wheelchair)
  - Location of outside environment – ability to return indoors/ protection from inclement weather
- Based on the risk assessment, the competencies of staff required to accompany the patient must be determined
  - Low risk patients – may only require a nurse or other registered practitioner and one other
  - Medium risk patients - may only require a nurse or other registered practitioner and one other
  - High risk patients – will require minimum 2 personnel one with advanced airway skills- (appendix 2)
- The patient must always be accompanied by at least 2 staff. [5]

Preparation for transport

- Personnel doing the transfer must familiarise themselves with the patient's medical history, current treatment and airway assessment.
- If transferring a ventilated patient onto a transport ventilator a period of stability must be achieved before the transfer is made.
- Patient's stability must be established otherwise the transfer must be aborted (except in special circumstances e.g. for end of life care).
- Personnel doing the transfer must ensure the outdoor space is appropriate for use, available and safe for the transfer of the patient.

Recommendations

Outdoor Environment

- Critical care units should look to the development of a specific environment for the use of critical care patients with appropriate electric, oxygen and suction supply in the future.
- The outdoor environment should be assessed prior to transfer for risk including effect of change in weather e.g. surfaces which may become slippery when wet.
- If transfer to an outdoor environment is not possible, a place where patients can view the outdoors should be considered.

Communication

- Patients and families should be informed beforehand of the transfer to the outside environment (accepting that on occasion this might not be possible).
- If the patient has the capacity to consent then transfer to the outdoor environment should be discussed with them.

Checklist

- A checklist should be used prior to each transfer to the outside environment to ensure that all necessary preparations have been completed (We recommend the use of appendix 1.) [8]

Patient Selection

- All patients should be considered for transfer to an outside environment.
- In particular, the following patients warrant transfer to an outside environment:
  - Patients with an expected length of stay greater than 2 days
  - Patients who have been or are delirious through their critical care admission (consideration should be taken for those patients who are highly agitated and it may not be safe to leave the critical care environment).
- When considering the following patients you should practice caution when transferring to an outdoor environment or consider waiting until such a time that their clinical condition might confer less risk.
  - High levels of respiratory support and unable to tolerate transfer to a transport ventilator
  - Haemodynamically unstable patients
  - Patients who are at high risk of becoming unstable during transfer for example;
  - Cardiac arrhythmia
  - High risk of airway obstruction e.g. high secretion load, regular sputum plugging
  - High risk of seizure

Equipment

- Should be prepared and checked as per the ‘Guidelines for Transfer of the Critically Ill’ [5] based on the risk assessment of the patient and destination of transfer.

Monitoring

- The minimum monitoring requirement for level 2 and 3 patients during transfer to the outside environment (except in clinical scenarios determined by a senior clinician) should be:
  - Continuous observation by a registered nurse or other registered practitioner
  - Cardiac rhythm monitoring (ECG)
  - Non-invasive blood pressure monitoring– with the capability to cycle regularly
  - Pulse oximetry
  - End tidal carbon dioxide for mechanically ventilated patients[5]

Safety

- All equipment should be securely placed to avoid dislodgement and injury to personnel or the patient during the transfer.
- Consideration of weather should be taken into account.
  - Patients should not be placed in direct sunlight
  - Appropriate sun protection should be used (sun block/ sun glasses/ sun hat).
  - If the weather is inclement protection for the patient should be available in the form of a shelter.
  - Outside temperature should be checked and appropriate warming (blankets/heat blankets) used to prevent patients becoming cold.

Background

This section summarises the evidence of health benefits that natural green spaces can bring to people. Potential health benefits of green spaces to the public are addressed first, followed by green spaces in hospitals and, finally in critical care specifically.

Over the last decade, numerous studies have explored the links between urban green space to public health and well-being. Access to green space may produce health benefits such as reduction in depression, stress, anxiety and chronic pain and may increase socialisation, confidence and sense of belonging. The theory that humans have an innate connection with nature and other life forms dates back to late 1900's (Wilson 1984). Since then, various studies have been conducted to explore the relationship between green space and health. Hartig [9] suggested four principles connecting nature or green space to health: improved air quality, enhanced physical activity, stress reduction, and greater social cohesion. Lachowycz & Jones [10] emphasized physical activity, engagement with nature and relaxation, and social activities and interactions important to maintain health and well-being. In a more recent study, Asell-burt and Feng [11] showed exposure to trees was associated with less psychological distress and better self-related general health. Spending time in green spaces and prescribing gardening instead of medication is gaining momentum in the public sector. It is predicted in the next 5 years, social prescribers working with the NHS will give out 900,000 gardening appointments a year.

Hospital healing gardens first made an appearance in the mid-1990s, when design was based on the designer's perspective rather than evidence or guidelines [12]. Since 2006, the American Institute of Architects and the Facilities guidelines have recommended the development of garden space in hospitals to allow for interaction with nature. Green spaces in hospitals are predominately made up of gardens and plants providing a space for patients, families and staff to passively or actively enjoy being surrounded by a natural environment. Healing gardens in different specialities can have a different design brief. For example paediatric patients require gardens with design features that children are highly familiar with; bright colours, artwork, sound of running water. In comparison, healing gardens designed for patients with cancer; avoid strong frequencies, place comfortable seating and provide plenty of shade. [13] Some specialist areas of care may have gardens that patients and families can interact with e.g. dementia care facilities and stroke rehabilitation centres [14]. Well-designed hospital healing gardens can reduce stress, improve clinical outcomes, provide opportunities for escape from stressful clinical settings, heighten patient/family/staff satisfaction, increase care quality, and consequently improve economic outcomes by reducing the costs of care [15].

Access to natural light has been defined as essential to the well-being of critical care patients and visitors in the Society of Critical Care Medicine (SCCM) guidelines for intensive care unit design [16]. Research in this field is limited with disparate findings. However benefits of rooms with a window include shorter hospital stay, less consumptions of analgesia [17], shorter critical care stay, and families reporting less sadness of their relative [18]. Families experience less stress [15] and critical care nurses less burnout [19] when they took breaks outside. Drawing on evidence from public green spaces and other hospital settings, exposure to greener environments is likely to reduce anxiety and stress, common psychological conditions which can develop as a response to a prolonged stay in critical care.

Appendix 1: Transfer to an outdoor space - checklist

Before the Transfer

Airway assessment complete	Y/N
Transfer risk assessment complete	Y/N
Duty Consultant approval	Y/N

Relevant Equipment

- Transfer bag Y/N
- Emergency drugs Y/N
- Sufficient Infusion drugs Y/N
- Appropriate PPE Y/N
- Monitoring (to include)
  - ET CO_2 Y/N
  - Pulse oximetry Y/N

If required:

- Portable ventilator Y/N
- Portable suction Y/N
- HME filter Y/N
- O2 Cylinder Y/N
- Mapleson C circuit Y/N
- Self inflating bag/valve/mask Y/N

Outdoor factors

Check does the patient need;

- Blankets?
- Sun protection (suncream/hat sunglasses)?
- Are they allowed food and drink?
- Is the outdoor space open and available?

Check weather prior to departure in case of changes

Ensure ability to contact unit case of emergency

After the transfer

- If transferred to portable ventilator original ventilator settings restored
- Check observations
- Remove extra blankets to prevent hyperthermia
- If any adverse events complete an incident form

Patient deteriorating or emergency situation

Consider movement to a place of safety

Insert nearest location to usual place of outdoors transfer _____

Summon help by 2222 call to switch stating type of emergency and location.

Inform Critical Care team of emergency

Assess patient and use interventions appropriate to skill set of those present

If patient deteriorates into cardiac arrest, dial 2222 and put out cardiac arrest call. Start CPR and support airway.

Appendix 2: Pre-transfer risk assessment form for determining staffing required [5]

Risk level	Staffing required
Low Risk	
Maintaining own airway FiO2 <0.4 Not requiring inotrope or vasopressor support	Nurse or clinical practitioner with appropriate competencies in transferring patients
Medium Risk	
Tracheostomy patient not requiring ventilatory support FiO2 <0.4 Not requiring inotrope or vasopressor support	Nurse or clinical practitioner with appropriate competencies in transferring patients
High Risk	
Tracheostomy or intubated patient requiring ventilatory support Requiring low dose inotrope or vasopressor support < 0.2mg/kg/min	Nurse of clinical practitioner with appropriate competencies in transferring patients **Plus** Doctor or advanced practitioner with appropriate competencies in transferring patients

References

(1) Buck D . Gardens and health: Implications for policy and practice. The Kings Fund 2016.

(2) Igeño-Cano JC. Benefits of walks in the outdoor gardens of the hospital in critically ill patients, relatives and professionals. #healingwalks. Medicina Intensiva (English Edition) .

(3) Nin Vaeza N, Martin Delgado MC, Heras La Calle G. Humanizing Intensive Care: Toward a Human-Centered Care ICU Model. Crit Care Med 2020;48(3).

(4) Fanara B, Manzon C, Barbot O, Desmettre T, Capellier G. Recommendations for the intra-hospital transport of critically ill patients. Crit Care 2010;14(3):R87-R87.

(5) The Intensive Care Society and the Faculty of Intensive Care Medicine. Guidance on: the Transfer Of The Critically Ill Adult. 2019.

(6) Cook C, Allan C. Are Trainees Equipped to Transfer Critically Ill Patients? Journal of the Intensive Care Society 2008 07/01; 2020/07;9(2):145-147.

(7) Van Zwanenberg G, Dransfield M, Juneja R, and for North West London Critical,Care Network. A consensus to determine the ideal critical care transfer bag. Journal of the Intensive Care Society 2016 11;17(4):332-340.

(8) Ash A, Whitehead C, Hughes B, Williams D, Nayyar V. Impact of a transport checklist on adverse events during intra-hospital transport of critically ill patients. Australian Critical Care 2015 02/28;28.

(9) Hartig T, Mitchell R, de Vries S, Frumkin H. Nature and Health. Annu Rev Public Health 2014 03/18; 2021/02;35(1):207-228.

(10) Lachowycz K, Jones A. Towards a better understanding of the relationship between greenspace and health. Landscape Urban Plann 2013 10;118:62-69.

(11) Astell-Burt T, Feng X. Association of Urban Green Space With Mental Health and General Health Among Adults in Australia. JAMA Netw Open 2019;2(7):e198209-e198209.

(12) Paraskevopoulou AT, Kamperi E. Design of hospital healing gardens linked to pre- or post-occupancy research findings. Frontiers of Architectural Research 2018 September 2018;7(3):395-414.

(13) Busa K. The Designer becomes the Patient. Landscape Architecture Magazine 2013;103(6):114-118.

(14) Söderback I, Söderström M, Schälander E. Horticultural therapy: the ‘healing garden’and gardening in rehabilitation measures at Danderyd Hospital Rehabilitation Clinic, Sweden. Pediatr Rehabil 2004 Oct-Dec;7(4):245-260.

(15) Ulrich RS, Cordoza M, Gardiner SK, Manulik BJ, Fitzpatrick PS, Hazen TM, et al. ICU Patient Family Stress Recovery During Breaks in a Hospital Garden and Indoor Environments. HERD 2020 Apr;13(2):83-102.

(16) Thompson DR, Hamilton DK, Cadenhead CD, Swoboda SM, Schwindel SM, Anderson DC, et al. Guidelines for intensive care unit design. Crit Care Med 2012 May;40(5):1586-1600.

(17) Ulrich RS. View through a window may influence recovery from surgery. Science 1984 Apr 27;224(4647):420-421.

(18) Chiu W, Chang P, Hsieh C, Chao C, Lai C. The impact of windows on the outcomes of medical intensive care unit patients. International Journal of Gerontology 2018 March 2018;12(1):67-70.

(19) Cordoza M, Ulrich RS, Manulik BJ, Gardiner SK, Fitzpatrick PS, Hazen TM, et al. Impact of Nurses Taking Daily Work Breaks in a Hospital Garden on Burnout. Am J Crit Care 2018 Nov;27(6):508-512.

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