

APPENDIX 18: HEALTH ECONOMIC EVIDENCE – EVIDENCE TABLES

Modifications to the environment 2
Rapid tranquillisation / pharmacological management..... 3
During and post event..... 4
Children and young people – non-pharmacological management..... 5

Modifications to the environment

Reference to included study:

Nanda U, Eisen S, Zadeh RS, Owen D. Effect of visual art on patient anxiety and agitation in a mental health facility and implications for the business case. Journal of Psychiatric and Mental Health Nursing. 2011;18:386-93.

Study ID Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost effectiveness	Comments
Nanda et al, 2011 US Cost effectiveness analysis	Art interventions were placed on a main focus-wall for between 16 and 19 days in the lounge where service users (inpatients) gathered daily to eat, participate in art activities, watch televisio, or engage with their respective visitors. There were 3 distinct art conditions: (1) abstract, (2) abstract representational, (3) realistic (nature) Standard care defined as ‘no art’ condition lasting for 21 days	<u>Population:</u> Female service users ranging from 18-65 years; psychiatric unit <u>Study design:</u> Prospective observational study <u>Source of effectiveness data:</u> Observational study <u>Source of resource-use estimates:</u> Observational study <u>Source of unit costs:</u> Local sources	<u>Costs:</u> Medication, registered nurse, doctor, pharmacist, security, psychiatric technician. Intervention art was donated and not costed. Annual cost of pro re nata incidents for hospital (excluding intervention costs which were donated): Abstract: \$7,211 Abstract representational: \$6,634 Realistic (nature): \$3,183 Standard care: \$7,931 <u>Primary outcomes:</u> Pro re nata incidents avoided compared with standard care: Abstract: 9% (p=0.73) Abstract representational: 16% (p=0.53) Realistic (nature): 60% (p=0.032)	<u>Cost effectiveness:</u> Standard care dominated by all three interventions Realistic (nature) installation dominant over both abstract and abstract-representational installations	<u>Perspective:</u> Hospital <u>Currency:</u> US\$ <u>Cost year:</u> Unclear <u>Time horizon:</u> 1 year <u>Discounting:</u> N/A <u>Applicability:</u> Partially applicable <u>Quality:</u> Very serious limitations

Rapid tranquillisation / pharmacological management

Reference to included study:

Freeman DJ, DiPaula BA, Love RC. Intramuscular haloperidol versus intramuscular olanzapine for treatment of acute agitation: a cost-minimization study. *Pharmacotherapy*. 2009;29:930-06.

Study ID Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost effectiveness	Comments
Freeman and colleagues (2009) US Cost effectiveness analysis	Intramuscular haloperidol (monotherapy or with lorazepam, diphenhydramine or both) versus intramuscular olanzapine (with lorazepam, diphenhydramine or benzatropine)	<p><u>Population:</u> People with episodes of violence or aggression; state psychiatric hospital</p> <p><u>Study design:</u> Retrospective medical record review</p> <p><u>Source of effectiveness data:</u> Retrospective medical record review (n=53)</p> <p><u>Source of resource use estimates:</u> Retrospective medical record review (n=53)</p> <p><u>Source of unit costs:</u> Local sources</p>	<p><u>Costs:</u> Medication</p> <p>Cost of treating an episode of agitation: Haloperidol \$4.06 (SD: \$3.98) Olanzapine \$27.84 (SD: \$10.40)</p> <p><u>Outcomes:</u> Subjective measure of effectiveness as judged by nurses: Haloperidol: effective in 62% doses Olanzapine: effective in 49% doses</p> <p>Seclusion and/or restraint needed: Haloperidol: 59% of patients Olanzapine: 58% of patients</p> <p>Repeat doses of psychotropics needed: Haloperidol: 41% of patients Olanzapine: 69% of patients</p>	<p><u>Cost effectiveness:</u> Haloperidol dominant as it has lower cost and better or equivalent outcomes compared with olanzapine</p> <p><u>Sensitivity analyses:</u> None</p>	<p><u>Perspective:</u> Hospital</p> <p><u>Currency:</u> US\$</p> <p><u>Cost year:</u> 2009</p> <p><u>Time horizon:</u> Episode based approach</p> <p><u>Discounting:</u> N/A</p> <p><u>Applicability:</u> Partially applicable</p> <p><u>Quality:</u> Very serious limitations</p>

During and post event

Post incident management

Reference to included study:

NICE. Violence: The short-term management of disturbed/violent behaviour in in-patient psychiatric settings and emergency departments. Clinical guideline 25. NICE: London; 2005. [Full guideline]

Study ID Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost effectiveness	Comments
NICE (2005) UK Cost utility analysis	Advanced life-support training for resuscitation Basic life-support training	<u>Population:</u> Service users with cardiac events in response to rapid tranquilisation <u>Study design:</u> Decision analytic modelling <u>Source of effectiveness data:</u> Guideline Development Group opinion and literature search, strategy not reported. <u>Source of resource use estimates:</u> Literature search, strategy not reported. <u>Source of unit costs:</u> Not reported	<u>Costs:</u> Equipment, staff, training costs, post resuscitation care, nursing home Economic cost of advanced training: £29,576 <u>Outcomes:</u> Survival rate; increased quality-of-life years from advanced training: 1.24	<u>Cost effectiveness:</u> Advanced life-support is not cost effective at the £20,000/quality of life year threshold <u>Sensitivity analyses:</u> Results are sensitive to changes in assumptions about survival, training costs, staffing and equipment costs	<u>Perspective:</u> National Health Service and personal social services <u>Currency:</u> GB£ <u>Cost year:</u> 2005 <u>Time horizon:</u> 7 years <u>Discounting:</u> 3% <u>Applicability:</u> Directly applicable <u>Quality:</u> Very serious limitations

Children and young people – non-pharmacological management

Reference to included study:

LeBel J, Goldstein R. The economic cost of using restraint and the value added by restraint reduction or elimination. *Psychiatric services*. 2005;56:1109-14.

Study ID Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost effectiveness	Comments
LeBel & Goldstein, 2005 US Cost effectiveness	<u>Intervention:</u> Restraint reduction initiative <u>Comparator:</u> Mechanical, physical, medication-based, and medication-combination restraint	<u>Population:</u> Young people aged 13 to 18 years in an inpatient psychiatric facility <u>Study design:</u> Before-and-after design <u>Source of effectiveness data:</u> Before-and-after design <u>Source of resource use estimates:</u> Before-and-after design <u>Source of unit costs:</u> Local sources	<u>Costs:</u> Staff time and medication Annual costs: Pre-intervention: \$1,446,740 Post-intervention: \$117,036 Difference: -\$1,329,704 <u>Primary outcome measure:</u> Number of restraint episodes: Pre-intervention: 3,991 Post-intervention: 373 Difference: -3,618	<u>Cost effectiveness:</u> Intervention dominant <u>Sensitivity or statistical analysis:</u> None	<u>Perspective:</u> Hospital <u>Currency:</u> US\$ <u>Cost year:</u> 2003 <u>Time horizon:</u> 12 months <u>Discounting:</u> N/A <u>Applicability:</u> Partially applicable <u>Quality:</u> Potentially serious limitations