Table E3. Detailed study characteristics: Multimodal interventions

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| Author, Year  Study Design  Clinical Setting, Country  Trial (if Named) | Duration of Non-Pharma-Cologic Interventions for Patients | N of Patientsa  Duration of Entire Study From Baseline Through Follow-up | Intervention(s) and Comparator(s) | Funding Source | Brief summary of Population | Age: Mean (SD)  Percent Female  Percent Non-White | Psychiatric Diagnoses (%) | Mean (SD) Severity of Psychiatric Symptoma-tology |
| Bowers et al., 20067  Single-group pre/post study  Acute admission psychiatric wards (n=14) (private or public status NR), U.K. | NR | NR  One year | G1: Nurse intervention  G2: Before intervention | Foundation/ non-profit | NR | NR | NR | NR |
| Bowers et al., 20088  Single-group pre/post study  Acute admission psychiatric wards (n=3) (private or public status NR),b U.K. | NR | NR  15 to 19 monthsc | G1: Nurse intervention (3 units)  G2: Before interventiond | Foundation/ non-profit | NR | NR | NR | NR |
| Currier et al., 20029  Single-group pre/post study  Academic psychiatric hospital, U.S. | NR | NR  6 months (3 months pre and 3 months post) | G1: HCFA One-hour rule: Assessment within one hour of initiation of S/R  G2: Pre-intervention | NR | Three eligible psychiatric units in a University hospital, one unit medically ill chemical-abusing, second unit general adult, third is neurogeriatric | NR | NR | NR |

Table E3. Detailed study characteristics: Multi-modal interventions (continued)

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| Author, Year  Study Design  Clinical Setting, Country  Trial (if Named) | Duration of Non-Pharma-Cologic Interventions for Patients | N of Patientsa  Duration of Entire Study From Baseline Through Follow-up | Intervention(s) and Comparator(s) | Funding Source | Brief summary of Population | Age: Mean (SD)  Percent Female  Percent Non-White | Psychiatric Diagnoses (%) | | Mean (SD) Severity of Psychiatric Symptoma-tology |
| D’Orio et al., 200410  Single-group pre/post study  Psychiatric emergency service, U.S. | 9 months | 484  18 months (9 months pre and 9 months post | G1: Comprehensive Plan focusing on the early identification and management of problematic behaviors  G2: Pre-intervention | NR | Walk-ins, brought by law enforcement, city jail, mobile crisis team – no other information provided | NR | | Substance use disorders: 35e  Psychotic disorders: 25e  Unipolar mood disorders: 13e  Bipolar disorders: 11e  Adjustment disorders: 6e  Anxiety disorders: 2e  Other: 8e | NR |
| Emmerson et al., 200711  Single-group pre/post study  Mental Health Services - part of Royal Brisbane and Women's Hospital, refers to wards, Australia | 29 months | NR  29 months | G1: 4T Aggression Management Strategy  G2: Pre-intervention | NR | NR, but of those with aggression, they were usually adult, male, manic, of no fixed abode, abusing amphetamines and had no previous psychiatric history; and admitted on weekend | NR | NR | | NR |

Table E3. Detailed study characteristics: Multi-modal interventions (continued)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year  Study Design  Clinical Setting, Country  Trial (if Named) | Duration of Non-Pharma-Cologic Interventions for Patients | N of Patientsa  Duration of Entire Study From Baseline Through Follow-up | Intervention(s) and Comparator(s) | Funding Source | Brief summary of Population | Age: Mean (SD)  Percent Female  Percent Non-White | Psychiatric Diagnoses (%) | Mean (SD) Severity of Psychiatric Symptoma-tology |
| Forster et al., 199912  Single-group pre/post study  Urban inpatient psychiatric hospital (Psychiatric Emergency Service and four locked inpatient wards), U.S. | 12 months | 5570f  24 months (12 pre and 12 post) | G1: Hospital-wide quality improvement effort combining hospital S&R policy review, staff training (including staff experiencing restraint firsthand), regular discussion of S&R on units, and hospital-wide publicity of effort  G2: Usual care | NR | Adult patients all evaluated in the Psychiatric Emergency Service or admitted for inpatient treatment | NR | NR | NR |
| Hellerstein et al., 200713  Single-group pre/post study  Public psychiatric hospital(s), U.S | 268 weeks; 67 months which is closer to 290 weeks because more than 4 weeks in a month | NR  348 weeks (pre-intervention); 87 months or about 377 weeks (post-intervention) | G1: Hospital-wide, multicomponent intervention  G2: Pre-intervention | NR | Adult patients admitted to the Washington Heights Community Service clinical unit for acute inpatient care, most with diagnoses of schizophrenia, schizoaffective disorders, and mood disorders, such as depression and bipolar disorder g | Age: NR  Percent female:  G1: NR  G2: 46 for WHCS unit  Percent non-white:  G1: NR  G2: 88 for WHCS unit | NR, but "schizophrenia, schizoaffective, and mood disorders listed as most common" | NR |

Table E3. Detailed study characteristics: Multi-modal interventions (continued)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year  Study Design  Clinical Setting, Country  Trial (if Named) | Duration of Non-Pharma-Cologic Interventions for Patients | N of Patientsa  Duration of Entire Study From Baseline Through Follow-up | Intervention(s) and Comparator(s) | Funding Source | Brief summary of Population | Age: Mean (SD)  Percent Female  Percent Non-White | Psychiatric Diagnoses (%) | Mean (SD) Severity of Psychiatric Symptoma-tology |
| Jonikas et al., 200414  Single-group pre/post study  Public university hospital, U.S. | 18 months | NR  30 months | G1: Program to Reduce Restraints (15 months)  G2: Before intervention (15 months) | Govern-ment | Majority had schizophrenia, other psychotic disorders or mood disorders, about half were white, about half were female, age NR | Age: NR  Percent female  57% on general ward; 46% on research unit  Percent non-white  58% on general ward; 54% on research unit | Schizophrenia or other psychotic disorders: 21% on general ward; 52% on research unit  Mood disorders: 79% on general ward; 43% on research unit | NR |
| Khadivi et al., 200415  Single-group pre/post study  Private/academic psychiatric hospital(s), U.S. | 12 months | NR  12 months | G1: JCAHO standards (date NR)  G2: Pre-intervention | NR | NR, patients in the hospital tend to be poor, are insured primarily through Medicaid or Medicare, tend to have severe and persistent mental illness, most often in the context of dual diagnosis, and are frequently admitted involuntarily | NR | NR | NR |

Table E3. Detailed study characteristics: Multi-modal interventions (continued)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year  Study Design  Clinical Setting, Country  Trial (if Named) | Duration of Non-Pharma-Cologic Interventions for Patients | N of Patientsa  Duration of Entire Study From Baseline Through Follow-up | Intervention(s) and Comparator(s) | Funding Source | Brief summary of Population | Age: Mean (SD)  Percent Female  Percent Non-White | Psychiatric Diagnoses (%) | Mean (SD) Severity of Psychiatric Symptoma-tology |
| Melson et al., 201416  Single-group pre/post study  General medical hospital, U.S. | NA | 462  54 months (228 weeks) | G1: Alcohol Withdrawal Symptom Management Care Management Guideline  G2: Pre-implementation of guideline | Internal funding only | Adult medical inpatients with alcohol withdrawal syndrome | NR | NR | NR |
| Pollard et al., 200717  Single-group pre/post study  Public psychiatric hospital(s), U.S. | 18 months | NR  18 months | G1: JCAHO 2000 standards  G2: Pre-intervention | Government | NR, but voluntary and involuntary patients in a secured, acute mental health unit | NR | NR | NR |

a Total number of randomized or enrolled participants at baseline in relevant arms of trial.

b Two units (Wards 3 and 4) originally accepted into the project, but Ward 4 was removed from the project during the intervention period and replaced by a third unit, Ward 5.8

c Entire study duration varied by intervention units because of differing intervention periods. The intervention period for 12 months for Ward 3, nine months for Ward 4, and three months for Ward 5.8

d Primary outcomes of interest (i.e., aggressive behavior, use of seclusion, use of restraint) not evaluated in control units, and therefore only the pre/post analysis of outcomes in intervention wards reported here.8

e Only overall sample means provided.10

f Reflects total number of admissions during the course of the study, but unclear how many of these admissions were for patients being readmitted to the study hospital.12

g Only patients from the Washington Heights Community Service clinical unit were eligible for this review because the average LOS was well below 35 days.13

G = group; HCFA = Health Care Financing Agency; JCAHO = Joint Commission on Accreditation of Healthcare Organizations; n/N = number; NR = not reported; S&R = seclusion and restraint; SD = standard deviation; SRU = Schizophrenia Research Unit; U.K. = United Kingdom; U.S. = United States; WHCS = Washington Heights Community Service.