Implementation of a violence risk assessment tool on a safety-net inpatient psychiatry unit

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LETTER TO THE EDITOR:

Violence on inpatient psychiatry units is a continuing concern with reduced financing of public mental health systems [1, 2]. For example, of the 1,500 people admitted annually to the Zuckerberg San Francisco General Hospital (ZSFG) inpatient psychiatry unit, approximately 25% have a history of violence [3]. However, there is limited information to guide inpatient administrators on feasible means to reduce violence risk. The objective of this study was to develop a decision support tool for patients with violence risk factors. Secondary objectives included feasibility of its implementation on an inpatient psychiatry unit, and preliminary evidence of violence reduction.

To develop the decision support tool, we used a seven question subset of the Historical Clinical Risk-20 (HCR-20) as a framework, along with expert consultation and literature review, linking each question to evidenced-based suggestions for pharmacological interventions [4–9] (**see** eFigure 1). In addition, because nicotine replacement therapy has been shown to reduce aggression in acute settings [10], we added an additional item. We assumed reliability and validity of the new tool based on prior studies finding an association between the HCR-20 clinical subset and inpatient violence risk; however, we did not complete an independent assessment after our modifications.

The tool was integrated into an admission packet used by thirteen inpatient psychiatrists from January through March 2014 with a goal of assessing all patients admitted to the unit. Implementation strategies (stakeholder engagement, top leadership support, champion, etc.) were used to maximize the likelihood of success.

During this 3-month pilot period, we collected data on several measures of violence, including patient-on-staff assaults, patient-on-patient assaults, seclusion and restraint,

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utilization of emergent intramuscular medications, and use of nicotine patches. An "assault" was defined as direct body contact by another patient with an intended victim. Each assault was reported and staff conducted a thorough review of each incident. The Health Record Data Service (THREDS) of the UCSF Clinical and Translational Science Institute (CTSI) provided de-identified demographic data on patients admitted to the inpatient unit. As a control group, we obtained similar data from the same inpatient unit exactly one year prior. All patients admitted to the unit in the intervention and control periods were eligible for the study (N=516), however the lack of linked data limited our assessment of confounding variables for outcome measures. Chi-square and t-test statistics were used to examine the demographic data, measures of violence, and use of medications.

The total number of patients admitted during the intervention period was 340. The population was predominantly male (67%) with an average age of 40 years (range 19–85). The racial and ethnic breakdown of admitted patients during the intervention was 39% Caucasian, 24% African American, 15% Hispanic, 15% Asian, and 7% other (**see** Table 1). A breakdown of primary diagnoses yielded 69% psychotic disorders (including schizophrenia and schizoaffective disorder), 10% bipolar disorder, 19% other mood disorders, and 2% other disorders. Aside from differences in prevalence of anxiety disorders, there were no significant differences in age, gender, race/ethnicity, or other diagnoses between the control and intervention periods.

Of all admitted patients during the intervention prior, there was a mean completion rate of the decision support instrument of 57%. The average completion rater per psychiatrist was 15.9 (SD=12.9, Range 0–40).

There was a significant decrease in the use of emergent IM medications (4.4% intervention vs. 8.1% control, p=0.032), and a significant increase in nicotine replacement treatment (14.1% intervention vs. 8.5% control, p=0.010). There were no significant differences in assault (2.9% vs 1.4%, ns).

Our study found that it was feasible to implement a violence decision support tool on an inpatient psychiatry unit. While we did find a significant decrease in assaults, this may be because assaults are rare events. Notably, our preliminary findings indicate a decrease in emergent IM medication use and an increase in nicotine replacement treatment, which has been linked to reduced aggression in acute settings [10].

Limitations include one study site and closure of one of the three inpatient units between the end of the control and start of the pilot period. Also, as population data was de-identified prior to analysis, assessing the impact on individuals and vulnerable subpopulations was not possible.

Implementation of a decision support tool to reduce violence that was linked to evidence-based pharmacological treatment is feasible on inpatient psychiatry units. Although there was no impact upon assaults in this feasibility study, future randomized trials should be considered to assess the efficacy of this instrument in reducing violence on inpatient psychiatry.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

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Table 1:

Demographic and diagnostic information about the study population

	Control (N=516)	Intervention (N=340)	P Value
Age in Years, mean (range)		ns	
	40y (19–85)	40y (19–85)	ns
Sex			ns
Male	352 (68%)	229 (67%)	
Female	164 (32%)	111 (33%)	
Race/Ethnicity			ns
White	202 (39%)	133 (39%)	
African Amer.	135 (26%)	81 (24%)	
Hispanic	68 (13%)	50 (15%)	
Asian	64 (13%)	52 (15%)	
Other	47 (9%)	24 (7%)	
Psychiatric Diagnoses			p=0.027
Schizophrenia	348 (68%)	233 (69%)	
Bipolar Disorder	38 (7%)	35 (10%)	
Other Mood Disorders	98 (19%)	65 (19%)	
Anxiety Disorder	7 (1%)	0 (0%)	
Other	25 (5%)	7 (2%)	