



Inpatient Volume and Quality of Mental Health Care Among Patients With Unipolar Depression

Line Ryberg Rasmussen, R.N., M.H.Sc., Jan Mainz, M.D., Ph.D., Mette Jørgensen, Ph.D., Poul Videbech, M.D., Ph.D., Søren Paaske Johnsen, M.D., Ph.D.

Objective: The relationship between inpatient volume and the quality of mental health care remains unclear. This study examined the association between inpatient volume in psychiatric hospital wards and quality of mental health care among patients with depression admitted to wards in Denmark.

Methods: In a nationwide, population-based cohort study, 17,971 patients (N=21,120 admissions) admitted to psychiatric hospital wards between 2011 and 2016 were identified from the Danish Depression Database. Inpatient volume was categorized into quartiles according to the individual ward's average caseload volume per year during the study period: low volume (quartile 1, <102 inpatients per year), medium volume (quartile 2, 102–172 inpatients per year), high volume (quartile 3, 173–227 inpatients per year) and very high volume (quartile 4, >227 inpatients per year). Quality of mental health care was assessed by receipt of process performance

measures reflecting national clinical guidelines for care of depression.

Results: Compared with patients admitted to low-volume psychiatric hospital wards, patients admitted to very-high-volume wards were more likely to receive a high overall quality of mental health care ($\geq 80\%$ of the recommended process performance measures) (adjusted relative risk [ARR]=1.78, 95% confidence interval [CI]=1.02–3.09) as well as individual processes of care, including a somatic examination (ARR=1.35, CI=1.03–1.78).

Conclusions: Admission to very-high-volume psychiatric hospital wards was associated with a greater chance of receiving guideline-recommended process performance measures for care of depression.

Psychiatric Services in Advance (doi: 10.1176/appi.ps.201700426)

INPATIENT VOLUME AND QUALITY OF
MENTAL HEALTH CARE AMONG PATIENTS
WITH UNIPOLAR DEPRESSION

Higher Stroke Unit Volume Associated With Improved Quality of Early Stroke Care and Reduced Length of Stay

Marie Louise Svendsen, MHS, PhD; Lars Holger Ehlers, MSc(Econ), PhD;
Annette Ingeman, MHS, PhD; Søren Paaske Johnsen, MD, PhD

Is Bigger Always Better? A Nationwide Study of Hip Fracture Unit Volume, 30-Day Mortality, Quality of In-Hospital Care, and Length of Hospital Stay

Pia K. Kristensen, MHS, Theis M. Thillemann, MD, PhD,* and Søren P. Johnsen, MD, PhD†*

Admission Volume and Quality of Mental Health Care Among Danish Patients With Recently Diagnosed Schizophrenia

Mette Jørgensen, R.N., M.H.Sc., Jan Mainz, M.D., Ph.D., Søren Paaske Johnsen, M.D., Ph.D.



OBJECTIVE

- To examine the association between inpatient volume of psychiatric hospital wards and the quality of mental health care, as reflected by the receipt of specific guideline-based processes of care among patients with depression admitted to Danish hospitals.



DANISH DEPRESSION DATABASE

Measure	Definition
Examination by psychiatrist	Psychopathological assessment performed by a specialist in psychiatry within 7 days after admittance to the hospital ward
Somatic examination	Neurological examination, relevant laboratory tests, and other examinations within 2 days of admission to the hospital ward
Assessment by a social worker	Assessment by a social worker for need for acute or longer-term support, such as help with changing housing, financial help to purchase medicine, educational guidance, rehabilitation, and application for disability benefits
HAM-D assessment within 7 days ^a	Initial assessment with HAM-D17 within 7 days of admission
HAM-D assessment at discharge ^a	Assessment with HAM-D17 upon discharge
Suicide risk assessment at admission	Assessment of risk of suicide with a structured interview upon admission
Suicide risk assessment at discharge	A clinicians assessment of risk of suicide when discharge from the hospital is planned
Contact with relatives	Staff contact with the patient's relatives during hospitalization
Psychiatric aftercare	Concrete agreement involving professional support for inpatients after discharge

^aHAM-D, 17-item Hamilton Depression Rating Scale



METHODS

- Study population
 - All patients ages 18 and older
 - Depression was defined according to the ICD-10 (codes F32.0-F32.99, F33.0-F33.99, F34.1, and F06.32)
 - 17,971 inpatients with 21,120 admissions
- Inpatient volume was divided into four quartiles
 - Low volume: <102 inpatients per year
 - Medium volume: 102-172 inpatients per year
 - High volume: 173-227 inpatients per year
 - Very high volume: >227 inpatients per year



STATISTICAL ANALYSES

- The quality of mental health care was measured by the receipt of process performance measures of care for each admission
- High overall quality of care was defined as a patient's receipt of $\geq 80\%$ of all relevant recommended process performance measures
- For quality of care, alternative cut off points were used varying from 60% to 90%



RESULTS

Association between psychiatric ward inpatient volume and receipt of high-quality mental health care among patients with depression

Inpatient volume ^a	Total inpatients	Received high-quality care (%) ^b	RR ^c	95% CI
Medium	4,870	16	1.37	0.76-2.46
High	5,336	19.6	1.72	0.80-3.69
Very high	5,337	21	1.78	1.02-3.09

^aData are reported in number of admissions (N=21,120). Reference group, low inpatient volume (N=5,577)

^bReceived $\geq 80\%$ of relevant recommended process performance measures

^cRelative risk. Adjusted for gender and age



Inpatient Volume and Quality of Mental Health Care Among Patients With Unipolar Depression

Line Ryberg Rasmussen, R.N., M.H.Sc., Jan Mainz, M.D., Ph.D., Mette Jørgensen, Ph.D., Poul Videbech, M.D., Ph.D., Søren Paaske Johnsen, M.D., Ph.D.

Objective: The relationship between inpatient volume and the quality of mental health care remains unclear. This study examined the association between inpatient volume in psychiatric hospital wards and quality of mental health care among patients with depression admitted to wards in Denmark.

Methods: In a nationwide, population-based cohort study, 17,971 patients (N=21,120 admissions) admitted to psychiatric hospital wards between 2011 and 2016 were identified from the Danish Depression Database. Inpatient volume was categorized into quartiles according to the individual ward's average caseload volume per year during the study period: low volume (quartile 1, <102 inpatients per year), medium volume (quartile 2, 102–172 inpatients per year), high volume (quartile 3, 173–227 inpatients per year) and very high volume (quartile 4, >227 inpatients per year). Quality of mental health care was assessed by receipt of process performance

measures reflecting national clinical guidelines for care of depression.

Results: Compared with patients admitted to low-volume psychiatric hospital wards, patients admitted to very-high-volume wards were more likely to receive a high overall quality of mental health care ($\geq 80\%$ of the recommended process performance measures) (adjusted relative risk [ARR]=1.78, 95% confidence interval [CI]=1.02–3.09) as well as individual processes of care, including a somatic examination (ARR=1.35, CI=1.03–1.78).

Conclusions: Admission to very-high-volume psychiatric hospital wards was associated with a greater chance of receiving guideline-recommended process performance measures for care of depression.

Psychiatric Services in Advance (doi: 10.1176/appi.ps.201700426)