• R. Kathol: From Medical Psychiatry Units to Complexity Intervention Units: 1980 to 2020, 30 years of complexity care
• P. Caarls, et al.: Factors influencing the admission decision for Complexity Intervention Units: A concept mapping approach
• M. van Schijndel, et al.: Identifying value-based quality indicators for general hospital psychiatry
• L. Jansen, et al.: Costs versus effects on a Complexity Intervention Unit (CIU)
• D. Coira, et al.: Integrated Medical Psychiatric Units are cost effective and improve quality of care

**Theme**
Organization and cost-effectiveness of Complexity Intervention Units (formerly known as Med-Psych Units).

**Takeaways**
1) You will know the reason for establishment and history of CIUs worldwide, 2) You will learn about the organization of CIUs in the Netherlands [van Schijndel et al. 2018] and the United States [unpublished data], 3) We will present our unpublished research into the clinical decision to admit patients to a CIU [Caarls, van Schijndel et al. 2019, submitted], 4) You will learn about value-based quality indicators in general hospital psychiatry (including CIUs) that have been developed in the Netherlands [van Schijndel et al. 2018], and 5) You will learn about recent research on the (cost-)effectiveness of MPUs [Jansen et al. 2019, submitted]. Within the symposium there will be sufficient room for discussion about the future of research into CIUs, in particular about organization, practice variation, value, costs and effects.

**Chair:** Maarten van Schijndel Psychiatrist Rijnstate / Erasmus MC NL

**Co-chair:** Roger Kathol Internist and Psychiatrist Cartesian Solutions US
From Medical Psychiatry Units to Complexity Intervention Units: 1980 to 2020

Aim
To summarize the growth and development of complexity intervention units that transition psychiatric care into the medical setting

Methods
To share information about the transition of psychiatry units with some medical capabilities (1980) into medical units with full psychiatric capabilities (today)

Results
In 1980, there were 6 medical psychiatry units in the US of which only one was capable of addressing acute inpatient "medical" problems. International health systems have now demonstrated that patients with active but ineffectively treated concurrent medical and psychiatric illnesses have poor medical and BH outcomes and cost twice as much as those without. This has led to a substantial increase in the number of complexity intervention units (CIUs), i.e., medical inpatient units with full psychiatric capabilities. For instance, in the Netherlands, 24 type IV CIUs now provide for the needs of comorbid patients as a part of a national health mandate.

Conclusion
Health systems now recognize that untreated/ineffectively treated concurrent medical and BH conditions impair health and double health care costs. This problem is now being addressed through creation of complexity intervention units, i.e., medical units with full psychiatric capabilities.

Reference

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Factors influencing the admission decision for Complexity Intervention Units: a concept mapping approach

Aim
Because there is no consensus on the indications for admission to a CIU, daily practice and effectiveness research are hampered. Therefore, this study investigates which factors determine the decision to admit a patient to a CIU, using a concept mapping approach.

Methods
The first step of the concept mapping approach was to create a list of factors determining CIU admission from the literature. Second, clinical experts sorted and ranked these factors. Third, these sorting and ranking data were analyzed and a draft conceptual framework was created. In an expert consensus meeting, a final conceptual CIU admission framework was drawn and advices for implementation were suggested.

Results
Thirteen clinical experts defined 90 factors out of the literature, which were sorted and ranked by 40 experts from 21 Dutch hospitals. This concept mapping approach resulted in a five-cluster solution for a CIU admission framework based on: 1. Staff competencies and organizational pre-requisites; 2. Patient context; 3. Patient characteristics; 4. Medical needs and capabilities; and 5. Psychiatric symptoms and behavioral problems.

Conclusion
Implementing five admission criteria deriving from this conceptual framework will help to decide on admission of complex patients with psychiatric and physical disorders to a CIU more properly, consistently and transparently.

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Identifying value-based quality indicators for general hospital psychiatry

Aim
To define generic quality indicators for general hospital psychiatry from the perspectives of patients, professionals (physicians, nurses, and managers), and payers (insurance companies).

Methods
Quality variables were identified by reviewing the relevant literature. A working group consisting of patients’, professionals’ and payers’ representatives was mandated by their respective umbrella organizations. The working group prioritized the quality variables that were identified. Core values were defined and subsequently linked to preliminary quality indicators. These were tested for feasibility in ten hospitals in a four-week period. Stakeholder consultation took place by means of two invitational conferences and two written commentary rounds.

Results
Forty-one quality variables were identified from the literature. After prioritization, seven core values were defined and translated to 22 preliminary indicators. Overall, the feasibility study showed high relevance scores and good implementability of the preliminary quality indicators. A final set of twenty-two quality indicators (17 structure, 3 process and 2 outcome indicators) was established using a consensus-based approach.

Conclusion
Consensus on a quality framework for general hospital psychiatry was built by incorporating the perspectives of relevant stakeholders. Results of the feasibility study suggest broad support and good implementability of the final quality indicators. Structural indicators were broadly defined, and process and outcome indicators are generic to facilitate quality measurement across settings. The quality indicator set can now be used to facilitate quality and outcome assessment, stimulate standardization of services, and help demonstrate (cost-) effectiveness.

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Costs versus effects on a Complexity Intervention Unit (CIU)

Aim
We studied the impact of CIU-treatment on functional status and healthcare needs in relation to costs of claims.

Methods
Functional status and healthcare needs are assessed with the use of two validated questionnaires: the Health of the Nation Outcome Scales (HoNOS) and the Camberwell Assessment of Needs Short Appraisal Schedule (CANSAS). In a single centre prospective design, both questionnaires were administered at admission and discharge. The costs per claim were calculated based on the actual reimbursements. Generalized linear modeling was used to estimate the changes in score in relation to the costs of claims.

Results
A total of 50 patients were included in this study. The results of the uncontrolled analyses showed that the HoNOS improved with 4.64 (29%) points and the CANSAS with 2.28 (23%). The costs for 1 point improvement were €2.842 and €4.668 respectively.

Conclusion
Treatment on a CIU results in improvement of functional status and less healthcare needs at acceptable costs. This was the first study that examined the impact of CIU-treatment on outcome measures in relation to costs of claims. Although this study was conducted in a single centre and has a small study sample, the results are of interest for other CIUs and policymakers.

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**Integrated Medical Psychiatric Units are cost effective and improved quality of care**

**Aim**
Patients with co-morbid medical and psychiatric illness can be difficult to treat. They often receive fragmented care that is lengthy and costly. These patients receive sequential treatment being transferred to Psychiatric Units after medical stabilization, resulting in longer length of stays and more complications. Medical Psychiatric Units are best suited to treat these patients. They are cost effective, with significant savings to institutions. They also improve quality of care and are an excellent vehicle to teach residents and medical students from multiple disciplines.

**Methods**
Our team will present data from our 20 years experience developing an integrated medical-psychiatric unit in a large academic medical center of 800 beds, located outside of New York City.

**Results**
Our project of integrating the inpatient unit showed the following results:
1. Total financial gain to the institution: $82,779.
2. Increased staff satisfaction.
3. Increased patient satisfaction.
4. Increased quality of care.
5. Decreased length of stay.
6. Decreased 1:1 observation.
7. Increased quality of teaching.
8. Reduced stigma of mental illness.

**Conclusion**
Our 20 year data collection shows that Inpatient Medical-Psychiatric Units are financially viable, resulting in significant savings to the healthcare system. They reduce stigma of mental illness and improve quality of life, They are also an excellent vehicle to teach healthcare providers in the delivery of high quality, compassionate care.

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