Introduction

• Patients with chronic mental illness are often unstable in the community, dependent, have poor appointment attendance, and cost the system a significant amount of money.1,2,3,4
• Treatment resistance and adverse medication effects are common challenges for patients with severe mental illness.5,6
• Pharmacogenomic clinical decision support systems (PGx-CDSSs) may be useful in psychiatric medication selection.7,8

Purpose

To improve clinical outcomes in patients with persistent mental illness

Objective 1 Decrease mental health symptoms
Objective 2 Increase stability in the community
Objective 3 Reduce the cost of care
Objective 4 Increase independence in taking medications while maintaining adherence
Objective 5 Increase psychiatric clinic visit attendance

Methods

Project was deemed not human subjects research by the IRB
Setting: Eyerly Ball community mental health center
Population: 52 patients with chronic mental illnesses
PGx-CDSS selected: GeneSight Psychotropic PGx-CDSS
- Most published evidence9
  • Remission of depressive symptoms7
  • Promote cost savings in amount spent on medications6
  • Reduce polypharmacy8
  • No cost to patients with Medicaid10

Process to improve patient outcomes

• Havelock’s Theory of Planned Change used to implement quality improvement project11
• PGx-CDSS ordered and utilized for patients
• Nurse practitioner considered PGx quality improvement project

Modification of existing CDSS

- 6 month post-intervention period
- 6 month pre-intervention period

Collected data in a retrospective chart review

Objectives

Objectives 2 and 3
• Average change days of psychiatric hospitalizations was significant from 2.7 ± 9.2 (0.38) to 0.1 ± 0.8 (0.6) (p = 0.050)
• Reduced total cost from $262,015 for five patients hospitalized for 139 days pre-intervention period versus $11,310 for one patient hospitalized for 6 days post-intervention period
• Not enough incarcerations to comment on

Objective 4 & 5
• Number of days of independence increased, partial-independence remained essentially the same, and dependence decreased, while adherence was high (> 99%)
• Average change in clinic visit attendance was significant from 83.4% ± 17.4 (40.0-100.0%) to 88.1% ± 17.8 (37.5-100.0%) (p = 0.056) with fewer scheduled visits

Evaluation

Objective 1 Mental health symptoms were decreased
Objective 2 Patients were more stable in the community
Objective 3 Money saved on psychiatric hospitalizations
Objective 4 Independence in taking medications improved while adherence remained high
Objective 5 Psychiatric clinic visit attendance increased

Limitations
• Small sample size
• Short-term outcomes

Conclusions

• PGx-CDSS in psychiatry appears to offer a more objective approach to psychiatric medication selection and improve overall mental health and the stability in the community
• There is potential for PGx-CDSS to have significant cost savings and reduced utilization of healthcare resources
• Results of can be used to guide future studies

Dissemination:
• International Society of Nurses in Genetics poster (2016)
• International Society of Nurses in Genetics podium presentation (2017)
• Journal manuscripts in progress

References


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