2013

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Marquita D. Bradshaw

Nicole B. Washington

Ricky Munoz

Nancy C. Brahm

Recommended Citation

Bradshaw MD, Washington NB, Munoz R, Brahm NC. Design and Implementation of Acute Emergency Decision Making Tools to Aid Case Managers: A Focus Group Study. *Inov Pharm*. 2013;4(4): Article 136. http://pubs.lib.umn.edu/innovations/vol4/iss4/7

Design and Implementation of Acute Emergency Decision Making Tools to Aid Case Managers: A Focus Group Study

Marquita D. Bradshaw, Pharm.D, BCACP*[1]; Nicole B. Washington, DO[2]; Ricky Munoz, PhD[3]; Nancy Brahm, Pharm.D, MS, BCPP, CGP[4]
[1]South University School of Pharmacy, Pharmacy Practice; [2]University of Oklahoma School of Community Medicine, Department of Psychiatry, Tulsa, OK; [3]University of Oklahoma, The Anne and Henry Zarrow School of Social Work, Tulsa, OK; [4]University of Oklahoma College of Pharmacy

*Affiliation at the time this project was developed: University of Oklahoma College of Pharmacy, Department of Pharmacy: Clinical and Administrative Sciences, Tulsa, OK

Abstract

Objectives: To evaluate and determine if use of specific reference cards for diabetes, stroke, and heat stroke [1] heightened understanding of the signs and symptoms of these conditions and [2] helped case managers (CMs) on the community-based integrated multidisciplinary program of assertive community treatment (IMPACT) team better evaluate patients.
Background: Healthcare professionals who service those with a severe mental illness (SMI) diagnosis face many unique challenges. One particular challenge is medical assessment of patients with a SMI diagnosis. Often CMs do not have a background or work experience differentiating medical concerns from psychiatric signs and symptoms.
Methods: Reference cards were developed at the request of the IMPACT team. Feedback was elicited through a one-time focus group session conducted by an independent party on the use of the reference cards as an educational tool. Anonymity was maintained. The responses were evaluated for themes. The moderator asked questions regarding the reference cards in each of the following areas: usability when answering questions about hypo- and hyperglycemia, stroke and heat stroke, understanding key points, recommendations for enhancement, and presentation of information.
Results: Of the 8 CMs on the IMPACT team, 5 participated. Identified themes were quick reference and easily identifiable information. The use of pictures to illustrate the concepts was helpful. The language was appropriate for the cards and readily understandable. Suggestions for changes to the existing cards included use of a larger font, lighter background color, and moving medication information to the same side of the card. The limited availability of the heat stroke card in the summer was an identified limitation.
Conclusions: The use of reference cards as an educational tool for CMs has not been extensively reviewed. Although data are limited from this pilot project, the CMs are enthusiastic about this resource and requested cards on additional topics.

Introduction

The assertive community treatment model was specifically designed for persons with a severe mental illness (SMI) diagnosis who have a recent history of psychiatric hospitalizations, criminal justice involvement, homelessness, or substance abuse. The model is based on a team approach which allows for the delivery of a comprehensive package of services to clients in the community.[1,2] The Integrated Multidisciplinary Program of Assertive Community Treatment (IMPACT) team replicates this framework. It is a university-based service compromised of multiple disciplines with varying experience in regards to addressing acute medical concerns. The team consists of a psychiatrist, psychiatry resident, licensed clinical social worker, licensed professional counselor, three case managers, one recovery support specialist, three nurses, an administrative assistant, and a clinical pharmacist. Persons enrolled in the program have a primary diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder.

Corresponding Author: Marquita Bradshaw, Pharm.D, BCACP
10 Science Court, Columbia, SC 29203
Phone: 803.935.9694, Fax: 803.935.4564
mbradshaw@southuniversity.ed

Healthcare professionals who provide services to this population face many unique challenges. One particular challenge is medical assessment of patients with a SMI diagnosis. Often CMs do not have a background or work experience differentiating medical concerns from psychiatric signs and symptoms.

Several studies have shown that patients with a SMI have difficulty maintaining self-care behaviors of chronic disease.[3] The prevalence of chronic conditions leading to cardiovascular disease (CVD) such as diabetes, dyslipidemia, hypertension, and obesity is approximately double that in a patient with a SMI diagnosis compared to a patient without a SMI diagnosis. This can be partially explained by under-treatment and under-diagnosis of the chronic, co-morbid diseases.[4] Other factors may include the level of cognition required to complete self-care behaviors coupled with psychosocial barriers which hinder appropriate maintenance.

One potential topic for the reference cards was selected with the assistance of case managers on the IMPACT team. The authors discussed common scenarios encountered while caring for patients with a SMI in an ambulatory setting and identified knowledge gaps within those scenarios. Factors that would make patients with a SMI more susceptible to specific acute medical emergencies were also discussed for several disease states. Factors making a patient more susceptible to a heat stroke include anticholinergic load, temperature in study setting during summer months, and a patient's inability to sweat. Factors making a patient with a SMI more susceptible to an acute medical emergency resulting from diabetes include inadequate self-care and lack of insight from patient. Limited patient knowledge and education may result in mismanagement of diabetes including over-and underdosing of medications, with subsequent hypo- and hyperglycemia. Lastly, patients with a SMI may be at increased risk of development of a stroke due to nonadherence with antihypertensive and antilipidemic agents as well as adverse drug reactions from antipsychotic medications, such as dyslipidemia. Inadequate self-care and lack of insight on the severity of diseases may place a patient at increased risk for complications.

It is imperative that multiple disciplines, psychiatrists, social workers, counselors, case managers, recovery support specialists, nurses, and pharmacists, are able to care for these individuals as they may not be able to care for themselves. Case managers specifically requested information regarding the most common side effects associated with antidiabetic medications and treatment of hypo- and hyperglycemia. The remaining two topics for the reference cards were selected

with considerations for the prevalence of chronic co-morbid conditions existing among those with a SMI.

Little is known about the design and use of tools to guide decision making for case managers to provide helpful information in resolving acute medical emergencies. This pilot project is designed to help evaluate if this style is useful and helps the learners integrate knowledge more completely by enabling patients and healthcare providers to gain knowledge of important disease states.

Methods
Reference cards were developed by clinical pharmacists and a pharmacy student working with the IMPACT team. This was the first attempt to develop tools to aid in decision making for case managers on the IMPACT team, therefore no template or prototype was available. Case managers were consulted to determine potential acute medical emergencies indicating a need for medical intervention and/or follow-up if a patient presented with corresponding symptoms. Information included on reference cards were derived from various drug information resources, drug manufacturer data, and nationally sponsored organizations (e.g., the American Heart Association). Reference cards were created utilizing publishing software with dimensions of 4 x 6 inch, printed on card stock, and laminated. Illustrations and tables were heavily incorporated to offer easy readability (Figure 1.)

Institutional Review Board approval was received for a one-time focus group session, not to exceed 2 hours. Focus group analysis methodology was used. This is similar to other qualitative self-reported data: the researcher collects data, compares discussions for similar themes, and examines how these themes relate to the study. The focus group questions were designed to help evaluate the educational content of the cards and evaluate utility. All feedback was evaluated. Topics that did not specifically relate to the educational focus of the questions were included in the theme analysis.

The session was conducted by an independent party to elicit information on the use of reference cards as an educational tool. Participant anonymity was maintained. The responses were evaluated for themes. The moderator asked questions regarding reference cards for information about each of the following areas: ability to answer questions about acute medical emergencies, understanding key points related to symptom presentation, recommendations for card enhancement, and presentation of information. Questions included:

- What are some of your thoughts about using reference cards to answer questions about diabetes, stroke or heat stroke?

- What is the one thing that you want to stress to your patients that is helped by the cards? Which card has been most helpful?
- Would you say that this helped you better understand some of the key points for these conditions?
- What would you like to see changed about the way this information is provided?
- Are there other recommendations that you would like or that would help you use the cards more efficiently?
- Are there other things that you would like to say before we wind up the session?

Results
Of the 8 CMs on the IMPACT team, 5 were available to participate. Identified themes in favor of the cards were quick reference with easily identifiable information. The use of pictures to illustrate the concepts was helpful. The language was appropriate for the cards and easily understandable. Provided that, CMs perceived reference cards were:

- Easy to share and show
- Information was also helpful for family members

Suggestions for changes to the existing cards included use of a larger font, lighter background color, and moving medication information to the same side of the card as opposed to continuation of data on opposite sides. The heat stroke card being unavailable until after the summer months was an identified limitation by the focus group participants.

Additional themes to emerge related to the need for additional cards. Specific information requested fell into three main areas: signs and symptoms of substance use and abuse, specifically cocaine, methamphetamine, marijuana, and alcohol, the differentiation between changes in psychiatric stability and the use of pharmacotherapy in patients with hepatitis C, tuberculosis, and human immunodeficiency virus (HIV) infection/acquired immunodeficiency syndrome (AIDS), and signs and symptoms and treatment options for lice, bedbugs, and scabies. Data collection occurred until saturation. No additional themes were identified.

Discussion
A previous study determined that an antidepressant decision making aid may be beneficial for assisting providers with patients diagnosed with a mental illness choose an initial antidepressant and increase discussion between the physician and patient.[6] Several impending barriers were discussed within the shared decision making process for

patients with a mental illness. Patients included lacked insight regarding the need for treatment and symptom severity, attitudes about treatment, and changes in symptom severity as they may be too ill to take part in the process or make decisions about difficult situations.[6] Provided that, the authors decided on a clinician-centered approach for this project as our patient population is mainly comprised of patients with a SMI compounding those barriers. Moreover, CMs believed information printed on the reference cards created during this pilot project should be shared with caregivers of patients with a SMI.

Due to the increased prevalence of diabetes and deleterious effects of commonly used antidiabetic agents if administered improperly (e.g. insulin), it was determined that the first card designed should focus on proper response to hypo-and hyperglycemia. In 2004, Dixon and colleagues determined that multiple disciplines and interventions were required to provide diabetes related services to patients with a serious mental illness including case management and system level efforts.[7] A comparison of A1c of three groups with similar baseline characteristics was conducted: patients with Type 2 diabetes mellitus (T2DM) and schizophrenia, patients with T2DM and major mood disorders, and those who had T2DM without a SMI. Furthermore, individuals with schizophrenia were at increased risk for diabetes with contributing factors of greater poor self-care compared with patients without a serious mental illness.

The second card designed focused on a caregiver's response to stroke as approximately 2.6% of men and 2.6% of women greater than or equal to 18 years of age have a history of stroke. Risk factors for stroke include high blood pressure, tobacco use, diabetes mellitus, high cholesterol, and physical inactivity and obesity, most of which are at present in patients with a SMI. Furthermore, 50 to 80% of patients with a SMI are smokers. Additionally, persons with schizophrenia have a life expectancy that is 20 years less than the general population, coinciding with high rates of obesity and CVD mortality.[9]

The third card designed focused on proper response to heat stroke. Reports indicated that the incidence of heatstroke in urban areas of the United States was approximately 5,000 cases over a 23-year period. Over the period of a year, heatstroke accounts for over 200 deaths in the United States.[10] Medications that cause decreased hydration and regulation of body temperature increase a patient's risk for heat stroke. More specifically, medications used in persons with a diagnosis of mental illness are anticholinergics, antidepressants, antipsychotics and antihistamines, often

prescribed in combination for patients seen by the IMPACT team.

Future Directions

CMs found the prototype reference aids to contain useful information for evidence-based treatment regarding the management of acute medical emergencies pertaining to diabetes, stroke, and heat stroke. As mentioned, patients with a SMI are also at increased risk of CVD as well as utilization of substances of abuse. The team identified additional cards that would be helpful for community-based visits. These were developed and are currently under review and discussion by the IMPACT team. Specific information on signs and symptoms of alcohol poisoning and corresponding blood alcohol levels were included. Emergency procedures were included on each card created. Additional cards that outline instructions on how to respond to a myocardial infarction and perhaps counseling or motivational interviewing on smoking cessation may be beneficial. Improvement and evaluation of previously designed reference cards detailed in this manuscript are warranted. From an efficacy standpoint, assessment of knowledge before and after exposure to reference cards to determine if CMs enhanced their ability to manage an acute emergency would also be of interest. Subsequently, clinical outcomes should be measured including successful referral to the emergency department, accurate identification of symptomology, and appropriate triage of a medical emergency.

Conclusion

The use of reference cards as an educational tool for CMs has not been extensively reviewed. Although data are limited from this pilot project, the CMs are enthusiastic about this resource and have requested cards on additional topics.

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Figure 1.

FRONT OF CARD   BACK OF CARD

Medications that cause heat sensitivity

During the warm seasons, extreme heat can have deadly consequences; especially for the elderly and people taking psychotropic medications.

Certain medications can cause heat sensitivity through a decrease in sweating or temperature regulation or increase the skin's sensitivity to sunlight and cause sunburn. It is important to remind people taking these medications to be cautious in the heat, drink plenty of water and not to overexert themselves. It may not be easy to tell when someone is overheated so the best defense is to stay out of the sun during the hottest time of the day and to always wear sunscreen.

People taking any of the following drugs should follow the above sun safety recommendations.

Antidepressants Amitriptyline Imiprimine Trazodone **Antihistamine** Diphenhydramine Chlorpheniramine Cetirizine (Zyrtec®) Hydroxyzine	**Movement Disorders** Benztropine (Cogentin) Trihexylphenidyl (Artane) Amantadine (Symmetrel) Diphenhydramine

Medications that cause heat sensitivity, cont.

Antipsychotics (ALL)

Chlorpromazine	Clozapine
Perphenazine	Paliperidone
Haloperidol	Risperidone
Loxapine	Olanzapine
Fluphenazine	Quetiapine
Aripiprazole	Ziprasidone

Medications that can increase sun sensitivity:
WEAR SUNSCREEN!
Hydrochlorothiazide (HCTZ)
Sulfa drugs: Bactrim®, glipizide, glyburide
tetracycline/doxycycline

SLIP! on a shirt
SLOP! on sunscreen
SLAP! on a hat
WRAP! on sunglasses

Courtesy of America Cancer Society.

Sources: CDC.gov and Levine M, LoVecchio F, Rhua A, Chu G, Roque P. Influence of Drug Use on Morbidity and Mortality in Heatstroke. J Med Tox. Mar 2012. and The American Cancer Society.