Create a Drug Resistant to Tuberculosis Health Care Program Evaluation Proposal for Your Health Care Organization

Course Description

The purpose of this Drug Resistant Tuberculosis (DRTB) support program evaluation is to prevent, examine, and control the transmission existing DRTB among populations in a rural Florida satellite hospital with the use of formative evaluation. The purpose of the evaluating this DRTB program is to determine if the health care organization has the necessary system in place to care for an increase in patient volumes diagnosed with DRTB. With the use of a formative evaluation, this programs purpose will be evaluated to recognize ways that the health care organization can expand on what is working well with the current DRTB program. The Learner has to keep in mind that this course can be used to evaluate any program in a health care organization.
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Introduction

According to Healey, and Zimmerman (2010) formative evaluations are used to evaluate programs that may be under-developed. Additionally formative evaluation may uncover problems with program implementation. The evaluation may uncover ways that can result in a decline in the number of morbidity and mortality from DRTB. Additionally uncover potential problem will build community partnerships that will unlock the access for future governmental funding.

Background

World Net Weekly (2006) reported that in the highest numbers of multi-drug resistant cases in over the last decade were New York, California, Texas, and Florida, and according to the CDC (2006) states with the highest populations of new immigrants. Florida was listed among the highest incidence in the number of cases of DRTB the satellite health care organization decided to implement a DRTB support program to fight the increase in number of incidence among individuals at a rural satellite TB hospital in Florida.

Tuberculosis (TB), mainly caused by the organism Mycobacterium tuberculosis, is one of the most ancient and neglected diseases of humanity (WHO, 2012). Around 1.7 billion people, one-third of the world’s population, are infected with TB (WHO, 2012). Severe et al. (2011) illustrates that in 1993 the World Health Organization (WHO) declared tuberculosis a global emergency. TB is considered one of the top three killer diseases worldwide. Although TB programs have made a tremendous advancement over the past two decades; the fight against TB in the modern world, still remains a very important public health problem for the general population (Furtunescu, 2012). According to the Center for Disease Control and Prevention,
CDC (2012) DRTB occurs when individual are placed on treatment management, and they are non-compliant or treatments are misused or mismanaged.

The most common behaviors that led to DRTB are individuals are not being compliant with medication regimen, not completing medication regimen, and cohabitating with another individual with known DRTB CDC, (2012). The reasons for these behaviors of non-compliance to medication regimen maybe influenced by individual behaviors. According to Estrada (1990) individuals who lack health insurance coverage, those with functional limitations, and those in poorer perceived health encounter more barriers than others, and are prevented by these barriers from obtaining or complying with health care for themselves. The current DRTB program uses the behavioral model. The behavioral model allows the health care organization to understand better the major influences on people’s decisions with regard to becoming proactive about preventing, complying, or controlling their DRTB (Healey, & Zimmerman, 2010).

**Literature Review**

**Behaviors**

According to Andersen’s (1995) behavioral model, there is equitable access when predisposing and need factors determine the use, whereas inequity is present when enabling factors determine the use. Many studies have shown that the above factors have been associated with utilization, and complying with health care services. Understanding the behavioral theory is helpful when one is attempting to change behavior (Healey, & Zimmerman, 2010).
Strategies to Improve Program Participants Behaviors

Dick et al. (1996) discusses that there are more than 200 variables associated with participants that are non-compliant with DRTB treatment regimen. The non-compliance is associated with characteristics such as socio-economic status, age gender, and environmental conditions or location. Furthermore, participants with TB tend to sway in their desire or motivation to complete their treatment because of medication side effects and admit to forbid complying with treatment regimen over the course of therapy (Dick et al., 1996).

Non-compliant participants are viewed by the health care team as different. Being non-compliant is a distraction that the behaviors regarding treatment is multifaceted and is influenced by many factors, including the patients’ health beliefs, sociocultural setting, and subjective experience of the illness (Dick et al., 1996). There have been recommendations by psycho-socialist to create a conceptual model for this DRTB program centered on the health behaviors of the participants Dick et al, (1996); Glanz, Lewis, & Rimer (1997). Additional recommendations are to incorporate an information–motivation–behavioral (IMB) skills model Fisher, & Fisher (1992) that integrates information, motivation, and behavioral skills in explaining behaviors contribute to compliance to TB treatment.

Florida Health Care Organization DRTB Program Evaluation Needs Assessment

CDC Guidelines for the investigation of contacts of persons with infectious tuberculosis: recommendations from the National Tuberculosis Controllers (2005) illustrates that Duval County Health Department of Florida conducted a screening during February 15 through March 13, 2012 of 2,300 individuals. Of the 2,300 individuals screened, 2,100 were highly suspicious for acquiring TB that was related to a recent exposure in a congregate setting to a patient with sputum smear-positive TB. Although the number of cases is declining in Florida, there is a huge
concern of DRTB cases outbreak still occurring among the homeless population. The current health care organization should conduct a program evaluation to determine if modifications are needed to care for receiving participants diagnosed with DRTB.

**The Behavioral Theory for DRTB Program**

According to Healey, and Zimmerman (2010) one of the major influences on health is the receipt of health services. Receiving and complying with health services are solely related to factors that determine good health of equal, or perhaps greater, importance than the health care system. The development of equitable access and easy health care access increases health care compliance. Use of health care services and complying with health services are related to behaviors. According to Cromley, & McLafferty (2002) obstacles that can have a direct effect on health care behaviors are access, race, age, education, income, sex, culture, ethnicity, sexual orientation, lack of health care insurance, and geographical location.

The specific program evaluation theory behind individuals receiving health and complying with the health care services program of DRTB is the behavioral theory. The reason the behavioral theory is used in programs of patient compliance with medical regimen is because behaviors affect outcomes. The evaluation of this DRTB program aim is to change behaviors to comply with health care is because the behavioral theory allows the evaluator an approach to understand why people behave the way they do concerning their health and to look at possible ways to change that behavior (Healey, & Zimmerman, 2010).

Understanding and using the behavioral theory behind a DRTB program design and interventions is important for program planning and intervention and helpful for program evaluation because theory allows a better understanding of the program being evaluated Healey, & Zimmerman (2010). Furthermore using the behavioral theory is very useful in offering the
program manager a step-by-step approach to understand why people behave the way they do when it concerns their health and to look at possible ways to change that behavior (Healey, & Zimmerman, 2010).

Anspaugh, Dignan, and Anspaugh (2000) supports using theory behind program design so that an evaluator of a program can better understand the theories behind behavioral change that can help to make health intervention programs more effective. McKenzie, Neiger et al. (2005) highlights that using theory allows a basis for understanding the various theories that are available concerning why things happen the way they do. Kürschner, Weidmann, & Müters (2011) by strengthening the general health care team position; the behavioral model should optimize health care especially for people with higher demands for health services.

The program evaluator, and the health care team in Florida Hospitals understands the individual are living with DRTB delay initiation of care or maintain inconsistencies, which has tremendous personal and public costs. However, few explanatory models with high yield for intervention development and implementation have been proposed to date that would help to characterize and support care use for the behavioral model for this DRTB program (Rivet, 2011).

**Evidence Base in Health Care Practice and the Behavioral Theory**

Health behaviors or evidence-base practices demonstrates that behaviors drives practice. The behavioral theoretical framework is particularly appropriate, as it includes domains, especially relevant to understanding the health and the health-seeking behaviors regarding certain populations (Barkin, Balkrishnan, Manuel, Andersen, and Gelberg, 2003). These behaviors are very important for the patient populations with a DRTB because of health care seeking behaviors, and health care compliance. McKenzie, Neiger, and Smeltzer (2005) supports the
behavioral theory and DRTB population and how it relates to health care programs by indicating that there is a great deal to be learned about health behaviors before moving or changing outcomes of health promotion programs. McKenzie, Neiger, and Smeltzer (2005) “further adds that a good understanding of behavioral theory allows the health promotion specialist the opportunity to better comprehend what is necessary to change human behavior. Without this knowledge, an intervention program may be targeting the wrong motives for the target audience practicing the high-risk behaviors that need to be changed. The intervention(s) need to be well planned and reviewed before they are actually implemented. All too often health promotion programs are implemented without adequate planning, and the results are short of expectations. The greater the time and effort that is spent in the program development stage, the better the chance of success in changing high-risk health behaviors for individuals and communities. There are a variety of strategies that may be used in order to accomplish the program objectives. The type of intervention is dependent on the goals of the program and the availability of resources (pp. 163).”

**Similar Programs and the Behavioral Theory**

Developing and using a program theory behind a program’s design and interventions important for program planning and intervention and helpful for program evaluation because theory frames how individuals ask, look at, and answer questions. Theory provides conceptual clarity and the capacity to connect new knowledge that is obtained through data collection or the program evaluation actions to the vast body of knowledge to which it is relevant (Depoy, and Gitlin, 1998). Without theory, we cannot have conceptual direction. Data derived without being
conceptually embedded in theoretical contexts do not advance our understanding of human experience, the human phenomena (Depoy, and Gitlin, 1998). For one to develop and use program theory behind a program, he or she must be first able to understand the programs theory design that will offer the program manager a step-by-step approach to understand why people behave the way they do concerning their health and to look at possible ways to change that behavior (Healey, & Zimmerman, 2010).

**Program Goals and Objectives**

**Target Population**

The target population for DRTB program is all individuals living with three or more of the following disparities:

1. Limited resources
2. Sharing small living quarter
3. Co-habiting with a family member diagnosed with TB, or a resistance strain of TB.
4. Newly arrived immigrants to the rural area of Miami, Florida.

**Program Goals**

The critical goal of DRTB program is to prevent or eradicate the transmission of DRTB among individual at a rural satellite TB hospital in Florida. The goal of this health care organizations Drug Resistant Tuberculosis (DRTB) program is to determine how effective is the organizations current DRTB support program in the control and transmission of preventing DRTB among individuals at a rural satellite TB hospital in Florida. This program evaluation will explore the current mechanisms of the DRTB support Program. Additional goal will be aim at the coordination and communication of patient adherence to medication compliance for DRTB.
The evaluation will also recognize ways that the health care organization can expand on the on what is working well with the current DRTB program, and use what is working well to build community partnerships that will unlock the access for future governmental funding for the next two years.

McHorney (2009) illustrates that poor adherence to medication management among all patient is directly linked to patient behavior. There is no conclusive data that has been defined a non-adherent personality or revealed a relationship between adherence and the ability to follow self-care lifestyle recommendation. Therefore, the goals and objectives will be directly linked to best practices in coordinating medication management for patient initially diagnosed with TB, and retreated for the development of DRTB.

**Program Objectives**

The rural satellite TB hospital in Florida recognizes that to achieve the intended goals, program objective for the next two years were identified:

1. At the time of positive diagnosis of TB, or DRTB, 100% of the program participants (patients) will be instructed on the importance of medication compliance until medication is completed. The instruction will be patient centered, which will include the pharmacist, social worker, and infection control personnel.

2. Increase medication compliance of patient admitted especially, foreign born into the hospital with TB, reoccurrence of TB, or DRTB by 100% within the next two years.

3. Collect 100% of accurate epidemiology data and promptly report positive TB or DRTB to the local public Health Department.

4. Provide 100% program participants with an education pamphlet, and read the pamphlet to individuals who are cognitively impaired, or to family members who understand what to do
for signs, and symptom of TB, for example; productive coughing for more than four weeks for the next two years. Additionally have an interpreter available to translate the pamphlet in different languages.

5. The health care organization will comply with 100% of the center for disease control and prevention national TB program objectives and performance targets for 2015.

**Definition of Terms**

*Adherence*: The degree to which the patient complies with the prescribed mode of treatment with limited supervision by the health care professional team.

*Drug Resistance Tuberculosis (DRTB)*: Drug resistance Tuberculosis occurs as a result of inappropriate use of antibiotics among TB patients. This improper use occurs because of administering improper treatment regimens and failure to ensure that patients complete the whole course of treatment (WHO, 2012).

*Medication Compliance*: How well a patient follows the advice of a medical profession to treat an existing medical condition.

*Non-Compliance*: Not following positive advice by a medical professional which yields a negative outcome.

*Tuberculosis (TB)*: TB is a disease caused by a bacteria called *Mycobacterium tuberculosis*. *Individuals are exposed to this bacterium by* breathing in air droplets from a cough or sneeze of an infected person.


*Social category*: how a group of individuals view a certain group or surrounding peers based on class (Homeless Facts, 2009).
Evaluation Model Design

Qualitative Approach Program Evaluation.

The DRTB evaluation program have recognized that the components of knowledge and behavior is a key contributor have a profound influence on the treatment seeking behavior and completion of treatment of patient diagnosed with DRTB (Sharma, 2005). Because qualitative research is an interpretive research approach that relies on multiple types of subjective data and investigates people in particular situations in their natural environment (Denzin & Lincoln, 1994) the program evaluation will use a qualitative approach. Ensing (2003) illustrates that qualitative research is often done with vulnerable and marginalized populations, frequently because not much is known about them by mainstream society and qualitative research approaches can be more appropriate for describing their lives and experiences. As the aim of this program is to determine the behavior that leads to non-compliance to medication management of DRTB patients; qualitative methods of their lived experiences when taking the medication regimen should be identified.

The identified lived experiences may uncover reason to make changes in the DRTB program. Cohen illustrates that individual’s behavior is a function of its consequences. It is based on law of effect for example, individual’s behavior with positive consequences tends to be repeated, but individual’s behavior with negative consequences tends not to be repeated. There may be some underlying causes of why certain tuberculosis patients continue their treatment management and others do not. The program evaluation committee will collaborate on administering key informant interviews, and possible focused groups (case studies) to attempt to uncover the lived experiences of patient with TB returning to the health care organization with a drug resistant strain of TB that will have to undergo treatment management.
Data Collection, Sampling, Recruitment

Possible data collection methods may include stakeholders of the program evaluation committee medical professional randomly select individuals entering the health care organization with a drug resistant strain of TB (DRTB). Key informant interviews may be included in the data collection by patient entering the health care by word of mouth (snowball), and finally in-depth interviews of randomly selected patient with positive chest x-rays of TB reoccurrences. Sandelowski (1995) illustrates that sample size is relative in a phenomenological study because it requires purposeful sampling, also known as selective or criterion sampling. When conducting this qualitative study it is necessary for the program evaluator to subgroup observable behaviors that will aid in analyzing the data. Data collection may also include direct patient observation, and review of patients medical records.

The program is designed to evaluate all participant process on medication compliance, knowledge of disease process, and how well participant adhere to complying with treatment regimen. The type of sampling methods will be strictly random, or by snowball (word of mouth). Patient will be recruited by initial contact when entering the health care organization with a confirmed diagnosis of DRTB. Patient will ask if they would like to participate in a program designed to determine the effectiveness of the DRTB health care program at the current organization.

Methods

The qualitative methods used for this program evaluation:

a. Adhering to program goals and objective
b. Key informant interviews
c. Focused groups, and intense counseling to identify the lived experiences of patients re-
entering the health care organization with a resistant strain of DRTB in the attempt to uncover the lived experiences.

d. Direct patient observation
e. Review of patients medical records.

Informant interview will be conducted among the health care provider and the patient in the effort to determine socioeconomically status, what is understood when taking medication for TB, the side effect of medication used for TB, and how does one socioeconomically status have a direct or indirect effect on medication compliance.

The key program evaluator will team up with stakeholders who are health care professional that will conduct focus group discussions. The focus group discussion will include patient who are entering the health care organization with a history of TB and with reoccurrence of symptoms. Focus groups and intense counseling will be conducted to evaluate the impact of the previous treatment regimen. In addition to understand these patient medication compliance, treatment seeking behaviors, and the traditional falsehoods and stigma associated with TB in society, and finally to explore the awareness levels about tuberculosis symptoms as well as availability assess to diagnostic treatment (Sharma, et al. 2005).

*Table 1* Summarizes the plan for stakeholder roles and level of involvement for the DRTB program evaluation. When bi-weekly meeting are conducted with the DRTB evaluations program roles focus groups, data collection, laboratory findings, patient education, patient follow-up, and informant interview may be discussed. These meeting will also reinforce the stakeholder’s roles and responsibilities of using DRTB case and suspect log designed by The
Table 1
Individual Involved in DRTB Program Evaluation Roles and Responsibility

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Role in the Evaluation</th>
<th>Level of Engagement</th>
</tr>
</thead>
</table>
| Nurses and Health Care Team of the TB in-out-patient units | Identification of possible DRTB patient  
Involved in the Collection of data  
Provide effective and acceptable treatment and care interventions for TB  
Set-up Focus Groups, and Key Informant interviews for medication compliance  
Initiate the Infection Control Plan according to Health Care organizations Policy and Procedures, Elevated involvement in public health reporting  
Involved in the Interpretation data findings  
Educating communities and patients to recognize symptoms of TB and to seek health care should be routine in all settings providing care for patients.  
Educate patients should how to protect themselves, and others, from exposure to TB | TB patients attending the general outpatient clinic or admitted in the Emergency room need to be identified early enough by health workers so that they are given a priority for TB (triage). All chronic coughers in out patients’ clinics need to be screened for pulmonary TB as soon as possible (WHO, 2003).  
Have an active infection prevention and control plan;  
Administrative support for procedures in the plan, including quality assurance  
Training of staff  
Education of patients and increasing community awareness  
Coordination and communication with the TB program (WHO, 2003) |
<table>
<thead>
<tr>
<th>Drug Resistant Tuberculosis Health Care Program Evaluation Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provide educational Pamphlets</strong></td>
</tr>
<tr>
<td><strong>Set-up Focus Groups, and Key Informant interviews for medication compliance</strong></td>
</tr>
</tbody>
</table>

**Administration**

- Involving the multidisciplinary team
- Setting up bi-weekly meeting for reporting and evaluating the DRTB program
- Medication Compliance
- Monitor Web-Based infection control software

- Make sure that the health care facility has a multidisciplinary Infection Prevention, and Control Committee and involvement.
- Explanations of medication. Follow-up patient information obtained.

**Marketing Department**

- Community Involvement

- Marketing can help the program lead evaluator to identify community leaders necessary for networking, coordinating the exchange of information that includes setting-up meeting times for collaborating and cooperating on the health care needs of the community.
- Cooperation and collaborating aimed at the DRTB program evaluation.
- Create strategies that will allow stakeholders to build partnerships for future community initiatives.
- Aid in keeping the public informed

**Radiology Laboratory**

- Interpreting findings
- Disseminating and implementing findings

- Perform Mantoux tuberculin skin test (TST) for new onset of symptom.
- Interpret the results between 48 and 72 hours after administration.
- Perform CXR and interpret rapid result. Report result immediately
Facilities Management
Environmental

Make sure that environmental controls are in place to prevent the spread of TB in health care organization.

Recognize inadequacies in work practices, environmental controls, or administrative controls.

Use environmental control measures (like filtration and ultraviolet irradiation) are technologically complex and expensive.

Keep all negative air pressure doors and windows closed, and maintain negative air pressure ventilation.

Environmental control measures include the following:

- Ventilation (natural and mechanical),
- Filtration,
- Ultraviolet germicidal irradiation (WHO, 2003)

Pharmacy
Medication Compliance

Explanations of medication. Follow-up patient information obtained.

Contact patient 2 weeks before additional medication is needed.

Notify stakeholders if patient cannot be contacted.

<table>
<thead>
<tr>
<th>Date</th>
<th>Patient Name</th>
<th>Case or Suspect (c/s)</th>
<th>Missed at intake?* (y/n)</th>
<th>Reoccurrence of Symptoms/new symptoms (r/n)</th>
<th>Outcome** (TB, not TB, DRTB,)</th>
<th>Educational and Compliance Material Provided</th>
</tr>
</thead>
</table>

*Missed at intake = symptoms or history detected only after patient enters private room with clinician or counselor instead of upon entry to the facility; or after numerous visits while symptomatic yet undetected: y=yes, n=no

**Outcomes: TB diagnosed or confirmed=TB; DRTB diagnosed or confirmed=TB; ruled out
after diagnostic investigation=not TB. Education on medication compliance provided to patient. Pamphlets, and local, and hospital pharmacy telephone number provided.

Data Analysis and Reporting

Data Collection

Data collection is important to prevent the transmission of diseases and infection. In addition to act with early intervention that includes treatment (Gould, 2011). The current health care system is a rural hospital located in Florida. The health care system will use web-based software to manage, monitor, surveillance, prevention, and reporting efforts of all DRTB cases (Premier, 2011). Surveillance effort will be used to monitor DRTB rates, and to identify changes in the baseline rate that will reveal trends and permit rapid action to control outbreaks (Thacker and Berkelman, 2008).

Currently all stakeholders have access to the computer base surveillance system. The data is placed in the system by all participants who receive ongoing hospital wide DRTB data for collection. The data is analyzed and uploaded in the Web-Based infection control surveillance software. The data is analyzed for hospital public health reportable infections, and will be of tremendous access in disseminating the data for patients entering the organization with DRTB.

Web-Based Data Mining for DRTB

The Web-Based infection control software has the capability to alert infection prevention professionals, and stakeholders with data and real-time tools needed for rapid intervention for hospital acquired infections. In addition the data is used to identify clusters, and outbreaks. The data has the capabilities to provide configurable routine antibiograms, reportable infection rate, and trend (Web-Based, 2011).
Detailed data mining highlights opportunities to enhance efficiency and quality care measures. The result is better patient care and a drive toward improved operational and financial performance (Grota, et al., 2010). Because data mining allows health care organizations to determine what will happen next by a built in technology called modeling. Modeling used in the Web-Based software is the performance of a set of data that allows health care organizations to look at the number of actual DRTB cases and apply that data with other DRTB cases that have not yet come into the health care organization. Therefore, stopping a DRTB outbreak among health care workers and other patient who enters the organization is more cost effective with detailed data mining.

**Economic Evaluation**

**Economic Evaluation Cost Saving of Medication Compliance and Behaviors**

Wiegand, and Wertheimer (2008) states that medication compliance across disease states is generally poor. This DRTB program evaluation is to examine the necessary procedures currently in place at a Florida health care organization. During examination the stakeholders found that the program needed to assist the patients to improve medication compliance. Therefore, the program evaluator implemented in the program evaluation a costs and savings behavioral intervention educational program for poor medication compliance of TB, and DRTB patients. The evaluator acknowledges that the lack of medication compliance efforts for patients must concentrate on both education, and behaviors to improve compliance (Wiegand, and Wertheimer, 2008).

In support of the DRTB program evaluation model design and methods Haynes et al. (2005) supports focus groups and intense counseling as an effective strategies to improve medication compliance among patient with DRTB. Research demonstrates that medication compliance may
still exist among DRTB patients as a result of other factors for example, socioeconomical status. Additionally Wiegand, and Wertheimer (2008) indicates that here is a behavioral component that has a direct link to these individuals routinely taking a medication. The economic cost of medication compliance among patients with DRTB is related to behaviors. For these reason it is imperative for the program evaluator stakeholders to focus the attention on education, and health behavior modification.

**Cost of Medication Non-Compliance**

The cost lack of compliance to medication regimen among DRTB patient varies based on the progression of the disease. Morsanutto et al. (2004) illustrates that lack of compliance to medication management to TB, and DRTB resulted in development of morbidities, and mortalities over time. The cost to manage morbidities for DRTB lack of medication compliance included; prolong hospitalizations, involvement of a multi-disciplinary physician teams, diagnostics treatment, laboratory treatment, and drug therapy. Morsanutto et al (2004) support the program evaluator cost of non-compliance to medication regimen by looking at each patient individually. Once the costs of implementing a behavioral intervention for lack of medication compliance were individually determined, they were compared on a per-patient basis over time to assess if health care dollars could theoretically be saved (Morsanutto et al., 2004).

**Cost of Treating DRTB**

The World Health Organization (2010) estimates the number of DRTB cases is approximately as high as 500,000 individuals annually in the United States. The cost of medication management for DRTB has been acknowledged by health care organization to be 50 to 200 times higher than the cost of treating a drug susceptible TB patient. The overall expense for the DRTB patient includes the cost of multiple medications in addition to the cost for
equipment, diagnostic treatment, labor costs, prevention activities, and patient expenditures.

**Health Care Expenditures for Program Evaluating Cost Analysis**

According to Holmquist, Russo, Elixhauser (2006) in 2006 there were 58,500 hospitals that indicated inpatient services were needed for DRTB patients. DRTB-related inpatients accounted for $752 million in hospital costs in the United States. The current health care organization program under evaluation currently has 23 in-patients of which 15 are uninsured. The average number of out-patient visits monthly for TB related symptoms fluctuate on an average of 63 to 172 monthly of which 30% of the patients seen are uninsured. Note *Table 3* illustrating Florida health care organizations loss revenue for caring for the uninsured.

**The Need for Cost Description and Analysis**

The Centers for Disease Control and Prevention (CDC), (2008) reports that there are direct and indirect cost that are associated with the average inpatient and outpatient treatment of DRTB. In support of the Florida health care organization cost analysis, the cost treating in-patients and out patients cost a health care organization of $19,028 to $25,853 per person, respectively. Because the Florida health care organization is in a rural area of Florida, most of the patient seen at the facility do not have medical insurance or are homeless. Implementing a more extensive behavior and educational program within the Florida Health care organization is imperative to minimize losses.

**The Need for Cost Benefits of Evaluating the DRTB Program**

Based on the needs assessment of the current Florida health care DRTB program in a rural area intervention are needed. The DRTB program may have an increase in revenue if
Program evaluator worked with the CFO to gather above table. Daily average cost for LOS is the cost estimated from 2006. Cost Benefit Analysis

<table>
<thead>
<tr>
<th>Description of Data</th>
<th>Data</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Number of staffed inpatient Negative Air Pressure beds in the hospital*</td>
<td>40</td>
<td>The current health care organization program under evaluation currently has 23 in-patients of which 15 are uninsured.</td>
</tr>
<tr>
<td>(B) Hospital occupancy rate (of staffed beds)*</td>
<td>80%</td>
<td>High occupancy rates may indicate capacity issues, and impact where the program will be most helpful</td>
</tr>
<tr>
<td>(C) Annual bed days</td>
<td>11,680</td>
<td>= (A) x (B) x 365 days</td>
</tr>
<tr>
<td>(D) Average LOS</td>
<td>5.5</td>
<td>= (C) / (E)</td>
</tr>
<tr>
<td>(E) Total Admissions/\text{year}*</td>
<td>254</td>
<td></td>
</tr>
<tr>
<td>(F) Admissions/day</td>
<td>1</td>
<td>= (E) / 365 days</td>
</tr>
<tr>
<td>(G) Estimated % of total admitted patients who would benefit from Medication Management of DRTB Complications</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>(H) Estimated Annual Number of Patients Who Could Benefit from DRTB Medication Management</td>
<td>13</td>
<td>= (E) x (G)</td>
</tr>
<tr>
<td>(I) Assumed Average Hospital LOS for DRTB Complications</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>(J) Assumed Day of Referral</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(K) DRTB Complications Program Average LOS</td>
<td>3</td>
<td>= (I) - (K)</td>
</tr>
<tr>
<td>(L) Assumed Patient Referral Rate Annually</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>(M) DRTB Complications Care Admissions Annually</td>
<td>245</td>
<td>= (H) x (L)</td>
</tr>
<tr>
<td>(N) Total DRTB Complications Care Patient Days Annually</td>
<td>613</td>
<td>= (K) x (M)</td>
</tr>
<tr>
<td>(O) Average DRTB Daily Census Annually</td>
<td>1.7</td>
<td>= (N) / 365 days</td>
</tr>
<tr>
<td>(P) Total Cost of Treatment for in-patient with DRTB Annually</td>
<td>1</td>
<td>$20,000. Daily</td>
</tr>
<tr>
<td>(Q) Total Cost for the Average LOS</td>
<td>110,000</td>
<td>=(D)x(P)</td>
</tr>
<tr>
<td>(R) Florida Health Organization Program Possible Revenue Losses for the Uninsured Per Patient</td>
<td>300,000</td>
<td>20,000.00 Daily per Patient with a current average of 15 uninsured patients = (P)x15</td>
</tr>
</tbody>
</table>
educational and behavioral interventions are implemented in the program. The program should include way for improving medication compliance. According to Wiegand, and Wertheimer (2008) there are fascinating connections and variances between behavioral intervention and methods used by health care organization to improve medication compliance.

The program stakeholders should look at the positive and negative characteristics of each individual when assessing the value both behavioral, and educational interventions otherwise program failures may occur. Safran et al. (1998) illustrates in the effort to improve relationships between the patient and the health care team educational resources on DRTB should be available outside the health care setting. Additionally effective clinician communication is important to achieve positive patient outcomes. The Florida health care organization revenues that will be saved after, including educational and behavioral interventions outweigh the cost to manage the care for inpatient and outpatient diagnosed with DRTB.

**Ethical**

Rabinowitz, Berkowitz, and Brownlee (2012) illustrates that ethics is a code of thinking and behavior characterized by a mixture of personal, legal, moral, and social standards of what one believe is right. The definition of right differs based on a particular individual cultural situation, and belief, its meaning in the context of community health interventions that involves a number of guiding principles. This DRTB program is currently being evaluated because of certain ethical, legal, and health ramifications involved in the controlling and monitoring the potential future outbreaks of DRTB. It would be to the health care organizations demise for this program evaluation to follow unethical principles. As Rabinowitz, Berkowitz, and Brownlee (2012) states that ethical action reflects why the health care organization want to start an intervention in the first place. Evaluation of program usefulness that has a reputation of reliable ethical behavior
may result in the program developing better outcomes in terms of effectiveness. Considering the ethical principles in all aspects of this program evaluation will lead the program to finding the most effective and outcomes and will bring dividends in participation, community support, and funding possibilities (Rabinowitz, Berkowitz, and Brownlee, 2012).

The WHO (2010) illustrates that at present time it is critical to expand access to tuberculosis prevention and care and to control the pandemic as part of a global effort. More disturbing, the further emergence of drug-resistant tuberculosis and HIV associated TB creates well-founded concerns for the sustainable success of current efforts. DRTB continues to be a very extensive and difficulty disease. The current effort of DRTB escalates the concerns associated with the ethics of action, inaction, and specific approaches to clinical, public health and research interventions (WHO, 2012). Therefore, it is imperative that the stakeholders involved in this current program maintain an ethical code of thinking for effectively preventing and control future admissions of DRTB.

Stakeholders should maintain an ethical code of thinking. Maintaining an ethical code of thinking can be through accurate baseline data collection, and monitoring. Church, and Shouldice (2006) states that stakeholders should not express undue expectations involving a program evaluation. Undue expectation can generate excitement, or persuade people to answer questions that may skew the data being collected (Church, and Shouldice (2006). Anyone who is involved in the collection of data should also be aware that his or her actions are often deemed to be an extension of the organization program this is currently being evaluated. Consequently, if a stakeholder behaves inappropriately it can harm the organization’s reputation, and in more serious cases the inappropriate behavior may derail any progress achieved to date from the work
Health care organizations that display consistency in their ethical practices are viewed by the community as being trustworthy, competent, and reliable. All effort should be made by stakeholders to build trust, create an effect open communication line with the community and the participants, stream line easy patient access for all patients needing treatment and education, and avoid high expectations, and biases.

**Equity**

The World Health Organization (2012) indicates that individuals who contact the disease of tuberculosis have a direct linked with poverty and low socioeconomic status. Additionally incidences of DRTB have been associated with socioeconomic factors, such as malnutrition, lack of education, and poor housing and sanitation, compounded by other risk factors such as tobacco and alcohol abuse and diabetes, affect vulnerability to TB and access to care (WHO, 2012). Lack of access has a direct link to behaviors as well as individuals being under, or uninsured. According to, a 2007 study on access to health care by Wen, Hudak, and Hwang (2007) patients entering health care organizations voiced their lived experiences of feeling unwelcomeness in past encounters with health care providers. Cunningham, Sohler, Tobias, Drainoni, Bradford, and Davis, (2006), elaborates that barriers to health care utilization are numerous. These include lack of transportation and health insurance, fear-inducing medical settings, HIV, stigma, disrespect, and prior denials of care, complexity of health care systems and lack of coordination between medical and behavioral services for homeless individuals. Whereas Eberhardt (2001) supports that health status is an outcome of multiple determining factors. The determining factors that can restrict an individual accessing health care include; behaviors, physical and social environments, health care policies, and how these health care policies govern health care
practices, and access to quality health care are predisposing factors that can contribute to the health of people and communities.

Inequalities also exist when all patients do not have access to care that meets the standards for “best practice”. These inequalities and predisposing factors makes it difficult for the underserved and at-risk populations to seek health care and comply with health care treatment regimen. The underserved, and at risk populations include minority groups, women, homeless, elderly, children, minority individuals or groups, residents of rural areas, low-income groups, and individuals with special healthcare needs varying across regional and geographical areas of the country (Graves, 2009). With the above supporting equitable access the program evaluation team should develop a process to reach individuals in the community suffering from any of these multiple disparities. Dunkin (2000) illustrates that outcomes are complementary in measuring access, especially for complex chronic health problems and can provide insight about barriers that may impede access to services (pp. 61-72). Given these multiple, unequal risk factors for DRTB, control of the disease (and the aim to achieve elimination) will require that the program evaluation stakeholders collaborate to include a multi-dimensional and cross-sectorial approach.

**Leadership Considerations**

Community involvement is the key for the betterment of the community. According to, the National Prevention Strategies (2011) community development must be reinforced by values of social justice, self-determination, solidarity, collaborative working, participation, and equality. Attempting to rectify the health and social inequality issues requires leadership (stakeholders) to create a multidimensional and inter-professional approach through participation and empowerment of program stakeholders, participants, and communities. A multidimensional and inter-professional approach should collaborate with the community to build partnerships that
include all stakeholders and focus on the multiple causes of behaviors related to the multiple
DRTB strains. The multidimensional and inter-professional approach should also focus on
improving access for DRTB patient for health care. Community collaboration must include
program activities that will allow people to mobilize and develop their potential, leading to an
ongoing ability to recognize and respond to their own problems (National Prevention Strategies,
2011).

Leaderships Role with Managed Care and Health Care Policies, and the Uninsured
Managed Care

The role of managed care is to place administrative control over cost of, quality of, or access
to health care services in a specific population of covered enrollees (Jecker, & Braddock, 2008).
For example, elderly individuals enrolled in an HMO’s, Managed care option. Managed care can
change interactions between doctors and patients in multiple ways. For example, health
maintenance organizations pay only for care provided by their own physicians. Preferred
provider groups restrict access to physicians by paying a smaller percentage of the cost of care
when patients go outside the network. These restrictions limit patients' ability to establish a
relationship with the physician of their choosing (Jecker, & Braddock, 2008). These restrictions
also create a dilemma when trying to seek health care for symptom related illness associated with
DRTB. Jecker, & Braddock, (2008) illustrates that some forms of managed care create a
financial incentive for doctors to spend less time with each patient. Leadership with have to
incorporate in their multidimensional and inter-professional approach a system that will follow-
up with community partnerships involved treating the managed care patient with DRTB. These
practices can be viewed as unethical, because the community partnership preferred providers
may be compensated for reduced fees-for-services by seeing more patients, less time will be
allocated to discuss patients' problems, explore treatments options, and treatment management for DRTB. Leadership (stakeholder) involvement is imperative for all suspected patients admitted to community-based partnerships.

**Health Care Policy**

Under the Emergency Medical Treatment Active Labor Act of 1986 (EMTALA) requires hospitals in the United States participating in Medicare to provide emergent treatment to the uninsured, at risk populations. These hospital emergency rooms must grant emergent treatment regardless of the individual’s ability to pay (United States General Accounting Office, 2001). If an individual enters the emergency with DRTB symptom, no address, and uninsured the program evaluator must be notified and treatment must commence. The United States general accounting office, and Congress recognized in the late 1980s that existing health care programs were not effectively meeting the needs of at risk populations (United States General Accounting Office, 2000). The Congress concerns about the aptitude of these at risk populations to obtain assistance through federal mainstream programs looked at ways to improve federal government programs. In the effort to improve access to the health care the federal government focused on in-depth barriers to mainstream homeless programs (United States General Accounting Office, 2000). Communicating health care policies to all involved stakeholders must also be incorporate in the multidimensional and inter-professional approach system.

**Leadership and the Center for Disease Control and Prevention Involvement**

Partnerships will be very important for this DRTB program evaluation. However, it is also imperative that the program leadership team incorporate the Center for Disease Control and Prevention 2006 guidelines for program activities. The most important activities for this DRTB program are resources. Resources and patient access for DRTB program are as follows:
1. Educational material and resources used by the DRTB program

2. Community resources that will have available names and telephone number of where participants can get treatment for symptom of Tuberculosis that includes:
   a. Partnerships with other health care providers
   b. Local Hospitals
   c. Private Clinics. For example, HIV, alcohol, and drug treatment centers.
   d. Local advocacy groups such as the American Lung Association (CDC, 2008).
   e. Transportation within a 25-mile radius at no charge for initial, and follow-up treatment

Additional program activities will be aligned the Center for Disease Control, and Prevention (2006) includes:

1. Conducting overall planning and development of policy
2. Identifying persons who have clinically active TB
3. Managing the assessment, problem identification, planning, implementation, and evaluation of the patient’s psychosocial factors related to TB diagnosis
4. Identifying and managing persons infected with M. tuberculosis
5. Providing laboratory and diagnostic services
6. Collecting and analyzing data
7. Most important Providing training and education to patients, providers, and the community (CDC, 2006).

**Leadership and Program Activity Outcomes**

The general outcomes for this DRTB program activity are the changes in persons or the community that results from acquiring DRTB. By the sixth months into the program evaluation
after implementing the activities that will include community involvement;

**Short-Term Goals**

a. There should be changes identified in patient or provider knowledge, attitudes, beliefs, or behavior towards DRTB.

b. There should be an increase in patient adherence to medication compliance, and follow-up health care visits.

**Long-Term Goal**

a. A noted decrease morbidity and mortality among foreign-born persons with DRTB (CDC, 2005).

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**Implementing and Monitoring Strategies**

**Implementation**

The implementation of this program evaluation will be given at a department head meeting. The department will invite all internal stakeholders who may be involved in the implementation process. Previous meeting held with community leaders did not give an implementation date; therefore, the market department will set up a meeting within five business day to discuss targeted implementation date. A bulletin will be created as an addendum to the local Public Health department weekly newsletter; in addition the program will be marketed and circulated throughout the health care organization. Department head will meet back with their staff and document in the minute’s the actual date of implementation. Patient educational material will be
disseminated in English, Spanish, and Creo regarding the program and the start date of the program.

Important key program details in collaboration with the CDC (2005) DRTB guidelines that will be addressed for the implementation of the program and the community involvement are continuous:

1. Participation, trust, and open communication among community partnership provider, stakeholder, and community are essential.
2. Inter-sectorial collaboration
3. Implementation will facilitate community partnership, participants, and all involved stakeholders.
4. Implementation will be future oriented and work towards sustainability
5. Create possibilities for change, flexibility, and shared governance for the development, and expansion of the program.
6. Stress the relevance and meaningfulness of the DRTB program, support, and cooperation with key public officials, community leaders and the people concerned.
7. Note that health care program evaluations, if structured well be able to become health care laws, and written into health care policies (Moniz, and Gorin, 2007).

Timeline and Monitoring Strategies

Timeline

The intent of this Drug Resistant Tuberculosis (DRTB) support program evaluation is to prevent, examine, and control the transmission existing DRTB among populations in a rural Florida satellite hospital with the use of formative evaluation. It is imperative that all involved stakeholder approve program commencement within five days after meeting with community
partnerships. The reason why this program must commence immediately is to prevent and control the transmission of DRTB. If the program evaluator would like to propose commencement prior to the five days, the health care organizations stakeholders, and the local public health department are in agreement.

**Monitoring Strategies**

After commencement the ongoing monitoring of this DRTB program will be aligned with the CDC (2005) guidelines and will involve;

a. Weekly, and as needed meeting to determine the effectiveness of the program with community partnerships, and stakeholders for two months.

b. Continual communication of roles and relationships

c. Continued monitoring and negotiation of community partnerships, and stakeholders professional roles

d. Monitoring of community partnerships and their roles in aiding in communication and educating participants for two months and as needed

e. Continual monitoring of community health care provider partnerships for follow-up treatment protocols for two months and as needed.

f. Work with the community and other stakeholders to identify community needs and to design, implement, manage, and evaluate a sustainable DRTB, and TB program at the community or population level that address health inequalities, access, uninsured, and/or health promotion/prevention/rehabilitation

g. Recognize opportunities for the program to develop into a law that can assist other states health care organizations suffering from a similar disparity.
h. Work towards development of existing services, including opportunities for services to become part of local social networks

i. Engage in an educational process to deliver professional knowledge to all participants, community partners, and stakeholder that will facilitate the process of desired change in behaviors that may yield to excellent outcomes.

j. Involve key governmental agency for revenue purposes and reimbursement.

Conclusion

This Drug Resistant Tuberculosis (DRTB) support program evaluation was created to prevent, examine, and control the transmission existing DRTB among populations in a rural Florida satellite hospital with the use of formative evaluation. However human capital was excluded in the cost analysis because the implementation of this program will be added to stakeholders other duties that apply in his or her daily work duties. As previous mentioned above the format of this program evaluation can be used to evaluate any health care program.
References


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