

## **2016 Pharmacist Role in Team-based Care for Diabetes and Hypertension**

**Satellite Conference and Live Webcast  
Wednesday, May 18, 2016  
2:00 – 4:00 p.m. Central Time**

**Produced by the Alabama Department of Public Health  
Video Communications and Distance Learning Division**

## **Pharmacists' Role in Diabetes and Hypertension Management**

**Camille Quiles, PharmD  
Auburn University  
Harrison School of Pharmacy  
Pharmacy Health Services**

### **Disclosure / Conflict of Interest**

- I, Camille Quiles, have no actual or potential conflict of interest in relation to this program

### **Objectives**

- Brief background on Diabetes and HTN
- Diabetes in the United States and Alabama
- HTN in the United States
- Diabetes Complications
- Diabetes and HTN
- Pharmacists' role in a collaborative care team

### **Objectives**

- Pharmacists and Medication Therapy Management
- Disease Education and Medication Counseling
- Lifestyle Management Counseling

### **Diabetes?<sup>1</sup>**

- Diabetes is a chronic condition that hinders the body's ability to use carbohydrates in food as an energy source, resulting in high blood sugar

## Hypertension<sup>11</sup>

- Hypertension occurs when the pressure of the blood in your vessels is higher than it should be
  - This raises the heart's workload and can cause serious damage to the arteries over time if left untreated

## Diabetes and Hypertension - A Bad Combination!<sup>2-5, 8, 12-14</sup>

- Diabetes remains the 7th leading cause of death in the U.S. (2010)
- Hypertension is the primary or contributing cause of death for more than 360,000 Americans (2013)

## Diabetes and Hypertension - A Bad Combination!<sup>2-5, 8, 12-14</sup>

- Serious Complications associated with Diabetes:
  - Heart Disease and Stroke
  - Blindness
  - Kidney Disease / Failure
  - Non-traumatic lower-limb Amputations
  - Periodontal Disease



## Collaborative Care Team<sup>7</sup>

- Collaborative Drug-Therapy Management (CDTM)
  - Physicians and pharmacists develop a protocol
  - Pharmacists are able to:
    - Perform patient assessments
    - Order medication-related laboratory tests

## Collaborative Care Team<sup>7</sup>

- Administer medications
- Select, initiate, monitor, and adjust medication therapy regimens
- Significant variability in CDTM agreements

## Collaborative Care Team: Pharmacists' Role<sup>7</sup>

- Asheville Project (1996)
  - Employer-sponsored pilot project in Asheville, North Carolina
  - Essential Elements of the project:
    - Employees made regular visits with a network of trained community pharmacists for care monitoring and counseling

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Employer paid pharmacists for pharmaceutical care services
- Waived co-pays on diabetes medication and supplies for participants

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Asheville Project (Cont.)
  - Services provided by pharmacists:
    - Setting and monitoring diabetes treatment goals
    - Home glucose meter training
    - Adherence strategies

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Physical assessment of patient's feet, skin, BP and weight
- Diabetes and lipid management education
- Patients were referred to their physician or diabetes education center as needed

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Asheville Project (Cont.)
  - Clinical and Financial outcomes:
    - Mean HbA1c values and lipid levels decreased
    - At 6 months, 24.3% more patients had optimal HbA1c values compared to baseline

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- ED visits occurred at a rate one-third the national average
- Total direct medical costs savings: Approximately \$1600 to \$3300 per participant
- 41% avg reduction in participant sick days

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Employer return on investment was 4:1 for diabetics

### **Collaborative Care Team: Pharmacists' Role <sup>7</sup>**

- Diabetes 10-City Challenge (2006)
  - Innovative program for employers and communities to fight diabetes and reduce health care costs
  - Incentivized voluntary health benefit for employees and dependents to encourage management of their diabetes

### **Collaborative Care Team: Pharmacists' Role <sup>7,8</sup>**

- Diabetes 10-City Challenge (Cont.)
  - Clinical Outcomes:
  - Significant improvements were observed for key clinical measures over 1 year:
    - Decreases in:
      - A1c (mean change - 0.4%)

### **Collaborative Care Team: Pharmacists' Role <sup>7,8</sup>**

- LDL-C (mean change - 3.4 mg/dL)
- SBP and DBP (mean change – 2.4 mmHg)
- BMI (mean - 0.4 kg/m<sup>2</sup>)
- Influenza vaccination rates increased
- Eye and Foot examinations increased

### **Collaborative Care Team: Pharmacists' Role <sup>7,8</sup>**

- Diabetes 10-City Challenge (cont.)
  - Financial Outcomes:
  - Savings of ~\$900/employee in total healthcare costs (yr 1)
  - 50% reduction in absenteeism
  - Fewer workers' compensation claims

### **Collaborative Care Team: Pharmacists' Role <sup>7,8</sup>**

- High employee satisfaction (95% approval for pharmacist)
- Improved QOL
- Average employees savings of \$400 to \$600/yr with incentives (eg. waived copays)

### **Collaborative Care Team: Pharmacists' Role <sup>9</sup>**

- Pharmacist-provided MTM for Diabetics (2005)
  - Pharmacist counseling at 6-month intervals focusing on:
    - Diabetes education
    - Diabetes therapy and management education

### Collaborative Care Team: Pharmacists' Role <sup>9</sup>

- Established personalized goals for therapy
- Comprehensive medication review
- Counseled on lifestyle choices and medication adherence

### Collaborative Care Team: Pharmacists' Role <sup>9</sup>

- Discussed recommendations with patients and prescribers when medication changes were made and warranted

### Collaborative Care Team: Pharmacists' Role <sup>9</sup>

- Pharmacist-provided MTM for Diabetics (2005)
  - Clinical Outcomes:
- A1c:
  - Higher risk patients had improved glycemic control at 6 and 12 months

### Collaborative Care Team: Pharmacists' Role <sup>9</sup>

- BP:
  - Overall, SBP showed a significant 5 mmHg decrease
  - Patients with higher SBP showed a significant decrease throughout the study (-6 mmHg at 6 months, -12.5 mmHg at 12 months)

### Collaborative Care Team: Pharmacists' Role <sup>9</sup>

- Dental and Podiatry visits
  - Significant favorable change observed for dental and podiatry visits after 1 year

### Pharmacists' Role <sup>2,7,10</sup> Medication Management

- Design drug and monitoring regimens
- Recommend adjustments to medication therapy for patients not at goal
- Optimize medication regimens
- Simplify or manage complex drug regimens
- Adherence assessment and strategies

**Pharmacists' Role** <sup>2,7,10</sup>  
**Medication Management**

- Recommend cost-effective medications
- Perform drug interaction reviews

**Pharmacists' Role** <sup>2,7,10</sup>  
**Patient / Education Services**

- Disease education
- Discuss rationale of drug therapy choice
- Proper medication use
- Medication administration
- Medication storage
- Adverse reactions

**Pharmacists' Role** <sup>2,7,10</sup>  
**Patient / Education Services**

- Lifestyle counseling
- Home Glucometer training
- Provide vaccinations
- Recommendations to specialists
- Perform biometric screening

**Medication Management**

- Design drug and monitoring regimens
- Recommend adjustments to medication therapy for patients not at goal
- Optimize medication regimens



**Medication Management**

- Simplify or manage complex drug regimens
- Adherence assessment and strategies
- Recommend cost-effective medications
- Perform drug interaction reviews



**Patient Education**  
**Disease Education**

- Patients must have a basic understanding of the disease to make informed decisions about their medications<sup>15</sup>
- Allows for the discussion of the rationale behind drug therapy choices
- Pharmacists are easily accessible health experts

### **Patient Education Medication Counseling**

- Proper medication use
- Medication administration
- Medication storage
- Adverse reactions



### **Self Management / Services**

#### • Lifestyle Management

- Nutrition
  - Diabetic Friendly Diet
  - DASH diet and sodium reduction
- Physical Activity
- Weight Loss



### **Self Management / Services**

- Home Glucometer Training
- Provide Vaccinations
- Recommend Specialists
- Perform Biometric Screenings

### **Pharmacists' Impact on Diabetes and Hypertension Management**

- Clinically significant benefits in diabetes and hypertension management when integrated into the healthcare team
- Assist in providing optimal medication management
- Easily accessible health experts able to provide health education and medication counseling

### **Pharmacists' Impact on Diabetes and Hypertension Management**

- Provide various types of lifestyle management counseling
- Provide various types of services essential to diabetes and hypertension care

### **References**

- Quiles, C. (2015). Lunch and Learn: Diabetes [Powerpoint slides]. Retrieved from <http://www.elseib.org/PDF/Wellness/LunchLearn/2015-03.pdf>
- National Diabetes Education Program (NDEP). (2016). Working together to manage diabetes: a toolkit for pharmacy, podiatry, optometry, and dentistry [Powerpoint slides]. Retrieved from <http://www.cdc.gov/diabetes/ndep/toolkits/ppod.html>
- CDC. National Diabetes Statistics Report 2014. Estimates of diabetes and its burden in the United States, 2014. Atlanta, GA: US Department of Health and Human Services. Centers for Disease Control and Prevention, 2011. Available at <http://www.cdc.gov/diabetes/data/statistics/2014statisticsreport.html>

## References

- American Diabetes Association. (2015, May 18). Statistics About Diabetes. Retrieved April 13, 2016, from <http://www.diabetes.org/diabetes-basics/statistics/?loc=superfooter>
- Data and Statistics about Diabetes. (2015, December). American Diabetes Association Fast Facts. Retrieved April 13, 2016, from [http://professional2.diabetes.org/admin/UserFiles/0-Sean/Documents/Fast\\_Facts\\_12-2015a.pdf](http://professional2.diabetes.org/admin/UserFiles/0-Sean/Documents/Fast_Facts_12-2015a.pdf)
- United States Diabetes Surveillance System, CDC Division. (n.d.). Diagnosed Diabetes. Retrieved April 13, 2016, from <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html#>

## References

- Smith, M. (2009). Pharmacists' Role in Improving Diabetes Medication Management. *Journal of Diabetes Science and Technology*, 3(1), 175-179. doi:10.1177/193229680900300120
- Fera, T., Bluml, B. M., & Ellis, W. M. (2009). Diabetes Ten City Challenge: Final economic and clinical results. *Journal of the American Pharmacists Association*, 49(3), 383-391. doi:10.1331/japha.2009.09015
- Pinto, S. L., Bechtol, R. A., & Partha, G. (2012). Evaluation of outcomes of a medication therapy management program for patients with diabetes. *Journal of the American Pharmacists Association*, 52(4), 519-523. doi:10.1331/japha.2012.10098
- Quiles, C. (2016). Pharmacists' role in hypertension management. [Powerpoint slides].

## References

- High Blood Pressure Pictures: Symptoms, Causes, Tests and Treatments. (2014, April 15). Retrieved February 10, 2015, from <http://www.webmd.com/hypertension-high-blood-pressure/ss/slideshow-hypertension-overview>
- Centers for Disease Control. (2014, September 24). Blood Pressure: Make Control Your Goal Infographic. Retrieved April 14, 2016, from <http://www.cdc.gov/bloodpressure/infographic.htm>
- Centers for Disease Control. (2015, February 19). High Blood Pressure Facts. Retrieved April 14, 2016, from <http://www.cdc.gov/bloodpressure/facts.htm>

## References

- Stratton, I. M. (2000). Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): Prospective observational study. *Bmj*, 321(7258), 405-412. doi:10.1136/bmj.321.7258.405
- Albrecht, S. (2011, May 18). The Pharmacist's Role in Medication Adherence. *U.S. Pharmacist*, 36(5), 45-48.