Reduction of Adverse Drug Events in the Medicare Population in Texas through Partnership with the Health Resources Services Administration (HRSA) Patient Safety Clinical Pharmacy Services Collaborative (PSPC) Project
TMF ADE Project Overview & Objectives

- TMF, as the quality improvement organization (QIO) for Texas, through a contract with the Centers for Medicare & Medicaid Services (CMS), is partnering with the Health Resources Services Administration (HRSA) Patient Safety & Clinical Pharmacy Services Collaborative (PSPC) 6.0 Project.

- This project focuses on a number of drugs (warfarin, type 2 diabetes mellitus medications and atypical antipsychotics) to reduce adverse drug events (ADEs) in the elderly.
TMF ADE Project Overview & Objectives

- TMF currently works with seven HRSA PSPC 6.0 ADE teams across the state comprised of physicians located at federally qualified health clinics, nursing homes, for-profit clinics and county hospital districts. This impacts almost 600 patients.

- Each ADE team works on reducing ADEs, potential ADEs (pADEs) and increasing lab testing and improved results associated with these medications ($A_1c$ for diabetes and international normalized ratios (INRs) for warfarin).
HRSA PSPC 6.0 Project Objectives

Participation by all of the ADE teams in Texas require they join the HRSA PSPC 6.0 collaborative and engage by:

- Enhancing care coordination among the providers and partners involved
- Fostering multidisciplinary, team-based care approach
- Strengthening patient centered medical home
- Integrating medication management and other services to minimize harm related to adverse drug events and maximize optimal health outcomes
In order to meet many of these PSPC strategies, TMF only recruited those organizations that either had physicians enabled with health information technology (EHR, computerized patient order entry (CPOE) and e-prescribing) or ready access to a data warehouse that could pull medical and pharmacy data.

TMF worked to establish measure sets for the data parameters of Adverse Drug Event (ADE) and potential Adverse Drug Event (pADE) as these were left to the QIOs to define for the ADE project.
Definitions of ADE and Potential ADE (pADE)

**ADVERSE DRUG EVENT (ADE):**
“Injury resulting from the use of a drug”

**ADVERSE DRUG REACTION (ADR):**
“Harm directly caused by a drug at normal doses, during normal use.” (aka Side Effects)

**MEDICATION ERROR:**
“A preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of a healthcare professional, patient, or consumer.”

**POTENTIAL ADVERSE DRUG EVENT (pADE):**
“Medication errors that are stopped before harm can occur, i.e., near misses”

Setting data definitions of ADEs & pADEs

Working closely with clinical pharmacy experts at the University of Texas at Austin – School of Pharmacy and the University of Texas Health Science Center at San Antonio – School of Medicine, TMF set data definitions as:

- ADE based on diagnoses codes associated with the drug cohorts (e.g. gastric bleed with warfarin).
- pADE based on the therapeutic duplication of a drug or a drug-drug interaction (e.g. warfarin with amiodarone causing an elevated INR).
ADE Data Set Transfer to TMF

- TMF worked with the teams to define an inclusive ADE data set that included medical, laboratory and pharmaceutical data.
- ADE data from the teams was transferred as either encrypted disks or via CMS’ Quality Net Exchange encrypted web portal to ensure a secure and expedited method of data transfer.
Development of ADE Reports for Partner Organizations

- Monthly ADE data sets were requested from the teams to be sent to TMF by the 10th of each month allowing time for these data to be reviewed, analyzed and then developed into organizational, clinic and individual ADE physician level reports.

- This quick turnaround allowed for TMF to share and monitor real-time data with the ADE community teams.
Example of Physician-level ADE Reports for Oral Hypoglycemics
Pairing ADE reports with Quality Improvement Activities

- Review of quarterly ADE community team organizational and physician-level reports with clinical leadership and targeted physicians in face-to-face meetings.
- Use of TMF variance analysis reports by ADE community team to identify physician outliers for ADE, pADE, INR and A1C for quarterly meeting discussion and to adjust for improvement.
- Use of inpatient admission ADE reports to identify associated admissions, potential cost and quality of life issues for ADE community teams.
Use of Evidence-Based Physician Tools Paired with ADE Reports

- TMF shares interventions that are based on the needs of the ADE community teams as evidenced in the improvement activities on lab testing (A1C and INR).

- Examples include American College of Chest Physicians – *Chest* Guidelines 2012 for warfarin therapy and the American Diabetes Association annual “Standards of Medical Care in Diabetes” for oral hypoglycemic agent use.
Diabetes Clinical Practice
Recommendations for Adults at a glance: 2014 (ADA Guidelines)
Your Blood Glucose Numbers

<table>
<thead>
<tr>
<th>Number (eAGm/dl)</th>
<th>Percent A1C</th>
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<td>97</td>
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Your blood glucose number:

Your A1C:

Number of your blood glucose for the past three months.

This is your average blood glucose right now.

Good is less than 7%.

Test regularly throughout the day.

Your # is ___________.

Your goal for next visit is ___________.

Su número de glucosa en la sangre:

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Su número de glucosa en la sangre ahora.

Bueno es menos de 140 mg/dl.

Hágase pruebas regularmente durante todo el día.

Su A1C:

Esta es la glucosa promedio en su sangre durante los últimos tres meses.

Bueno es menos de 7%.

Su médico pondrá a prueba su A1C por lo menos cada seis meses.

Su objetivo para la próxima visita es ___________.

Su # es ___________.

Su objetivo para la próxima visita es ___________.

Phone 1-800-725-2633
Fax 1-877-666-1070
www.tmf.org

Maintained by Metric Logic, Eugene, Oregon, Austin, Texas
TMF Patient Engagement Tool Examples

**How Do My Medicines Work?**

- **Muscle Cells**
  - Pioglitazone (Actos)
  - Makes muscle cells more sensitive to insulin

- **Liver**
  - Metformin (Glucophage)
  - Slows glucose release from liver

- **Liver and Pancreas**
  - Sitagliptin (Januvia)
  - Helps balance insulin levels between the liver and the pancreas

- **Insulin**
  - Used when your pancreas cannot make enough insulin

- **Intestines**
  - Acarbose (Precose, Glyset)
  - Slows breakdown of food

**¿Cómo Trabajan mis Medicinas?**

- **Células Musculares**
  - Pioglitazone (Actos)
  - Haz que las células musculares sean más sensibles a la insulina

- **Hígado**
  - Metformin (Glucophage)
  - Ayuda a regular los niveles de insulina en el hígado y el páncreas

- **Intestinos**
  - Acarbose (Precose, Glyset)
  - Reduce la velocidad de la degradación de los alimentos
Additional TMF Quality Improvement Activities with Partner Organizations

- TMF has held monthly and quarterly webinar events with all of the ADE teams hosted by state and nationally recognized topic experts. (e.g. Member of the ACCP Chest Guideline Technical Expert Panel on anticoagulation care)

- TMF has supplied the *TMF Health Quality Institute Adverse Drug Event (ADE) Tool Kit* for every physician in every ADE community team. These include both physician and patient tools that promote medication therapy management, service pathway protocols, and warfarin and Type 2 diabetes and antipsychotic drug information.
Recent TMF cumulative results on the established ADE measures have shown that improvement is trending in the appropriate direction for the ADE teams on the HRSA PSPC ADE project:

- ADE results show a 93.8% and 84.2% relative improvement rates from baseline for warfarin and oral hypoglycemic agents, respectively.
- Lab test for A1cs show 64.9% are in range and 67.3% of patients had a monthly INR.
About TMF

TMF Health Quality Institute focuses on improving lives by improving the quality of health care through contracts with federal, state and local governments, as well as private organizations. For more than 40 years, TMF has helped health care providers and practitioners in a variety of settings improve care for their patients.
About the QIO Program

Leading rapid, large-scale change in health quality:

- Goals are bolder.
- The patient is at the center.
- All improvers are welcome.
- Everyone teaches and learns.
- Greater value is fostered.
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