Our nation needs a health care system that delivers high value and clinical excellence across the continuum of care. As one of the nation’s largest health care providers, we provide policymakers with suggestions to advance efforts that transform America’s health through policy. At the same time, we implement our own transformation efforts. Trinity Health has taken many steps to innovate in order to deliver higher value care to more individuals in our communities. And we are not done yet. We look forward to more transformative work as the system transitions from volume-based to value-based reimbursement.

Today, policymakers are considering many options for achieving the triple aim of higher quality, lower costs, and a better patient experience in health care. Through our work, Trinity Health has identified innovative solutions that utilize evidence-based practices to generate better, safer and more cost-effective outcomes that meet this goal. Our successful models can be replicated across the country.
Investing in Transformative Technologies
- Since 2000 Trinity Health has invested $1 billion to create and implement “Genesis,” a Cerner-based electronic health record (EHR) platform throughout 33 acute-care hospitals with more on track to “go live” this year.
- Trinity Health will invest an additional $200 million as we add technologies that address care in the ambulatory settings and population health management beginning in FY2013.

Creating Transformative Structures
- Established a Unified Clinical Organization (UCO), bringing multi-disciplinary teams together in a single structure to:
  - Reduce inappropriate variability in treatment
  - Leverage intellectual capital
  - Rapidly replicate innovation
  - Build on existing high-performance
  - Share accountability
  - Make data-driven decisions
  - Deliver seamless care across the continuum
  - Advance a culture of safety, with a goal of achieving zero clinical defects

Leveraging the Power of Electronic Health Records and Evidence-Based Medicine
- **Leading the nation**
  - Recognized by the prestigious InformationWeek500 for two consecutive years — according to these rankings in 2011 and 2012, Trinity Health was one of the most innovative health care providers in the nation and among the most effective IT users for all business sectors overall.
  - One of the first — and largest — providers in the nation to implement an EHR platform and to attest to Meaningful Use.
  - Created one of the largest comprehensive data repositories in the United States, managing more than 10.5 million patient records and nearly 1.2 million clinical orders per year.
  - Worked collaboratively with employed and private-practice physicians to achieve an average Computerized Physician Order Entry (CPOE) rate of 85%.

- **Aligning technology and clinical processes to standardize care**
  - Clinical and technology specialists are building evidence-based practices into the EHR as Interdisciplinary Plans of Care (IPOCs).
  - Using 139 IPOCs for disease states including pneumonia and sepsis, and for departmental areas, like Behavioral Health, Cardiology, and Obstetrics.
  - IPOCs are now implemented in over 93 percent of admitted patients; and the use is associated with a 35% lower severity-adjusted mortality index, compared to patients treated without IPOCs.
  - Medication administration is verified by barcode at the point of care 94% of the time, reducing medication errors at the time of medication administration by 39%.
  - The physiologic vital sign capture and charting process is automated in both intensive care units and post-anesthesia care units. This automation increased accuracy and reduced the time nurses spend capturing and charting physiologic vital signs by as much as 90% in some care unit settings.
  - The EHR is leveraged to rapidly establish system wide protocols for complying with FDA and CDC guidance.

- **Increasing patient safety, improving outcomes, saving lives**
  - Increased nursing time with patients at the bedside by about 8%, providing more opportunity for patient-centered care.
  - Reduced the time it takes to deliver emergent medications by 40%.
  - Reduced pressure ulcer rates from 3.8 percent to 0.8 percent in FY2011.
  - Decreased incidence of ventilator-associated pneumonia from 2.25 percent to 0.60 percent.
  - Lowered the risk of central line blood stream infections from 1 percent to 0.75 percent.
  - Brought down severity adjusted mortality rate to 64 percent of the expected rate.

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**ACHIEVING A LEARNING HEALTH CARE SYSTEM** — one in which science, informatics, patient-clinical partnerships, incentives and culture are aligned to promote and enable continuous and real-time improvement in both the effectiveness and efficiency of care — is both necessary and possible for the nation, according to a recent Institute of Medicine report.1

Trinity Health is well on its way toward realizing this vision in the communities we serve, and we welcome the opportunity to replicate our successful models across the country.

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**UCO GOAL:** Consistent delivery of the highest quality, safest and the most efficient care for every patient, every time, in every Trinity Health location.
Lowering the cost of care by increasing its value

- Using quality and safety initiatives to decrease the severity of patient illness, degree of care needed, and length of hospital stays
- Eliminating costly medical errors, for example the occurrence of pressure ulcers — the most common medical error nationally. On a national level, these reductions come with an estimated savings of $8,730 per case.\(^{(2)}\)
- Reducing adverse events
- Optimizing operations to reduce waste, streamline care and improve patient health
- Turning evidence found in EHR data into quality and safety solutions
- Advancing our EHR with meaningful adaptations that lead to greater efficiency and better patient outcomes

Transforming When it Matters Most: Our Case Studies

Medication Reconciliation

**Problem:** Medication errors can cause illness and death. Medication reconciliation, a regimented, documented review process, is therefore needed each time a patient is admitted, transferred and discharged and, additionally, at all patient encounters except those where medications are not addressed in the care provided (e.g. lab draw, non-invasive x-ray).

**Solution:** 70 clinicians and operational leaders from throughout the enterprise gathered as part of a UCO focus group on medication reconciliation. Three break-out groups — for admission, discharge and transfer functions — convened to review, refine and enhance current medication reconciliation processes.

**Outcome:** By implementing new patient-centric processes as well as related rules, fields and notes in the EHR, the UCO improved workflow for clinicians leading to safer care for patients and achieved:

- A 34% reduction in medication-related errors since implementation
- A $3.4 million cost reduction associated with improvements (based on 2006 IOM estimated $57.50 cost per medical event)
- Medication Reconciliation composite score (both admission and discharge) of 80 percent (92 percent for discharge alone)

Sepsis

**Problem:** Sepsis is a major cause of morbidity and mortality worldwide.

**Solution:** Over 200 nurses, physicians, pharmacists, and other clinicians across Trinity Health met to learn, identify goals and find innovative ways to implement evidence-based practices in the care of patients with sepsis, severe sepsis, and septic shock. Subsequently, they formed Sepsis Teams in each hospital to implement their findings and their recommended EHR-based tool which includes:

- Continuous screening for indications of sepsis and severe sepsis
- Sepsis alerts to nursing personnel and physicians
- Checklists and reminders
- Evidence-based antibiotics/dosing standards for 12 sources of infection
- A critical events summary (real-time viewing of critical clinical patient data)
- Reports on quality and outcomes

**Outcome:** Interventions reduced the progression of sepsis cases significantly, leaving more patients in the lower severity category, reducing mortality and reducing average length of stay. In fiscal years 2011 and 2012 this work saved over 500 lives (reducing the mortality rate from 15.8% to 13%) while simultaneously reducing the direct cost of caring for these patients by over $22 million.
Fungal Infection Outbreak

Problem: A multistate outbreak of fungal meningitis and other infections threatened patients who received contaminated steroid injections in 23 states, resulting in many illnesses and deaths. Many patients were asymptomatic for long periods of time after exposure and, therefore, unaware of the risk to their health from either fungal meningitis or other fungal infections associated with injection sites, both spinal and peripheral (for instance, knee, shoulder or ankle).

Solution: St. Joseph Mercy Hospital – Ann Arbor, a ministry of Trinity Health, quickly became an area expert and worked closely with our infectious disease experts, the Centers for Disease Control and Prevention, and the Michigan Department of Community Health to develop diagnosis and treatment protocols for these difficult cases. Once the protocols were known, we leveraged the power of our EHR to rapidly identify patients, diagnose them quickly and provide immediate recommendations for the best possible treatments.

Outcome: Responding aggressively and with compassion and competence to ensure affected patients received the safest and highest quality care possible, we:

- Created new triage screening processes for all patients visiting Trinity Health emergency departments
- Rapidly established two standard treatment plans — one for clinics and community hospitals and the other for Emergency Departments — across the entire system in pursuit of patient safety
- The treatment plans specify the most appropriate lab orders and medications to identify and treat fungal infections, ensuring the best possible outcomes
- Evolved standardized treatment plans based on experience with patient side effects
- Contributed to saved lives with lower death rates than expected by the Center for Disease Control during this unprecedented public health crisis

Special Note: St. Joseph Mercy Hospital Ann Arbor, a member of Trinity Health’s Saint Joseph Mercy Health System, treated more than 170 fungal infection cases in the last months of 2012 — 25% of the cases in the nation. The hospital and Trinity Health responded rapidly and collaboratively, to identify, contact and treat those whose lives and health may have been threatened by contaminated medications from the New England Compounding Structure. Support in addition to the measures described above included creating a dedicated fungal outbreak clinic, providing additional nursing staff to support the hospital operating at full capacity, and providing care for the caregivers. From the beginning, St. Joseph Mercy Ann Arbor established itself as a leader in fungal infection care with early identification, excellence in care and the sharing of their learnings.

Endnotes