University of Iowa Health Care

Presentation to

The Board of Regents, State of Iowa

October 19-20, 2016

Agenda

Today's Presentation

Opening Remarks

Operating and Financial Performance

Strategic Planning

Faculty Presentation: "Infection Prevention Starts at Iowa"

OPENING REMARKS

Jean Robillard, MD

Vice President for Medical Affairs
& Dean, Carver College of Medicine

OPERATING AND FINANCIAL PERFORMANCE

Kenneth P. Kates
Associate Vice President
& Chief Executive Officer, UI Hospitals and Clinics

Kenneth Fisher
Associate Vice President for Finance
& Chief Financial Officer, UI Hospitals and Clinics

Volume Indicators

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Prior Year *	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Discharges	8,514	8,536	8,298	(22)	-0.3%	216	2.6%
Patient Days	56,136	55,653	53,286	483	0.9%	2,850	5.3%
Average Daily Census	610.17	604.92	579.19	5.25	0.9%	30.98	5.3%
Total Surgeries	7,820	7,912	7,595	(92)	-1.2%	225	3.0%
- Inpatient	3,735	3,790	3,747	(55)	-1.5%	(12)	-0.3%
- Outpatient	4,085	4,122	3,848	(37)	-0.9%	237	6.2%
ED Visits	15,502	16,128	14,888	(626)	-3.9%	614	4.1%
Total Clinic Visits	223,009	229,012	211,194	(6,003)	-2.6%	11,815	5.6%

Greater than 2.5% Favorable Neutral Greater than 2.5% Unfavorable

* from ongoing operations

Discharges by Type

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Adult Medical	2,399	2,427	2,350	(28)	-1.2% ○	49	2.1% ○
Adult Surgical	4,601	4,520	4,438	81	1.8% ○	163	3.7% ●
Adult Psych	281	317	290	(36)	-11.4% ●	(9)	-3.1% ●
Subtotal – Adult	*7,281*	*7,264*	*7,078*	*17*	*0.2%* ○	*203*	*2.9%* ●
Pediatric Medical & Surgical	908	912	876	(4)	-0.4% ○	32	3.7% ●
Pediatric Critical Care	179	222	215	(43)	-19.4% ●	(36)	-16.7% ●
Pediatric Psych	146	138	129	8	5.8% ●	17	13.2% ●
Subtotal – Pediatrics w/o newborn	*1,233*	*1,272*	*1,220*	*(39)*	*-3.1%* ●	*13*	*1.1%* ○
Newborn	459	384	397	75	19.5% ●	62	15.6% ●
TOTAL w/o Newborn	**8,514**	**8,536**	**8,298**	**(22)**	**-0.3%** ○	**216**	**2.6%** ●

● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

Discharge Days by Type

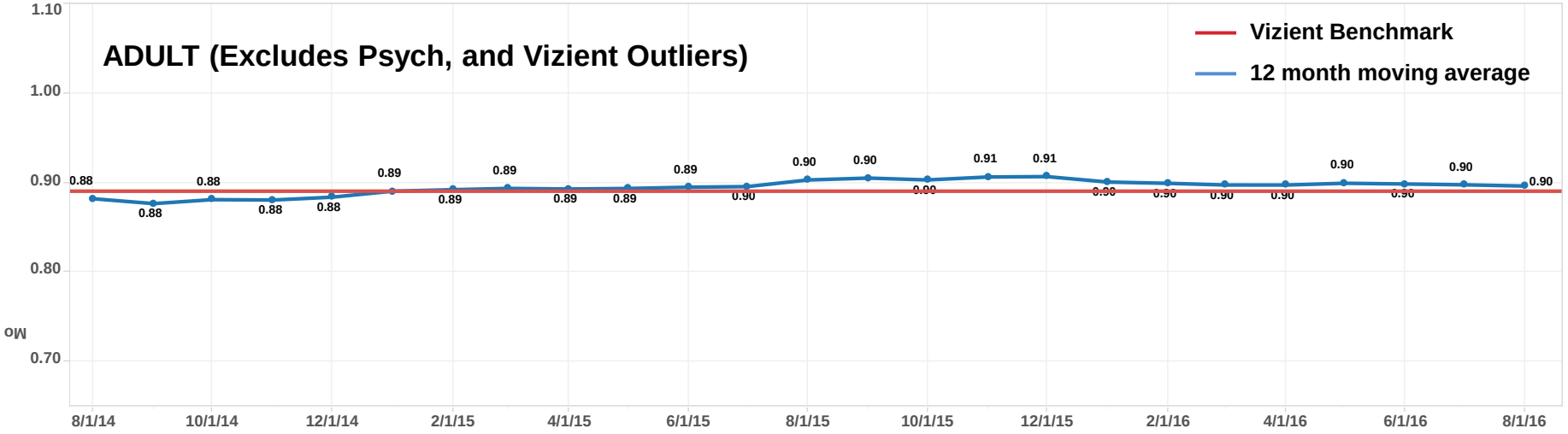
Fiscal Year to Date September 2016

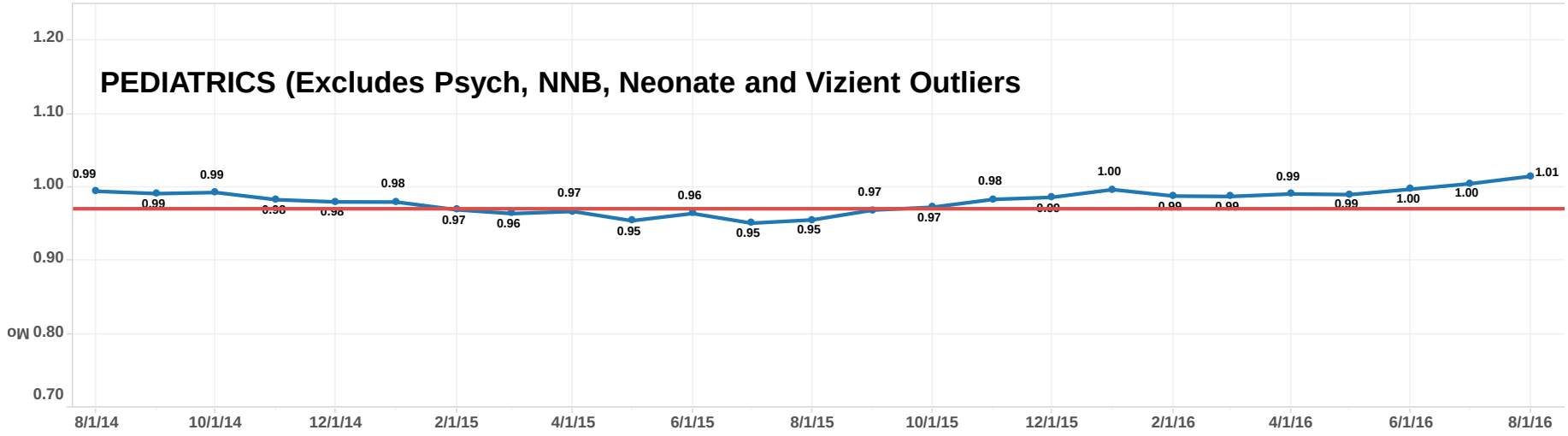
Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Adult Medical	14,359	13,597	13,161	762	5.6%	1,198	9.1%
Adult Surgical	25,183	25,464	24,320	(281)	-1.1%	863	3.5%
Adult Psych	4,579	5,634	5,292	(1,055)	-18.7%	(713)	-13.5%
Subtotal – Adult	*44,121*	*44,695*	*42,773*	*(574)*	*-1.3%*	*1,348*	*3.2%*
Pediatric Medical and Surgical	6,516	4,644	4,463	1,872	40.3%	2,053	46.0%
Pediatric Critical Care	6,168	5,604	5,356	564	10.1%	812	15.2%
Pediatric Psych	1,085	1,263	1,203	(178)	-14.1%	(118)	-9.8%
Subtotal – Pediatrics w/o newborn	*13,769*	*11,511*	*11,022*	*2,258*	*19.6%*	*2,747*	*24.9%*
Newborn	1,045	876	887	169	19.3%	158	17.8%
TOTAL w/o Newborn	**57,890**	**56,206**	**53,795**	**1,684**	**3.0%**	**4,095**	**7.6%**

Greater than 2.5% Favorable Neutral Greater than 2.5% Unfavorable

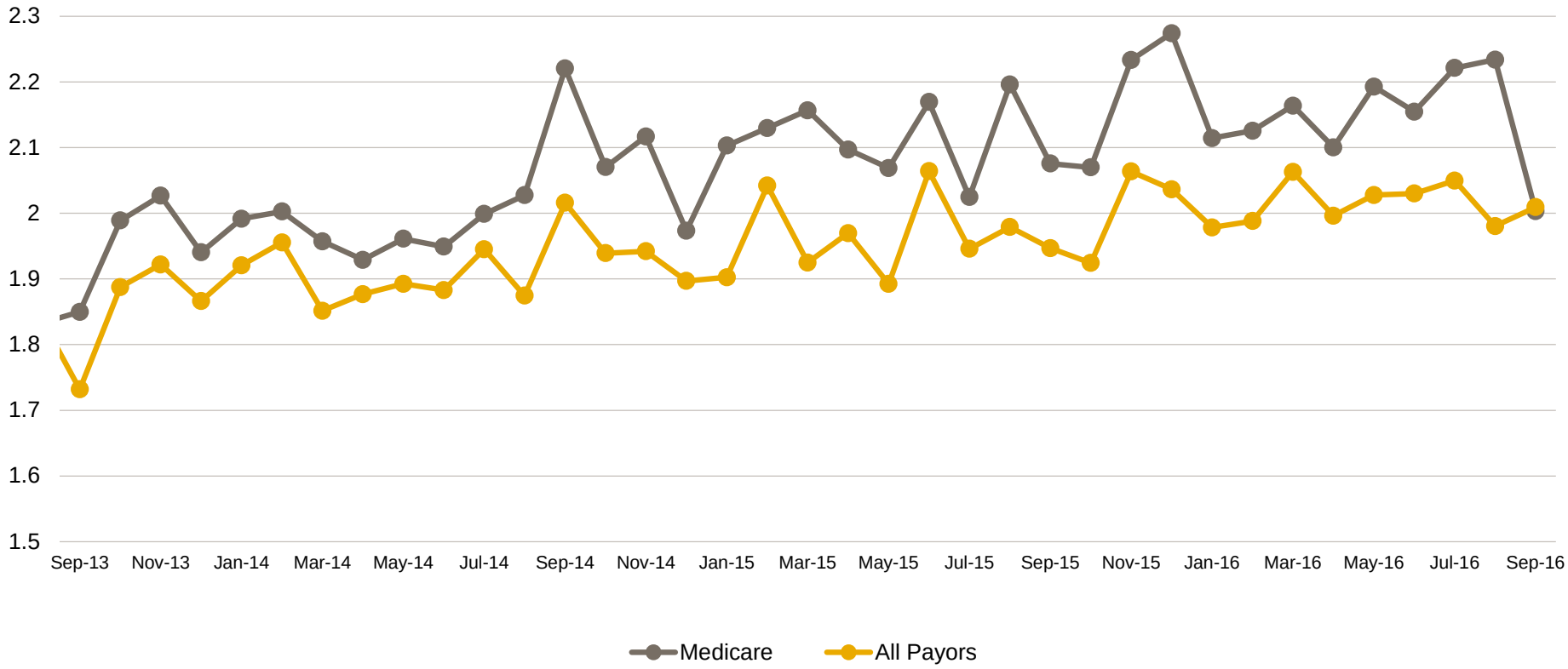
Length of Stay

August 2016, 12 Month Moving Average





Case Mix Index



Inpatient Surgeries – by Clinical Department

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Cardiothoracic	278	278	267	0	0.0% ○	11	4.1% ●
Dentistry	104	126	129	(22)	-17.5% ●	(25)	-19.4% ●
General Surgery	1,099	1,076	1,035	23	2.1% ○	64	6.2% ●
Gynecology	210	230	215	(20)	-8.7% ●	(5)	-2.3% ○
Neurosurgery	697	647	575	50	7.7% ●	122	21.2% ●
Ophthalmology	44	73	101	(29)	-39.7% ●	(57)	-56.4% ●
Orthopedics	852	891	937	(39)	-4.4% ●	(85)	-9.1% ●
Otolaryngology	206	204	190	2	1.0% ○	16	8.4% ●
Radiology – Interventional	29	24	61	5	20.8% ●	(32)	-52.5% ●
Urology *w/ Procedure Ste.*	216	241	237	(25)	-10.4% ●	(21)	-8.9% ●
Total	**3,735**	**3,790**	**3,747**	**(55)**	**-1.5%** ○	**(12)**	**-0.3%** ○
Solid Organ Transplants	92	87	99	5	5.7% ●	(7)	-7.1% ●

● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

Outpatient Surgeries – by Clinical Department

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Cardiothoracic	11	10	13	1	10.0%	(2)	-15.4%
Dentistry	138	138	126	0	0.0%	12	9.5%
Dermatology	12	9	6	3	33.3%	6	100.0%
General Surgery	590	649	592	(59)	-9.1%	(2)	-0.3%
Gynecology	246	223	184	23	10.3%	62	33.7%
Internal Medicine	2	3	5	(1)	-33.3%	(3)	-60.0%
Neurosurgery	157	153	141	4	2.6%	16	11.3%
Ophthalmology	909	930	902	(21)	-2.3%	7	0.8%
Orthopedics	856	876	809	(20)	-2.3%	47	5.8%
Otolaryngology	636	609	541	27	4.4%	95	17.6%
Pediatrics	5	1	1	4	400.0%	4	400.0%
Radiology – Interventional	3	8	31	(5)	-62.5%	(28)	-90.3%
Urology *w/ Procedure Ste.*	520	513	497	7	1.4%	23	4.6%
Total	**4,085**	**4,122**	**3,848**	**(37)**	**-0.9%**	**237**	**6.2%**

Greater than 2.5% Favorable Neutral Greater than 2.5% Unfavorable

Emergency Department

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
ED Visits	15,502	16,128	14,888	(626)	-3.9%	614	4.1%
ED Admits	4,587	5,078	4,921	(491)	-9.7%	(334)	-6.8%
ED Conversion Factor	29.6%	31.5%	33.1%		-6.0%		-10.6%
ED Admits / Total Admits	54.3%	60.1%	59.6%		-9.7%		-8.9%

Greater than 2.5% Favorable Neutral Greater than 2.5% Unfavorable

Clinic Visits by Specialty

Fiscal Year to Date September 2016

Operating Review (YTD)	Actual	Budget	Variance to Budget	% Variance to Budget	
CTR DISABILITIES & DEVELOPMENT	2,679	2,584	95	3.7%	●
CENTER FOR DIGESTIVE DISEASES	5,299	5,591	(292)	-5.2%	●
CLINICAL CANCER CENTER	13,603	13,719	(116)	-0.8%	○
DERMATOLOGY	5,946	5,852	94	1.6%	○
GENERAL SURGERY	5,745	5,556	189	3.4%	●
HOSPITAL DENTISTRY	4,483	4,299	184	4.3%	●
INTERNAL MEDICINE	7,944	8,485	(541)	-6.4%	●
NEUROLOGY	4,252	5,300	(1,048)	-19.8%	●
NEUROSURGERY	3,519	2,838	681	24.0%	●
OBSTETRICS/GYNECOLOGY	15,250	14,245	1,005	7.1%	●
OPHTHALMOLOGY	16,215	17,730	(1,515)	-8.5%	●
ORTHOPEDICS	18,441	18,910	(469)	-2.5%	○
OTOLARYNGOLOGY	4,897	5,278	(381)	-7.2%	●
PEDIATRICS	16,343	14,834	1,509	10.2%	●
PRIMARY CARE (NON-IRL)	43,319	46,563	(3,244)	-7.0%	●
PSYCHIATRY	10,194	10,038	156	1.6%	○
UROLOGY	2,080	2,893	(813)	-28.1%	●
UI HEART CTR	4,560	4,967	(407)	-8.2%	●
IRL	38,240	39,330	(1,090)	-2.8%	●
TOTAL	**223,009**	**229,012**	**(6,003)**	**-2.6%**	●

● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

Total Clinic Visits by Location

Fiscal Year to Date September 2016

Operating Review (YTD)	FY17 ACTUAL On-Site	IRL	UICMS & QuickCare	Total	FY16 ACTUAL* On-Site	IRL	UICMS & QuickCare	Total	Variance to Prior Year	%	
FAMILY MEDICINE	10,438	2,574	32,881	45,893	11,520		29,058	40,578	5,315	13.1%	●
GENERAL INTERNAL MEDICINE		6,563		6,563		6,969		6,969	(406)	-5.8%	●
PEDIATRICS		5,382		5,382		5,175		5,175	207	4.0%	●
SUBTOTAL: PRIMARY CARE	*10,438*	*14,519*	*32,881*	*57,838*	*11,520*	*12,144*	*29,058*	52,722	*5,116*	*9.7%*	●
ANESTHESIA		74		74					74	100.0%	●
CTR DISABILITIES & DEVELOPMENT	2,679			2,679	2,329			2,329	350	15.0%	●
CTR FOR DIGESTIVE DISEASES	5,299	1,389		6,688	5,505	1,056		6,561	127	1.9%	○
CLINICAL CANCER CENTER	13,630	598		14,228	14,310	448		14,758	(530)	-3.6%	●
DERMATOLOGY	5,946	2,350		8,296	5,860	2,314		8,174	122	1.5%	○
GENERAL SURGERY	5,745			5,745	5,423			5,423	322	5.9%	●
HOSPITAL DENTISTRY	4,483			4,483	4,217			4,217	266	6.3%	●
INTERNAL MEDICINE	7,942	1,971		9,913	7,232	1,894		9,126	787	8.6%	●
NEUROLOGY	4,252			4,252	3,860			3,860	392	10.2%	●
NEUROSURGERY	3,519			3,519	3,246			3,246	273	8.4%	●
OBSTETRICS/GYNECOLOGY	15,250	5,531		20,781	15,126	6,098		21,224	(443)	-2.1%	○
OPHTHALMOLOGY	16,215	2,638		18,853	16,246	2,465		18,711	142	0.8%	○
ORTHOPEDICS	18,441	254		18,695	18,083	152		18,235	460	2.5%	○
OTOLARYNGOLOGY	4,897	1,812		6,709	4,871	1,536		6,407	302	4.7%	●
PEDIATRICS	16,343	671		17,014	15,010	29		15,039	1,975	13.1%	●
PSYCHIATRY	10,194	13		10,207	8,761			8,761	1,446	16.5%	●
UROLOGY	2,055	3,335		5,390	1,588	2,889		4,477	913	20.4%	●
UI HEART CTR	4,560	3,085		7,645	4,672	3,252		7,924	(279)	-3.5%	●
SUBTOTAL: SPECIALTY CARE	*141,450*	*23,721*		*165,171*	*136,339*	*22,133*		*158,472*	*6,699*	*4.2%*	●
TOTAL	**151,888**	**38,240**	**32,881**	**223,009**	**147,859**	**34,277**	**29,058**	**211,194**	**11,815**	**5.6%**	●

● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

* **from ongoing operations**

Pediatric Clinic Visits by Location

Fiscal Year to Date September 2016

	FY17 ACTUAL				FY16 ACTUAL*						
Operating Review (YTD)	On-Site	IRL	UICMS & QuickCare	Total	On-Site	IRL	UICMS & QuickCare	Total	Variance to Prior Year	%	
FAMILY MEDICINE	1,110	85	8,335	9,530	1,024		7,765	8,789	741	8.4%	●
GENERAL INTERNAL MEDICINE		6		6		3		3	3	100.0%	●
PEDIATRICS		5,222		5,222		5,045		5,045	177	3.5%	●
SUBTOTAL: PRIMARY CARE	*1,110*	*5,313*	*8,335*	*14,758*	*1,024*	*5,048*	*7,765*	*13,837*	921	*6.7%*	●
ANESTHESIA										0.0%	○
CTR DISABILITIES & DEVELOPMENT	2,679			2,679	2,329			2,329	350	15.0%	●
CTR FOR DIGESTIVE DISEASES	3			3	7			7	(4)	-57.1%	●
CLINICAL CANCER CENTER	33			33	23			23	10	43.5%	●
DERMATOLOGY	405	493		898	496	536		1,032	(134)	-13.0%	●
GENERAL SURGERY	183			183	131			131	52	39.7%	●
HOSPITAL DENTISTRY	581			581	587			587	(6)	-1.0%	○
INTERNAL MEDICINE	48	37		85	8	53		61	24	39.3%	●
NEUROLOGY	136			136	128			128	8	6.3%	●
NEUROSURGERY	562			562	512			512	50	9.8%	●
OBSTETRICS/GYNECOLOGY	142	39		181	145	23		168	13	7.7%	●
OPHTHALMOLOGY	2,954	159		3,113	2,655	160		2,815	298	10.6%	●
ORTHOPEDICS	3,329	6		3,335	3,091			3,091	244	7.9%	●
OTOLARYNGOLOGY	948	1,140		2,088	802	940		1,742	346	19.9%	●
PEDIATRICS	14,275	506		14,781	13,136	28		13,164	1,617	12.3%	●
PSYCHIATRY	2,623			2,623	2,186			2,186	437	20.0%	●
UROLOGY	53	679		732	65	779		844	(112)	-13.3%	●
UI HEART CTR	3	16		19	5	61		66	(47)	-71.2%	●
SUBTOTAL: SPECIALTY CARE	*28,957*	*3,075*	*0*	*32,032*	*26,306*	*2,580*	*0*	*28,886*	*3,146*	*10.9%*	●
TOTAL	**30,067**	**8,388**	**8,335**	**46,790**	**27,330**	**7,628**	**7,765**	**42,723**	**4,067**	**9.5%**	●

● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

* **from ongoing operations**

Adult Clinic Visits by Location

Fiscal Year to Date September 2016

Operating Review (YTD)	FY17 ACTUAL On-Site	IRL	UICMS & QuickCare	Total	FY16 ACTUAL* On-Site	IRL	UICMS & QuickCare	Total	Variance to Prior Year	%	
FAMILY MEDICINE	9,328	2,489	24,546	36,363	10,496		21,293	31,789	4,574	14.4%	●
GENERAL INTERNAL MEDICINE		6,557		6,557		6,966		6,966	(409)	-5.9%	●
PEDIATRICS		160		160		130		130	30	23.1%	●
SUBTOTAL: PRIMARY CARE	*9,328*	*9,206*	*24,546*	*43,080*	*10,496*	*7,096*	*21,293*	*38,885*	*4,195*	10.8%	●
ANESTHESIA		74		74					74	100.0%	●
CTR FOR DIGESTIVE DISEASES	5,296	1,389		6,685	5,498	1,056		6,554	131	2.0%	○
CLINICAL CANCER CENTER	13,597	598		14,195	14,287	448		14,735	(540)	-3.7%	●
DERMATOLOGY	5,541	1,857		7,398	5,364	1,778		7,142	256	3.6%	●
GENERAL SURGERY	5,562			5,562	5,292			5,292	270	5.1%	●
HOSPITAL DENTISTRY	3,902			3,902	3,630			3,630	272	7.5%	●
INTERNAL MEDICINE	7,894	1,934		9,828	7,224	1,841		9,065	763	8.4%	●
NEUROLOGY	4,116			4,116	3,732			3,732	384	10.3%	●
NEUROSURGERY	2,957			2,957	2,734			2,734	223	8.2%	●
OBSTETRICS/GYNECOLOGY	15,108	5,492		20,600	14,981	6,075		21,056	(456)	-2.2%	○
OPHTHALMOLOGY	13,261	2,479		15,740	13,591	2,305		15,896	(156)	-1.0%	○
ORTHOPEDICS	15,112	248		15,360	14,992	152		15,144	216	1.4%	○
OTOLARYNGOLOGY	3,949	672		4,621	4,069	596		4,665	(44)	-0.9%	○
PEDIATRICS	2,068	165		2,233	1,874	1		1,875	358	19.1%	●
PSYCHIATRY	7,571	13		7,584	6,575			6,575	1,009	15.3%	●
UROLOGY	2,002	2,656		4,658	1,523	2,110		3,633	1,025	28.2%	●
UI HEART CTR	4,557	3,069		7,626	4,667	3,191		7,858	(232)	-3.0%	●
SUBTOTAL: SPECIALTY CARE	*112,493*	*20,646*		*133,139*	*110,033*	*19,553*		*129,586*	*3,553*	2.7%	●
TOTAL	**121,821**	**29,852**	**24,546**	**176,219**	**120,529**	**26,649**	**21,293**	**168,471**	**7,748**	**4.6%**	●

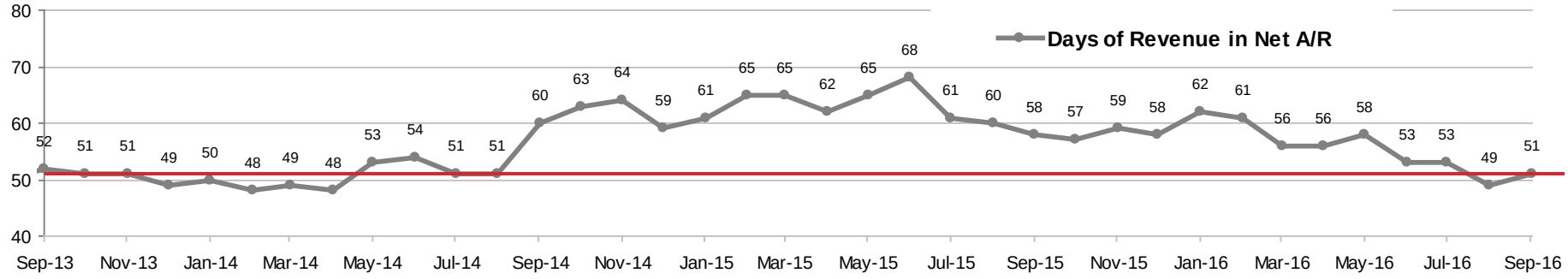
● **Greater than 2.5% Favorable** ○ **Neutral** ● **Greater than 2.5% Unfavorable**

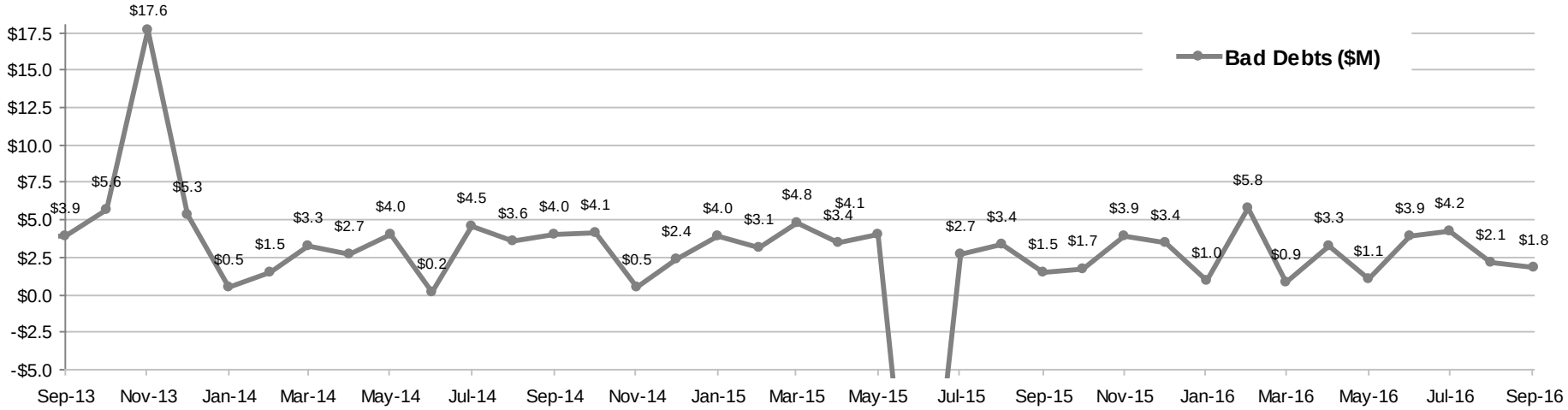
* **from ongoing operations**

Comparative Accounts Receivable

At September 30, 2016

	June 30, 2015	June 30, 2016 (preliminary)	September 30, 2016
Net Accounts Receivable	$236,775,239	$209,933,385	$203,413,731
Net Days in AR	68	53	51





Comparative Financial Results

Fiscal Year to Date September 2016, Dollars in Thousands

NET REVENUES	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Patient Revenue	$360,052	$375,042	$334,779	($14,990)	-4.0%	$25,273	7.5%
Other Operating Revenue	12,382	11,423	12,840	959	8.4%	(458)	-3.6%
Total Revenue	**$372,434**	**$386,465**	**$347,619**	**($14,031)**	**-3.6%**	**$24,815**	**7.1%**
EXPENSES							
Salaries and Wages	$178,988	$187,205	$160,971	($8,217)	-4.4%	$18,017	11.2%
General Expenses	159,760	165,024	150,614	(5,264)	-3.2%	9,146	6.1%
Operating Expense before Capital	$338,748	$352,229	$311,585	($13,481)	-3.8%	$27,163	8.7%
Cash Flow Operating Margin	**$33,686**	**$34,236**	**$36,034**	**($550)**	**-1.6%**	**($2,348)**	**-6.5%**
Capital- Depreciation and Amortization	20,194	20,686	17,783	(492)	-2.4%	2,411	13.6%
Total Operating Expense	$358,942	$372,915	$329,368	($13,973)	-3.7%	$29,574	9.0%
Operating Income	**$13,492**	**$13,550**	**$18,251**	**($58)**	**-0.4%**	**($4,759)**	**-26.1%**
Operating Margin %	**3.6%**	**3.5%**	**5.3%**		**0.1%**		**-1.7%**
Gain (Loss) on Investments	4,046	2,019	(16,500)	2,027	100.4%	20,546	124.5%
Other Non-Operating	(1,222)	(3,310)	(1,711)	2,088	63.1%	489	28.6%
Net Income	**$16,316**	**$12,259**	**$40**	**$4,057**	**33.1%**	**$16,276**	**40,690.0%**
Net Margin %	**4.3%**	**3.2%**	**0.0%**		**1.1%**		**4.3%**

**** Gain/(Loss) on Investments based on information available at close. Final investment return for this period is reflected in Fiscal Year to Date returns in the subsequent reporting cycle.***

STRATEGIC PLAN

Jean Robillard, M.D.

Vice President for Medical Affairs

& Dean, Carver College of Medicine

UI Health Care Strategic Plan—FY2014-2016

World Class People. World Class Medicine.

Mission

Changing Medicine. Changing Lives.

Vision

World Class People. World Class Medicine. For Iowa and the World.

Values

I CARE. *Innovation, Collaboration, Accountability, Respect, Excellence.*

Clinical Quality & Service Goal

Provide world class healthcare and service to optimize health for the people of Iowa and beyond.

Accountable Leaders

Ken Kates, Theresa Brennan, Kenneth Rempher, Scott Turner, Sabi Singh, Doug Van Daele

Strategies & Tactics

- Q81. Optimize patient safety
- Q82. Ensure accurate and complete coding of documentation
- Q83. Improve timely access to care
- Q84. Deliver consistent service excellence
- Q86. Design and implement innovative care models
- Q88. Lead efforts to improve health, access, quality and reduce fragmentation in the health care delivery system in collaboration with UI Health Alliance and other community partners
- Q87. Build and sustain programmatic priorities:
  - Cancer
  - Children's Services
  - Diabetes
  - Heart and Vascular
  - Neuroscience
  - Primary Care
  - Orthopaedics
  - Transplant
  - Women's Health
  - Other emerging areas of clinical focus, including aging and age-related diseases
- Q88. Optimize UIP operational effectiveness locally with UIHC and across the Alliance

Information Technology

- Continue to develop the full capabilities of Epic to facilitate quality/safety and enhance professional and consumer relationships, including UI CareLink and MyChart
- Mobile technology
- Enhance sharing of clinical information with external providers
- Data warehousing capabilities incorporating external data
- Device integration into Epic

Metrics

- Q81
  - CMS Reportable Events
  - Adverse Drug Events
  - CLABSI, CAUTI, VAP & C-Diff Rates
  - CMS Core Measures
  - Mortality Index
  - Readmission Rate
  - Blood Management
  - Nurse Sensitive Indicators
- Q82
  - Case-weighted Documentation Opportunity Points (CareFx)
  - ICD-10 Provider Training Completion
- Q83
  - Clinic room utilization
  - Transfer Center – Average Placement Time
  - Percent of transfers coming through transfer center
  - Length of stay
  - Same day access
  - First-case on-time starts (Main OR)
  - % of total prescriptions filled by UIHC retail pharmacies
- Q84
  - Patient satisfaction (Likelihood to Recommend)
  - Staff satisfaction
  - Referring physician satisfaction
  - MyChart utilization
  - Meaningful Use (Stage 2)
- Q86
  - NCQA Medical Home certification
  - eHealth implemented in Critical Access Hospitals
- Q88
  - Quality and cost targets for Medicare, Medicaid and Wellmark ACOs
  - Clinical integration across the Alliance
  - UI CareLink in all Alliance and UI Health Network offices
  - # of HVHC projects implemented within UI Health Care & UI Health Alliance
- Q87
  - Volume, growth, outcomes and patient satisfaction indicators
- Q88
  - New structure and leadership in place

Research Goal

Advance world class discovery through outstanding, innovative biomedical and health services research.

Accountable Leaders

Pat Winokur, Gary Rosenthal Sharon Tucker

Strategies & Tactics

- R1. Recruit, develop, and retain a diverse cadre of world-class investigators and support their academic development
- R2. Identify areas of excellence in basic research in which to prioritize future growth and development (neuroscience, diabetes, cardiopulmonary, genomics)
- R3. Expand existing research that disseminates and implements evidence-based practices into routine clinical practice settings and across UI Health Alliance
- R4. Integrate genomics with clinical care
- R5. Improve and grow scientific infrastructure including new cores
- R6. Nurture the development of high quality, high reward interdisciplinary scientific programs, especially those with potential for tech transfer and/or start-up companies
- R7. Strengthen informatics capabilities for all research areas
- R8. Collaborate with other UI Colleges and CTSA Consortium and UI Health Alliance in targeted areas to meet common goals
- R9. Strengthen enterprise research business model

Information Technology

- Develop the full capabilities of Epic to facilitate quality/safety and enhance professional and consumer relationships, including UI CareLink and MyChart
- Develop IT infrastructure necessary for i3CARE (IT, EPIC) across UI Health Alliance, business metrics, clinical outcomes, decision science, genomics, and comparative effectiveness)
- Develop robust informatics infrastructure in synergy with university initiatives

Metrics

- R1
  - Recruitment and retention of a diverse faculty as measured by annual demographic data on the composition of UI Health Care faculty
  - Increase in National rankings for the diversity recruitment and retention plan on NIH grant reviews
- R2
  - Percentage of NIH funded research effort directed toward stated research and clinical priorities/centers of excellence
- R3
  - # of grants funding translational research
  - Initiate & Staff i3CARE
  - Number and dollar amount of clinical trials
- R4
  - Establish tissue procurement system
- R5
  - Complete Pappajohn Biomedical Discovery Building and occupy with strategic initiatives as part of the Pappajohn Biomedical Institute
  - New cores initiated
  - # of cores endowed
- R8
  - Number of patients, royalties, licensing agreements
  - Number of new start-ups
- R7
  - Increased participation in informatics education efforts at UME, GME and faculty level
  - Initiate joint degree programs and faculty fellowships in informatics
- R8
  - Number and dollar amount of program project and other collaborative grants
- R9
  - Number, dollar amount and percent of extramurally funded projects
  - Research revenue per net square foot
  - Percent of faculty salaries offset by grant support

Education Goal

Develop world class health professionals and scientists through excellent, innovative and humanistic educational curricula for learners at every stage.

Accountable Leaders

Donna Hammond, Mark Wilson, Christopher Cooper, LouAnn Montgomery

Strategies & Tactics

- E1. Complete roll-out of new innovative mechanism-based UME curriculum
- E2. Recruit, develop and retain diverse world class faculty, fellows, residents and students
- E3. Foster innovation through greater integration across the continuum of UME, OSCEP, GME, and CME
- E4. Limit medical student debt
- E5. Recognize and reward excellence in teaching; find creative ways to fund teaching
- E6. Cultivate critical thinking, an environment of curiosity and life-long learning, a spirit of inquiry, and a passion for excellence
- E7. Emphasize interprofessional education (IPE) across all health science professionals to improve patient care
- E8 Deepen academic training for clinicians through creative faculty fellowships

Information Technology

- Develop the full capabilities of Epic to facilitate education
- Provide training and support for Learners2 to understand and implement patient-centered care and service
- Provide tools for faculty to implement new teaching methods (availability of short podcasts from across the world, IT based testing, etc)

Metrics

- E1
  - USMLE scores
  - Placements of graduates, short term and long term
  - National rankings of graduate programs and professional schools
  - Scholarship (e.g. publications, national presentations) regarding innovations in clinical learning environments &/or in UME/GME
- E2
  - # of hours/faculty devoted to education efforts as logged in participation database
  - Applications, admissions, and yield including increased GPA and MCAT scores and diversity of applicants and admitted students
  - % GME slots at UIHC filled with high quality residents
  - % COOM students Match
  - Success in student diversity retention initiatives
  - Effectiveness of under-represented minority student scholarship program to participate in UIHC externships
  - Increase in positive data from CSAO-commissioned minority focus groups
- E3
  - Scholarship (e.g. publications, national presentations) regarding innovations in clinical learning environments &/or in UME/GME
  - % rating their overall evaluation as 'very positive' on the annual Resident Survey conducted by ACGME
  - # UME curricular innovations adapted to GME needs
- E4
  - Annual student debt compared to national benchmarks and prior year
- E6
  - USMLE scores
  - % rating overall evaluation as 'very positive' on the annual Resident Survey conducted by ACGME
  - Student evaluations of curriculum and instruction to include residents and fellows
  - Progress with effort to build infrastructure to support comprehensive physician professional development initiatives
  - # of endowed professorships for residency Program Directors
- E8
  - % rating their overall evaluation as 'very positive' on the annual Resident Survey conducted by ACGME
- E7
  - Best-practice examples of IPP in clinical settings that reinforce IPE
  - Verification of proficiency of resident/fellow/faculty physicians to perform

People Goal

Foster a culture of excellence that values, engages and enables our workforce.

Accountable Leaders

Jana Wessels, Kenneth Rempher

Strategies & Tactics

- P1. Continue to develop talent within the organization and define performance expectations for all
- P2. Seek, hire and retain outstanding people including individuals from groups traditionally under-represented in academic medicine
- P3. Ensure that all UI Health Care employees receive appropriate training regarding organization's Mission, Vision, Values and Goals
- P4. Engage staff and encourage strong personal responsibility, accountability and empowerment directed toward achieving organizational goals
- P5. Promote programs that recognize and reward excellence
- P6. Foster an environment of continual learning, innovation and collaboration
- P7. Maintain Magnet recognition program designation to attract and retain a world class workforce
- P8. Develop and implement the IOM Future of Nursing recommendations appropriate to our workforce
- P9. Continue to develop infrastructure, technology and lean processes to support HR efforts
- P10. Support organizational capacity to transform and embrace change

Information Technology

- Training and development
- Communications
- Policy and practice changes
- Compliance tracking

Metrics

- P1
  - % performance appraisals completed
- P2 & P10
  - Time to hire
- P3
  - % staff completing orientation within 60 days of hire
  - % staff trained in Service Excellence
- P4
  - Hours worked vs. hours paid
- P6
  - # of leaders completing Dartmouth program and deployed to existing or new initiatives
- P7
  - Magnet status maintained
- P8
  - # staff enrolled in RN to BSN and other tuition support programs
- P9
  - Compliance tracking system developed and implemented

Diversity Goal

Create an environment of inclusion where individual differences are respected and all feel welcome.

Accountable Leaders

Sherree Wilson & Jean Robillard (VPMA Cabinet)

Strategies & Tactics

- D1. Foster a positive and welcoming environment by nurturing a culture of respect, inclusion and equal opportunity
- D2. Develop and implement 2014-2017 COOM Strategic Diversity Plan
- D3. Provide a range of diversity education, cultural enrichment and acculturation programs for members of the UI Health Care community
- D4. Develop and implement innovative, effective recruiting and pipeline initiatives geared towards under-represented groups
- D5. Prepare to achieve compliance with LCME standards (ER-16, MS-3, ED-21, ED-22) related to diversity, inclusion and culturally responsive care for 2017 review
- D6. Each Accountable Leader will advance diversity in all strategies

Information Technology

- Web-based tools (self-audit, reporting progress on diversity initiatives, cultural competency resources, accreditation, etc.)
- Evaluate online tools/programs to facilitate cultural competency training and adopt one
- Track participation in diversity programs

Metrics

- D1
  - 2012 climate survey for MD students completed and reported
  - Enterprise-wide self-audit tool completed
  - Data from focus groups compiled and reported in aggregate format
  - Evaluation of Human Rights Week completed, and results used to guide future direction
- D2
  - On-line diversity reporting tool 'live' and in use by all departments
- D3
  - % medical educators possessing skills and knowledge to infuse cultural competence in the curriculum and teaching methods
  - Patient satisfaction surveys measuring healthcare providers delivering ongoing, culturally competent and sensitive patient care
  - Culturally responsive healthcare e-learning tool(s) adopted and used by UIHC community
  - % of high participant satisfaction with, and effective of, sessions and content of the Culturally Responsive Healthcare in Iowa conference
- D4
  - Diversity among MD applicants and matriculants
  - Applicants from historically underrepresented populations to Biosciences/Biomedical graduate programs
- D6
  - Full compliance with LCME diversity, inclusion and cultural competence standards

Growth and Finance Goal

Optimize a performance-driven business model that assures financial success.

Accountable Leaders

Ken Fisher, Ken Kates, Sabi Singh, Scott Turner

Strategies & Tactics

- GF1. Complete evaluation of clinical programs based on all three missions and rank as to core, (basic), growth or marginal
- GF2. Develop and implement business model for long term growth of targeted clinical programs
- GF3. Develop and implement business model to support the evolving healthcare delivery system, including ACO's, risk sharing, gain sharing or bundled payments
- GF4. Maintain capital plan to address core strategies
- GF5. Develop and implement strategies to strengthen relationships with Critical Access Hospitals, their physicians and other key community providers and work collaboratively to improve health and lower costs for populations living in these communities
- GF6. Develop a culture of philanthropy within UI Health Care
- GF7. Increase number of lives in ACO products
- GF8. Increase Pediatric market share population in advance of Children's Hospital opening in targeted regions

Information Technology

- Data-driven business planning
- Robust financial and performance-reporting systems
- Data warehouse and analytical capabilities for ACOs and population health

Metrics

- GF1
  - Recruitment timing
- GF2
  - Operating margin established for each business unit
  - Flexible budget variance of less than 2.0% for each business unit
  - Volume metrics for each business unit including at least inpatient admissions, days, ALOS vs. expected (expressed as an index), surgical cases, ambulatory visits for each budget year
  - Quality of service metrics including, room turns for clinics, wait time for new patients in clinics, others (TBD) for each budget year
  - CARTS productivity for each clinics department
- GF3
  - Bond rating metrics, days cash on hand, operating margin, current ratio, debt to capital, others (TBD) to maintain current rating from each agency
  - Long-range business model updated yearly
  - Shared savings for ACO programs
- GF4
  - Facility projects on budget and schedule
- GF5
  - UI Health Network implemented with targeted services in targeted areas
- GF6
  - Philanthropic dollars received
  - % UI Health Care faculty/staff who give to UI
- GF7
  - % out of state migration for tertiary care
  - % market share of tertiary care in state

Our Mission

Strategic Plan

Changing Medicine. Changing Lives.®

University of Iowa Health Care is changing medicine through

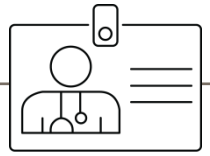
- Pioneering discovery
- Innovative Interprofessional education
- Delivery of superb clinical care
- An extraordinary patient experience in a multi-disciplinary, collaborative, team-based environment

University of Iowa Health Care is changing lives by

- Preventing and curing disease
- Improving health and well-being
- Assuring access to care for people in Iowa and throughout the world

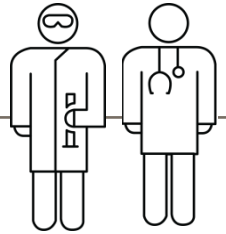
Our Vision

Strategic Plan



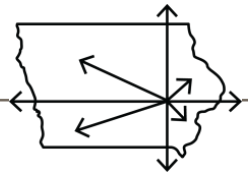
World Class People.

Building on our greatest strength.



World Class Medicine.

Creating a new standard of excellence in integrated patient care, research, and education.



For Iowa and the World.

Making a difference in quality of life and health for generations.

Values

Strategic Plan

I pledge my individual commitment to UI Health Care's values because I CARE about:

I — ***Innovation***

We seek creative ways to solve problems.

C — ***Collaboration***

We believe teamwork is the best way to work.

A — ***Accountability***

We behave ethically, act openly and with integrity in all that we do, taking responsibility for our actions.

R — ***Respect***

We honor diversity and recognize the worth and dignity of every person.

E — ***Excellence***

We strive to achieve excellence in all that we do.

Goals

Provide world-class health care and service to optimize health for everyone.

Advance world-class discovery through excellence and innovation in biomedical and health services research.

Develop world-class health professionals and scientists through excellent, innovative and humanistic educational curricula for learners at every stage.

Foster a culture of excellence that values, engages and enables our workforce.

Create an environment of inclusion where individual differences are respected and all feel welcome.

Optimize a performance-driven business model that assures financial success.

Strategies: Clinical Quality and Service

UI Health Care Strategic Plan

QS1	Optimize patient safety
QS2	Ensure accurate and complete coding of documentation
QS3	Improve timely access to care
QS4	Deliver consistent service excellence
QS5	Design and implement innovative care models
QS6	Lead efforts to improve health, access, quality and reduce fragmentation in the health care delivery system in collaboration with UI Health Alliance and other community partners
QS7	Build and sustain programmatic priorities (cancer, children's services, diabetes, heart and vascular, neurosciences, primary care, orthopaedics, transplant, women's health, and other emerging areas of clinical focus, including aging and age-related diseases)
QS8	Optimize UI Physicians operational effectiveness locally with UIHC and across the UI Health Alliance

Strategies: Research

UI Health Care Strategic Plan

R1	Recruit, develop, and retain a diverse cadre of world-class investigators and support their academic development
R2	Identify areas of excellence in basic research in which to prioritize future growth and development (neuroscience, diabetes, cardiopulmonary, genomics)
R3	Expand existing research that disseminates and implements evidence-based practices into routine clinical practice settings and across UI Health Alliance
R4	Integrate genomics with clinical care
R5	Improve and grow scientific infrastructure including new cores
R6	Nurture the development of high quality, high reward interdisciplinary scientific programs, especially those with potential for tech transfer and/or start-up companies
R7	Strengthen informatics capabilities for all research areas
R8	Collaborate with other UI Colleges, Clinical and Translational Science Award Consortium and UI Health Alliance in targeted areas to meet common goals
R9	Strengthen enterprise research business model

Strategies: Education

UI Health Care Strategic Plan

E1	Complete roll-out of new innovative mechanism-based undergraduate medical education curriculum
E2	Recruit, develop and retain diverse world class faculty, fellows, residents and students
E3	Foster innovation through greater integration across the continuum of undergraduate medical education, statewide clinical education programs, graduate medical education, and continuing medical education
E4	Limit medical student debt
E5	Recognize and reward excellence in teaching; find creative ways to fund teaching
E6	Cultivate critical thinking, an environment of curiosity and life-long learning, a spirit of inquiry, and a passion for excellence
E7	Emphasize interprofessional education (IPE) across all health science professionals
E8	Deepen academic training for clinicians through creative faculty/fellowships

Strategies: People

UI Health Care Strategic Plan

P1	Continue to develop talent within the organization and define performance expectations for all
P2	Seek, hire and retain outstanding people including individuals from groups traditionally under-represented in academic medicine
P3	Ensure that all UI Health Care employees receive appropriate training regarding organization's Mission, Vision, Values and Goals
P4	Engage staff and encourage strong personal responsibility, accountability and empowerment directed toward achieving organizational goals
P5	Promote programs that recognize and reward excellence
P6	Foster an environment of continual learning, innovation and collaboration
P7	Maintain Magnet recognition program designation to attract and retain a world-class workforce
P8	Develop and implement the Institute of Medicine *Future of Nursing* recommendations appropriate to our workforce
P9	Continue to develop infrastructure, technology and lean processes to support HR efforts
P10	Support organizational capacity to transform and embrace change

Strategies: Diversity

UI Health Care Strategic Plan

D1	Foster a positive and welcoming environment by nurturing a culture of respect, inclusion and equal opportunity
D2	Develop and implement 2014-2017 CCOM Strategic Diversity Plan
D3	Provide a range of diversity education, cultural enrichment and acclimation programs for members of the UI Health Care community
D4	Develop and implement innovative, effective recruiting and pipeline initiatives geared towards under-represented groups
D5	Compliance with Liaison Committee on Medical Education standards (IS-16, MS-8, ED-21, ED-22) related to diversity, inclusion and culturally responsive care for 2017 review
D6	Each Accountable Leader will advance diversity in all strategies

Strategies: Growth and Finance

UI Health Care Strategic Plan

GF1	Complete evaluation of clinical programs based on all three missions and rank as to core (basic), growth or marginal
GF2	Develop and implement business model for long-term growth of targeted clinical programs
GF3	Develop and implement business model to support the evolving healthcare delivery system, including ACOs, risk sharing, gain sharing or bundled payments
GF4	Maintain capital plan to address core strategies
GF5	Develop and implement strategies to strengthen relationships with Critical Access Hospitals, their physicians and other key community providers and work collaboratively to improve health and lower costs for populations living in these communities
GF6	Develop a culture of philanthropy within UI Health Care
GF7	Increase number of lives in ACO products
GF8	Increase pediatric market share population in advance of UI Children's Hospital opening in targeted regions

Strategies: Information Technology

UI Health Care Strategic Plan

CLINICAL QUALITY AND SERVICE

- Continue to develop the full capabilities of Epic to facilitate quality/safety and enhance professional and consumer relationships, including UI CareLink and MyChart
- Mobile technology
- Enhance sharing of clinical information with external providers
- Data warehousing capabilities incorporating external data
- Device integration into Epic

RESEARCH

- Develop the full capabilities of Epic to facilitate innovation in research
- Develop IT infrastructure necessary for ICORE (IT, Epic across UI Health Alliance, business metrics, clinical outcomes, decision science, genomics and comparative effectiveness)
- Develop robust informatics infrastructure in synergy with university initiatives

EDUCATION

- Develop the full capabilities of Epic to facilitate education
- Provide training and support for “learners” to understand and implement patient-centered care and service
- Provide tools for faculty to implement new teaching methods (availability of short podcasts from across the world, IT based testing, etc.)

PEOPLE

- Training and development
- Communications
- Policy and practice changes
- Compliance tracking

DIVERSITY

- Web-based tools (self-audit, reporting progress on diversity initiatives, cultural competency resources, accreditation, etc.)
- Online tools/programs to facilitate cultural competency training
- Track participation in diversity programs

GROWTH AND FINANCE

- Data-driven business planning
- Robust financial and performance-reporting systems
- Data warehouse and analytical capabilities for ACOs and population health

Overall Scorecard

Overall FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Honor Roll for Best Hospitals by US News and World Report	Ranked in 7 specialties	Improve	Ranked in 7 specialties	Remained Constant
Children's Hospitals by US News and World Report	Ranked in 9 specialties	Improve	Ranked in 8 specialties	Declined
Public Medical Schools ranking in Research by US News and World Report	11th	Improve	12th	Declined
Overall Medical School ranking in Research by US News and World Report	29th	Improve	33rd	Declined
Public Medical Schools Primary Care ranking by US News and World Report	13th	Improve	13th	Remained Constant
Overall Medical Schools Primary Care ranking by US News and World Report	16th	Improve	25th	Declined
NIH Funding among Public Medical Schools	20th (FY14)	Improve	(FY15) 18th	Achieved
Moody's Bond Rating	Aa2	Maintain Aa2	Aa2	Achieved

Scorecard: Clinical Quality and Service

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Patient Satisfaction: % "Very Goods" a) Adult b) Pediatric c) Outpatient *Goal: Improve 10% of gap*	a) 52.6% b) 60.2% c) 71.1%	a) 57.3% b) 64.2% c) 74.0%	a) 54.2% b) 63.0% c) 73.4%	a. Improved b. Improved c. Improved
Risk Adjusted Mortality Index a) Adult b) Pediatric *Goal: Maintain or improve index from FY15 baseline*	a. 0.83 b. 1.06	a. 0.83 b. 1.00	a. 0.85 b. 0.68	a. Not Achieved b. Achieved
HAI reduction: C diff infection rates *Goal: 10% reduction in rate*	11.2	10.1	11.2	Remained Constant
Readmission Rate (UHC All-cause Measure - Adult and Children) *Goal: 10% reduction in rate*	10.90%	9.81%	10.52%	Improved
Length of Stay Index a) Adult b) Pediatrics Goal: Maintain or improve index from FY15 baseline	a. .88 b. .95	a. .88 b. .95	a. 0.90 b. 0.99	a. Not Achieved b. Not Achieved
Access: % new patients seen within 7 days of request *Goal: Improve to 50%*	35%	50%	43.6%	Improved

Scorecard: Research

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Total extramural funding (excluding philanthropy)	$186M	$190M	$210M	Achieved
Research revenue per net square foot (excluding philanthropy)	$350	Maintain	$396	Achieved
Percent of extramurally funded faculty research effort	18.8%	Maintain	20.9%	Achieved

Scorecard: Education

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Number of applications for medical school	3,474	Maintain	3,854	Achieved
Mean MCAT scores: Verbal Reasoning, Physical Sciences, Biological Sciences	32	Maintain	32	Achieved
GPA of accepted applicants	3.7	Maintain	3.7	Achieved
Limit % increase in annual student medical debt compared to national benchmarks* and prior year	UI: $160 K US: $180 K	Maintain median medical student debt to below national median	UI: $179 K US: $180 K	Achieved

**national benchmarks changed mid-year from average to median*

Scorecard: People

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Develop and deliver Service Excellence training to all staff	77% trained	85%	78%	Not Achieved*
% of Performance Appraisals Completed	100%	100%	100%	Achieved
% of Sexual Harassment Training Completed	100%	100%	100%	Achieved
Compliance and Qualification Enterprise Wide System Go Live	NEW	Completion	Complete	Achieved

**forced to cancel Service Excellence training due to unannounced Joint Commission accreditation visit during the same week (9/12/16) training was scheduled*

Scorecard: Diversity

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Complete annual assessment of goals for the 2014-17 Carver College of Medicine Strategic Diversity Roadmap.	Diversity goals, strategies and metrics have been identified and will be implemented in FY16.	Departmental assessment of diversity goals, strategies and metrics reported by June 2016.	88% of departments have provided update of FY16 goals and have specified FY17 goals.	Partially Achieved
Complete comprehensive strategic plan to advance culturally responsive care throughout the enterprise.	NEW	Culturally Responsive Care strategic plan complete by June 2016.	In Process	Not Achieved
Complete enterprise-wide review of use and effectiveness of CultureVision.	CultureVision assessment plan proposed; awaiting approval by CultureVision Project Team.	Review and assessment of use and effectiveness of CultureVision complete by June 2016.	Two-part assessment conducted and completed in fall 2015 and spring 2016.	Achieved
Complete and submit proposal to establish post-baccalaureate research education program in the biomedical sciences.	NEW	Proposal submitted, accepted and approved by December 2015.	Proposal funded by NIGMS (5 years @ $1.2m/year) to establish PREP@Iowa.	Achieved

Scorecard: Growth and Finance

FY2016 Performance

	FY15 Actual	FY16 Target	FY16 Actual	Upshot
Admissions (excl. Normal Newborn and OP Observation)	31,748	32,466	33,117	Achieved
UI Hospitals and Clinics Operating Margin %	6.2%	3.5%	6.9% (Preliminary)	Achieved
UI Physicians Operating Margin %	4.9%	3.6%	3.4% (Preliminary)	Not Achieved
Outpatient Clinic Visits (including Emergency Treatment Center and Hospital Dentistry)	888,996	933,992	939,228	Achieved
Surgical Cases (inpatient and outpatient)	29,958	30,750	30,877	Achieved
Philanthropy	$91.4M	$95.0M	$98.6M	Achieved

A New Approach for FY2017-2020

Strategic Planning

Develop a refreshed integrated strategic plan using a two-pronged approach

- Scenario Planning
- Strategic Planning

Targeted interviews, workshops and planning meetings held throughout the summer and fall involving a broad cross-section of internal & external stakeholders

Key improvements sought in new plan

- Better linkage to budget and resource needs
- More clearly established timeline and sequencing of major strategies
- Stronger execution of the plan
- Project Manager assigned to oversee smooth implementation

Timeline for completion

- Workshops, engagement, plan refinement to conclude in December 2016
- Final report to Board of Regents in February 2017

Strategic Planning vs. Scenario Planning

Strategic Planning

Strategic planning is a disciplined effort that produces fundamental decisions and actions that shape and guide what an organization is, whom it serves, what it does, and why it does it, with a focus on one future. A strong strategic plan:

- Reflects the values of the organization
- Inspires action to achieve a big future
- Explains how you'll win in the market
- Clearly defines the criteria for achieving success
- Guides everyone in daily decision making

Scenario planning can prepare organizations and individuals to be responsive to the full range of opportunities and challenges by planning for any future. Scenarios work alongside strategic plans to assure that strategy accounts for the environment in which it has to work.

Potential Challenges Facing UI Health Care

Changes in Technologies

COULD BE REVOLUTIONARY "IF"

- Breakthroughs in medical technologies
- Increased economic growth (more capital available)
- Increased investments in all types of technologies
- Improved applications of big data for medical purposes

COULD BE SIMPLY INCREMENTAL "IF"

- Slow to moderate economic growth—difficult environment for investment
- Regulatory limitations on medical technologies (Theranos backlash, privacy issues predominate)
- Slow development of big data and communications technologies (Difficult to integrate, massive system failure, lawsuits)

Potential Challenges Facing UI Health Care

Changes in Landscape (Competition)

TRADITIONAL HEALTH CARE LANDSCAPE

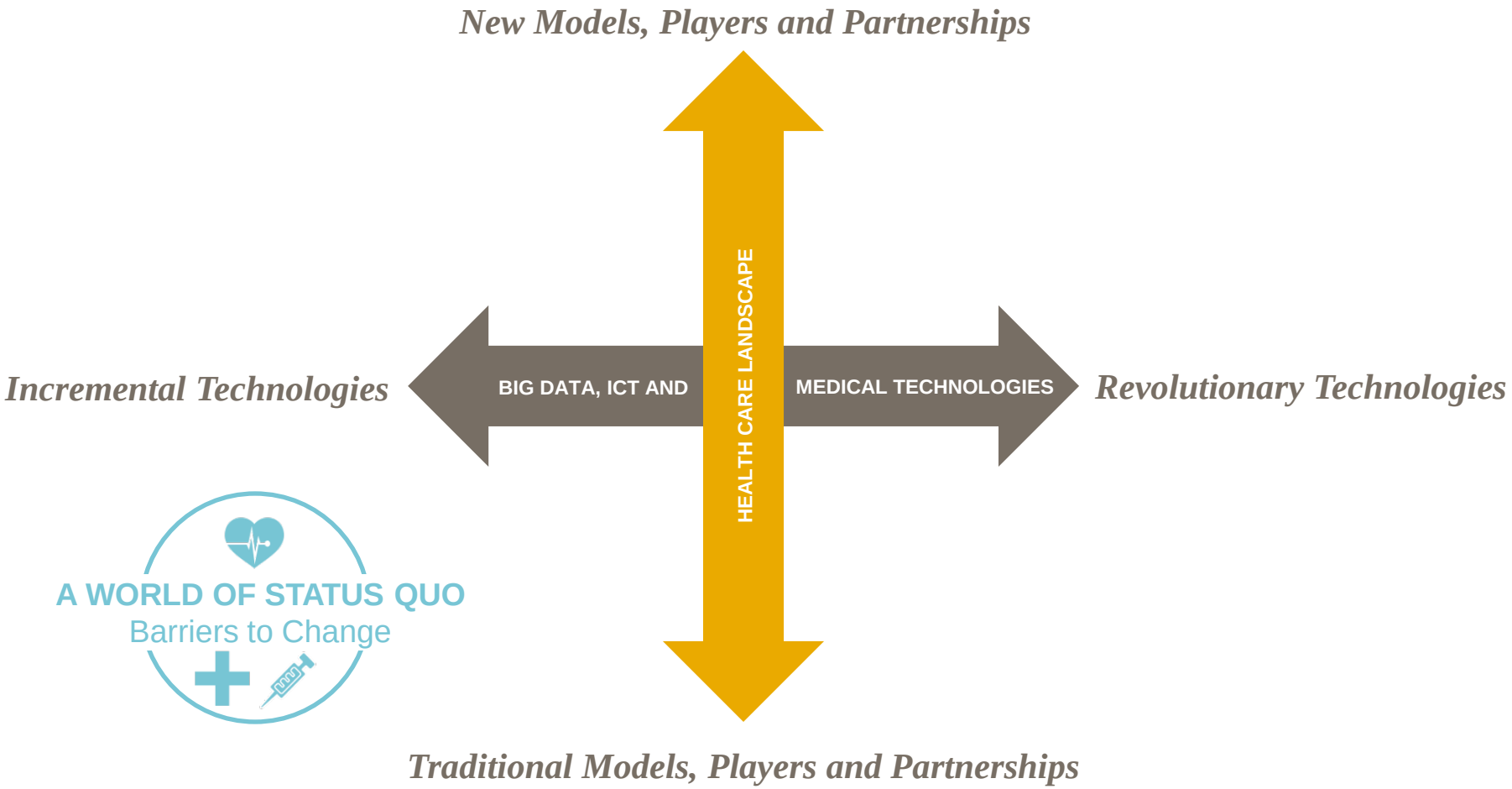
- State restrictions on competition
- Obligation for cares (Iowa Care like world)
- Focus in reducing costs
- Limitations in availability of talent
- Increased costs of labor
  - » Single payer base care – intense competition at upper levels
- New expectations for care and delivery models (from patient-centered care to patient-directed care)
- Broadening of health care market
  - » Medical tourism encouraged by insurers

NEW HEALTH CARE LANDSCAPE

- Rapid increases in costs – but also major rewards for risk taking
  - » Push toward for-profit medicine
  - » Google – Facebook - VCs are getting in healthcare
  - » Providers assume risk in bundle payment models
  - » Health Care insurance becomes portable
  - » Single payer base care – intense competition at upper levels
- New expectations for care and delivery models (from patient-centered care to patient-directed care)
- Broadening of health care market
  - » Medical tourism encouraged by insurers
- Insurers become providers – and vice-versa

A World of the Status Quo

Incremental Technology/Traditional Health Care Landscape



A World of the Status Quo

Incremental Technology/Traditional Health Care Landscape

This is a world in which cost pressures, uncertainties, false starts and regulations protect the status quo and create barriers to innovation and change:

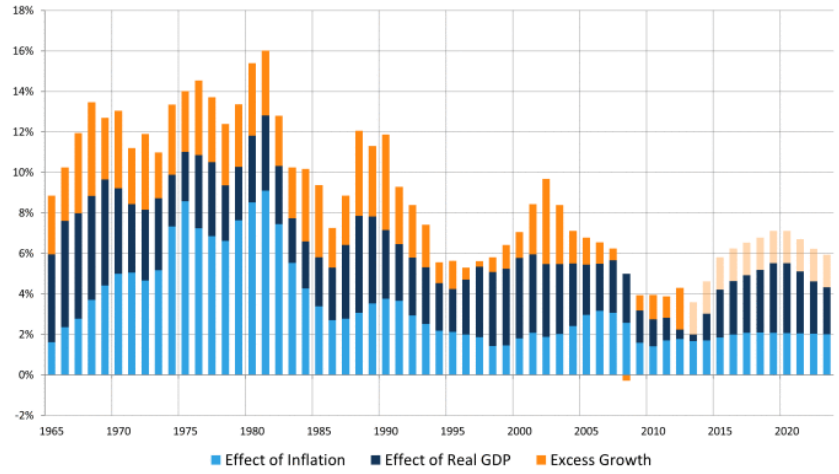
Incremental technology development continues but is limited by increased regulation, privacy concerns and the challenges of integration.

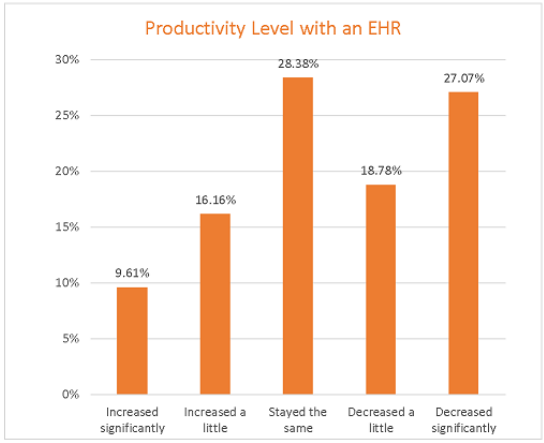
Traditional competition continues, based on diagnosis (rather than prevention) and increased demand from patients who are elderly, sicker and have fewer resources– also reflected in research spending and educational priorities. The Status Quo – Barriers to Change.

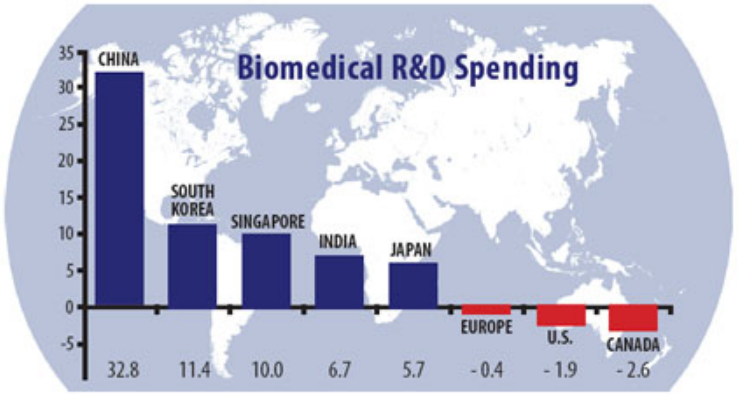
World of the Status Quo

Supporting Trends

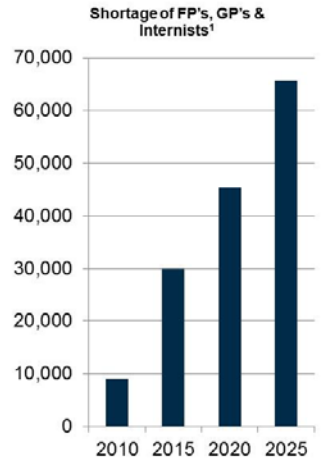
Chart 3: Actual and Projected Growth In Health Spending by Component

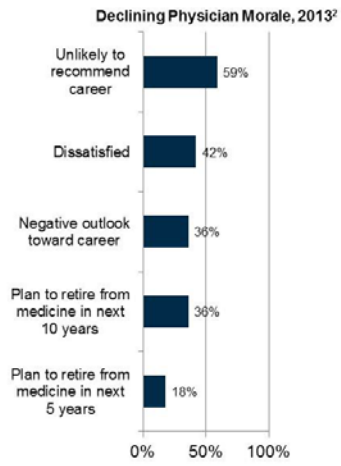






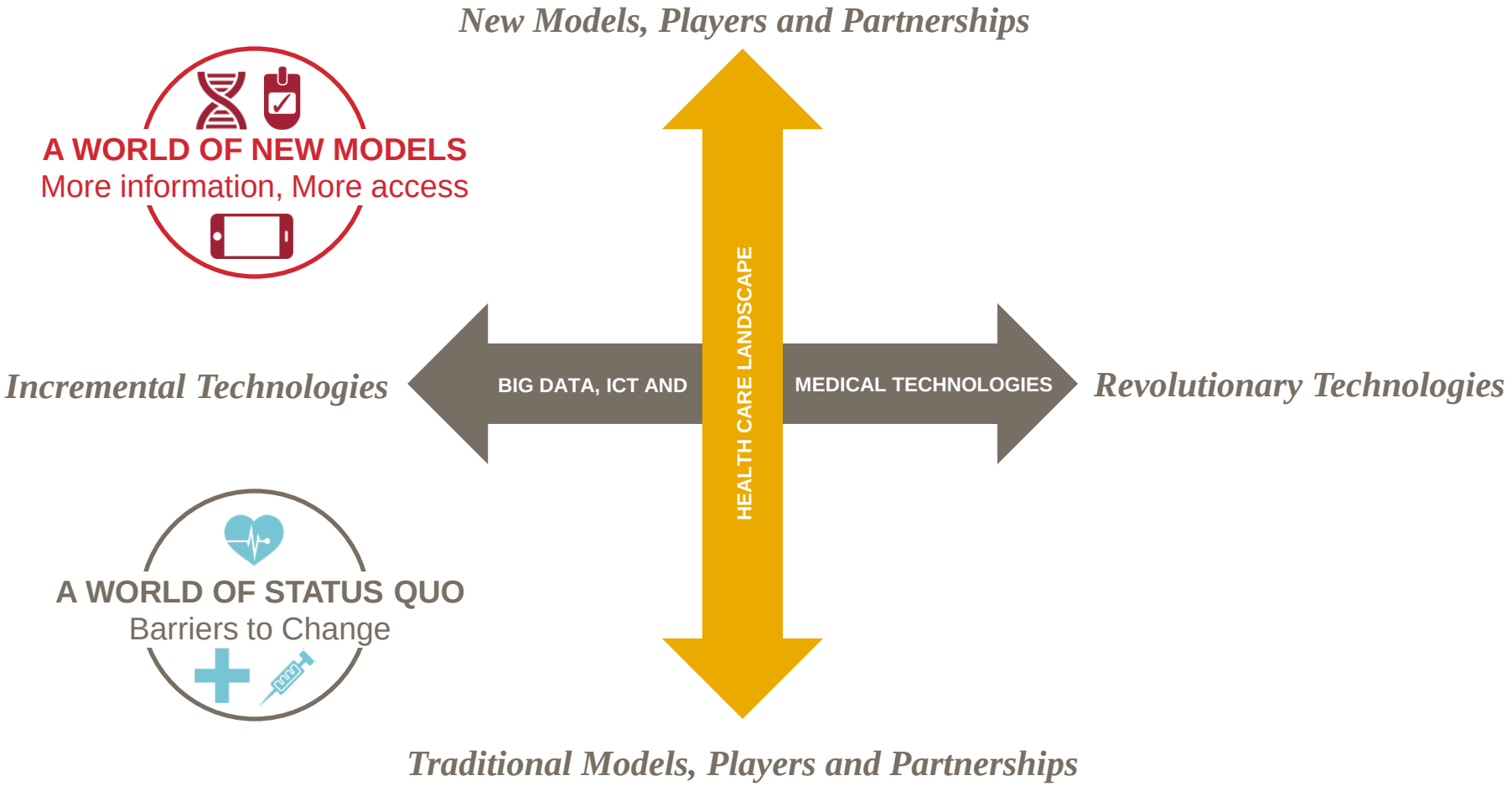
SHORTAGE OF PRIMARY CARE PHYSICIANS PROJECTED TO WORSEN





Sources: [1]AAMC. The Impact of health care reform on the future supply and demand for physicians: Updated projections through 2025. June 2010; [2]Filling the Void: Physician Outlook and Practice Trends, 2013. Reported by Jackson Healthcare. http://www.jacksonhealthcare.com/media/191888/2013physicianttrends-void_ebk0513.pdf

A World of New Models



A World of New Models

More Information and Access

This is a world in which increased demand, cost pressures and changes in technology support new models for care and delivery.

Incremental technology development is focused on information, access and affordability, including integration of health care data with services and support for lower cost, higher-volume delivery channels, ranging from pharmacies to tele-health.

New types of competition emerge, based on leveraging medical data and technology to provide preventive services, common diagnostics, and chronic treatments.

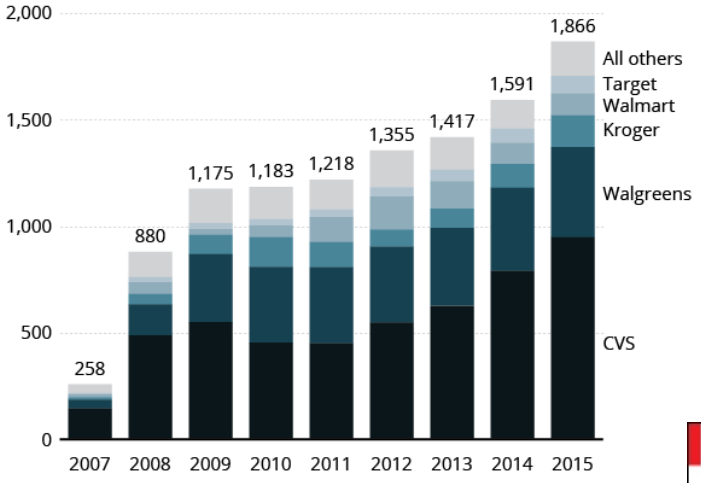
A World of New Models

Supporting Trends

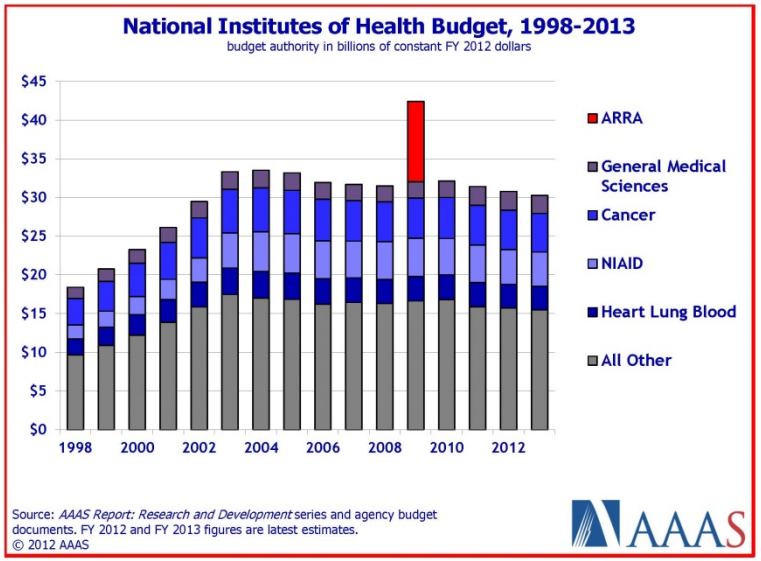
The Drugstore Will See You Now

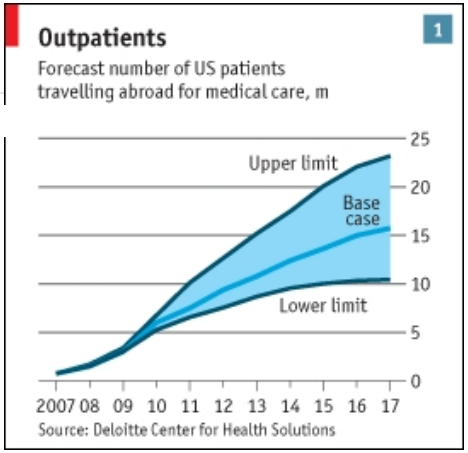
Major pharmacy chains and big box retailers like Walmart are looking to draw customers by offering health care services. Since 2007, the number of clinics at these stores increased more than sevenfold.

Retail clinics at the start of the year

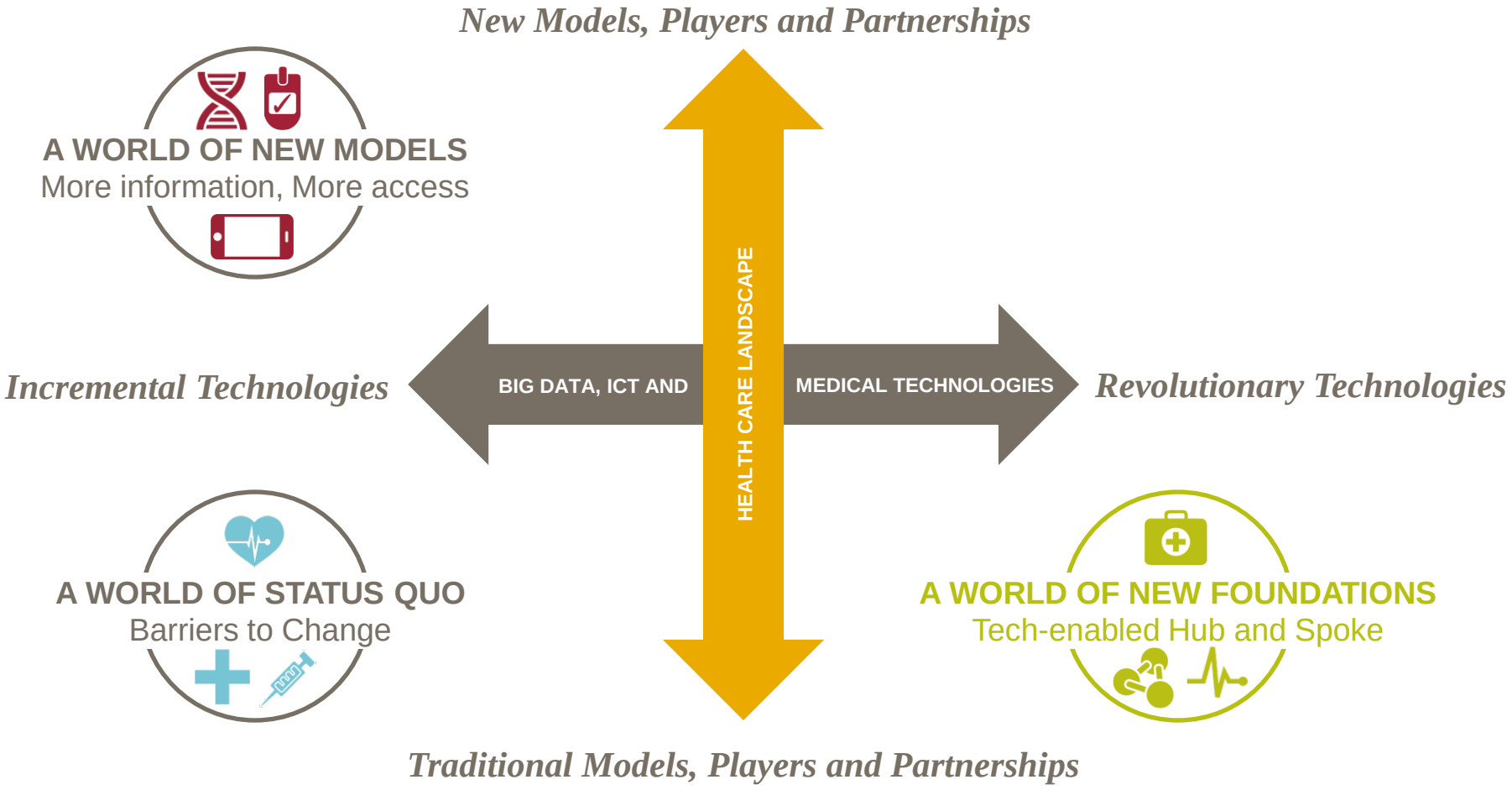


Notes: Walmart locations include primary care clinics and basic care clinics operated as joint ventures. Walgreens also operates clinics inside the company's Duane Reade stores. The Little Clinic offers medical care at Kroger brands including Fry's Food Stores, King Soopers and JayC Food Stores.
Source: Merchant Medicine





Potential Challenges Facing UI Health Care



A World of New Foundations

Tech-enabled Hub and Spoke

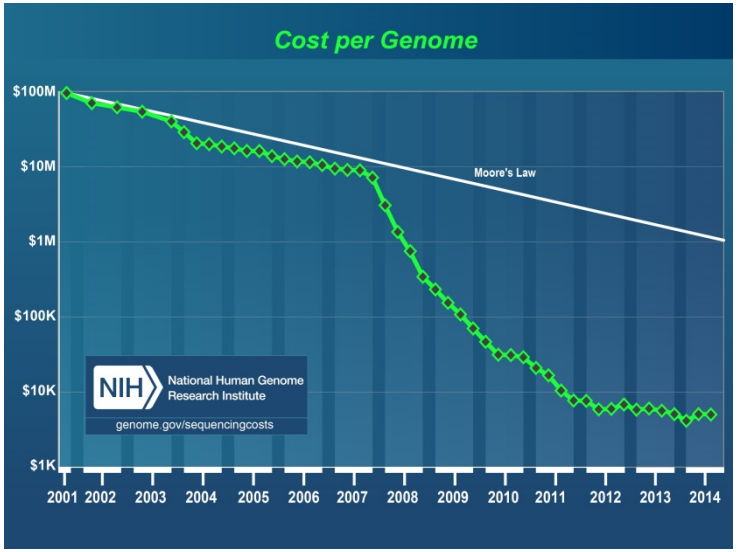
This is a world in which traditional players and models provide the foundation for a technological transformation of health care.

Revolutionary technology developments extend personalization across all aspects of healthcare: research, clinical and education (including prevention, diagnostics, treatment, information, and administration).

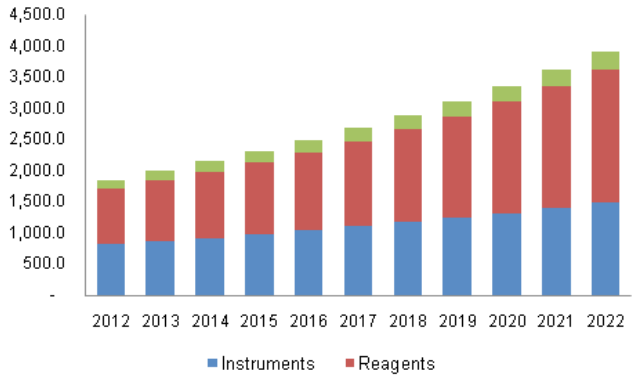
Traditional competition remains at the center of a “hub-and-spoke” model for care delivery, emphasizing the development and application of new medical technologies along defined care pathways.

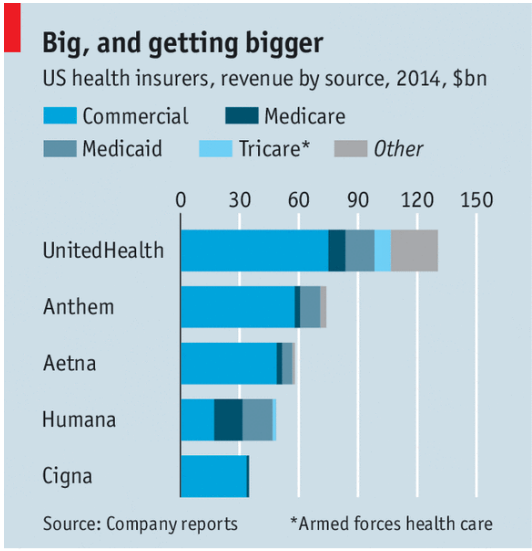
A World of New Foundations

Supporting Trends



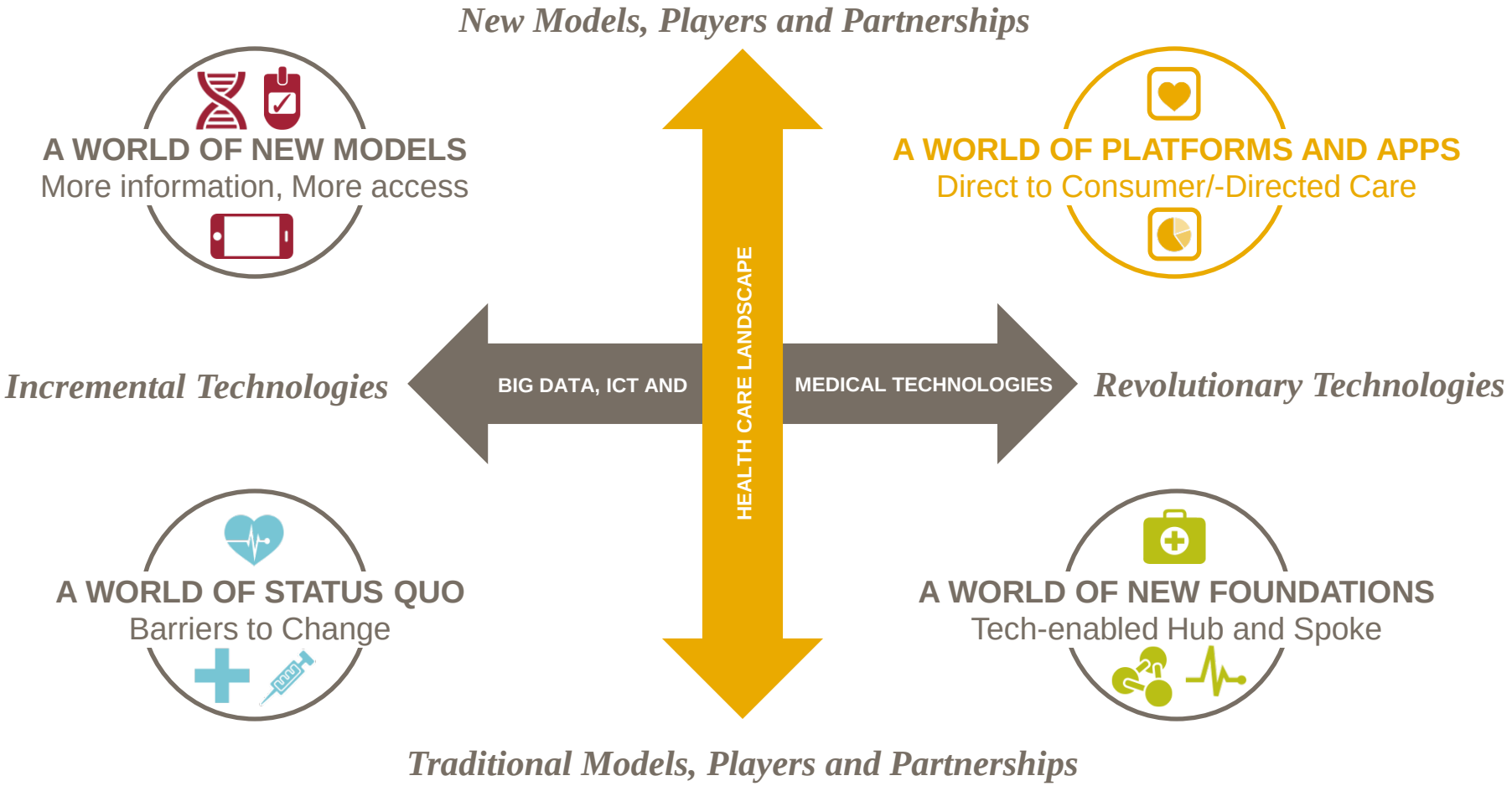
U.S. molecular diagnostics market, by product, 2012-2022, (USD Million)





A World of Platforms and Apps

Revolutionary Technology/New Health Care Landscape



A World of Platforms and Apps

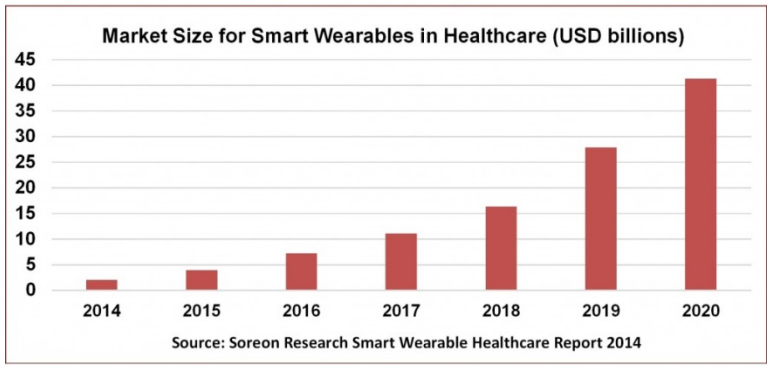
This is a world in which technology is embedded deeply within all aspects of health care, driving a major change in the provider/supplier landscape.

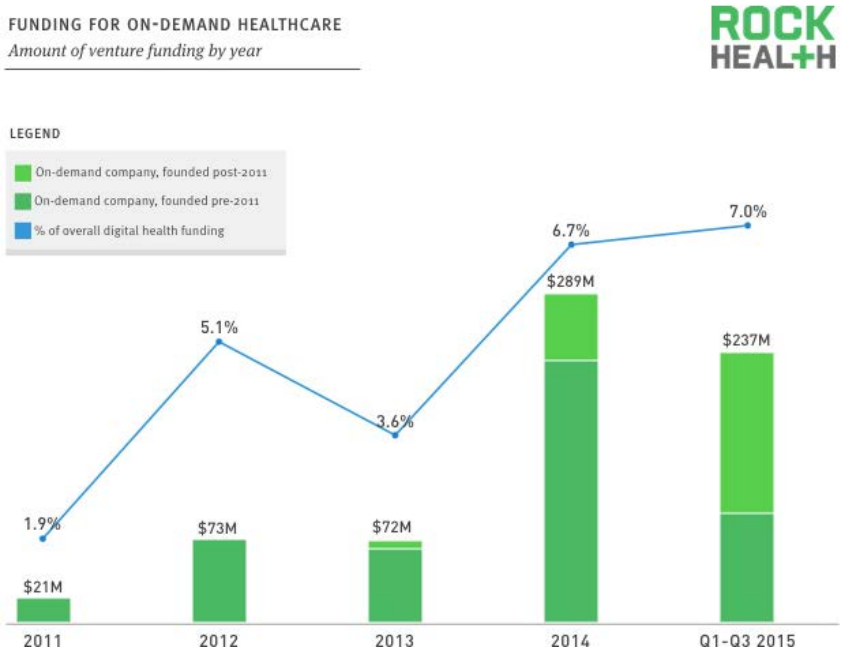
Revolutionary technologies support “direct to consumer” health care, focused on real-time patient monitoring and supported by extensive, personalized tele-medicine capabilities.

New types of competition emerge based on approved algorithms to guide patient care, with primary care increasingly conducted online/remotely and tertiary care provided on a regional basis.

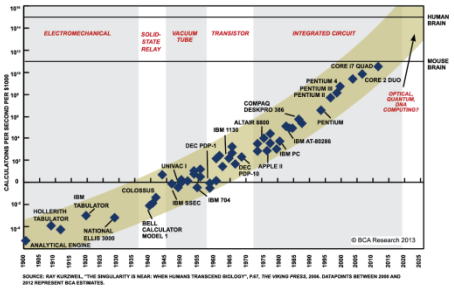
A World of Platforms and Apps

Supporting Trends



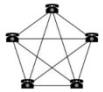


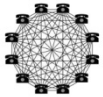
Moore's Law

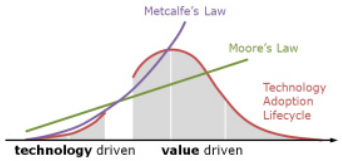


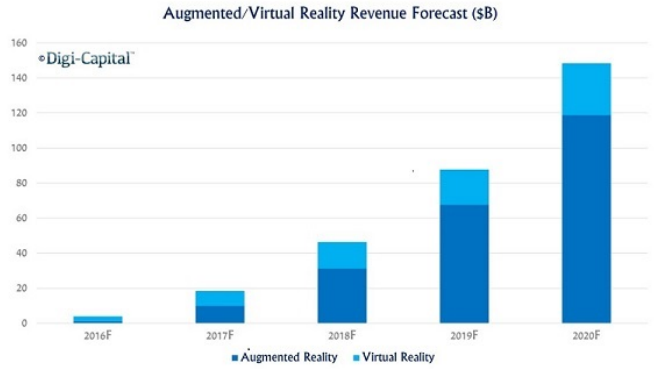
Metcalfe's Law:
Connections in a network = n(n-1)/2


2 telephones = 1 connection


5 telephones = 10 connections

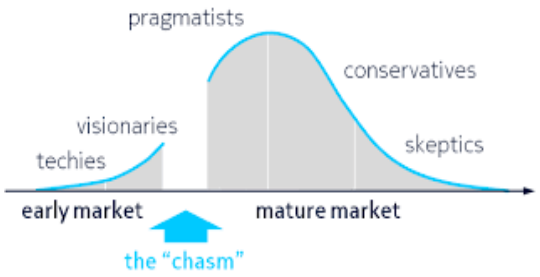

12 telephones = 66 connections





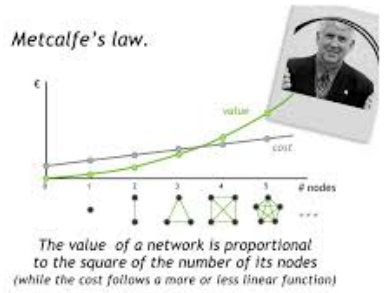
Potential Challenges Facing UI Health Care

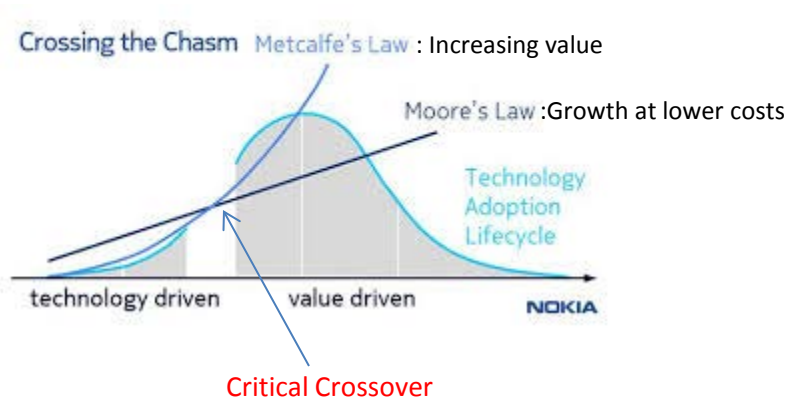
Technology Adoption Life Cycle

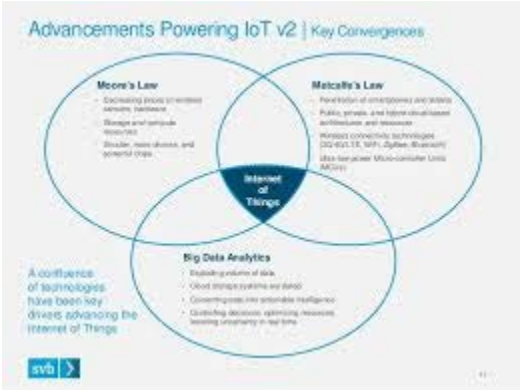


Moore's Law: "Growth"

Metcalfe' Law: "Network"







Potential Challenges Facing UI Health Care

BUILD NETWORKS
to provide full access and secure referral

BUILD CAPACITY
To manage change, granularity-accelerate learning to support both deconstruction and re-integration

New Models, Players and Partnerships

A WORLD OF NEW MODELS
More information, More access

A WORLD OF PLATFORMS AND APPS
Direct to Consumer/-Directed Care

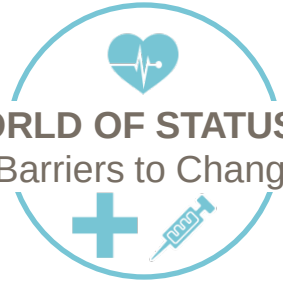
Incremental Technologies

BIG DATA, ICT AND

HEALTH CARE LANDSCAPE

MEDICAL TECHNOLOGIES

Revolutionary Technologies



A WORLD OF STATUS QUO
Barriers to Change

A WORLD OF NEW FOUNDATIONS
Tech-enabled Hub and Spoke

BUILD SCALE
With carefully-chosen provider partnerships and integration with advanced technology platforms

BUILD FLEXIBILITY
Manage your money-costs-capital

Traditional Models, Players and Partnerships

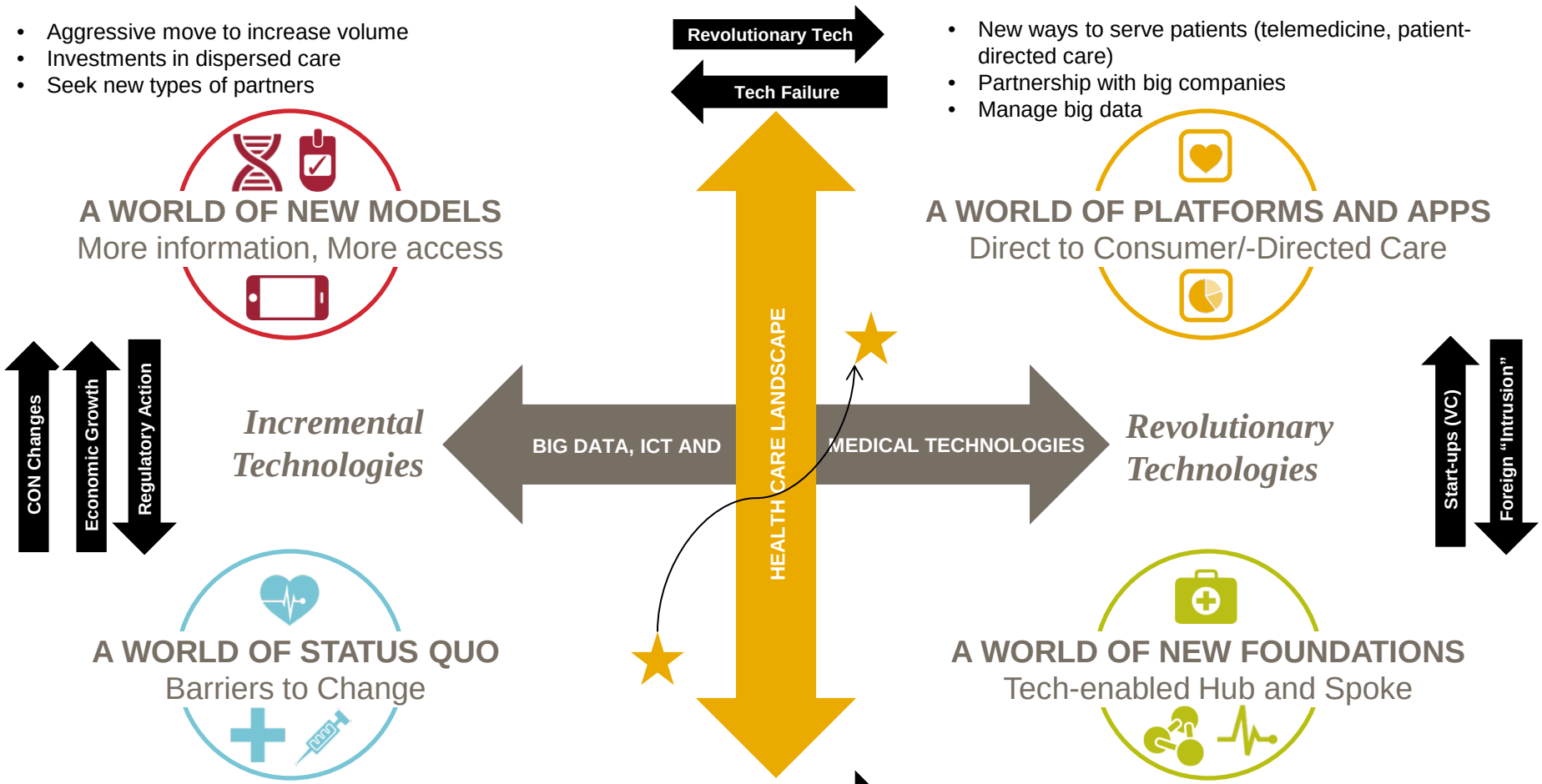
Scenario Dynamics

- Aggressive move to increase volume
- Investments in dispersed care
- Seek new types of partners

A WORLD OF NEW MODELS
More information, More access

- New ways to serve patients (telemedicine, patient-directed care)
- Partnership with big companies
- Manage big data

A WORLD OF PLATFORMS AND APPS
Direct to Consumer/-Directed Care



A WORLD OF STATUS QUO
Barriers to Change

- Traditional partnerships
- Cost reduction
- Concentration on strengths

A WORLD OF NEW FOUNDATIONS
Tech-enabled Hub and Spoke

- Partnership to bridge capital needs
- Risk of losing out in new areas and being stuck with commoditized markets

Today's Presenters

Infection Prevention Starts at Iowa

Eli Perencevich, MD, MS

Professor of Internal Medicine, University of Iowa Carver College of Medicine

Director and Principal Investigator, Comprehensive Access and Delivery Research and Evaluation (CADRE), Iowa City Veterans Administration Healthcare System

Today's Presenters

Infection Prevention Starts at Iowa

Daniel Diekema, MD

Director, Division of Infectious Diseases

Professor of Internal Medicine—Infectious Diseases and Pathology, University of Iowa Carver College of Medicine

Co-Chair, CDC's Healthcare Infection Control Practices Advisory Committee (HICPAC)

Past President, Society for Healthcare Epidemiology of America

FACULTY PRESENTATION: INFECTION PREVENTION STARTS AT IOWA

Daniel J. Diekema, MD, MS

Director, Division of Infectious Diseases

Clinical Professor of Internal Medicine—Infectious Diseases, and Pathology

Eli Perencevich, MD, MS

Professor of Internal Medicine—General Internal Medicine, and Epidemiology

Multi-Drug Resistant Organisms (MDRO)

Infection Prevention Starts at Iowa

ANTIBIOTICS NECESSARY FOR MODERN MEDICINE

- Cancer
- Chemotherapy
- Organ Transplantation
- Surgery

NO INVESTMENT IN ANTIBIOTICS IN OVER 30 YEARS

- Carbapenem-resistant *Enterobacteriaceae (CRE)*
- Methicillin-resistant *Staphylococcus aureus* (MRSA)

PRESIDENT'S COUNCIL ADVISORS ON SCIENCE AND TECHNOLOGY

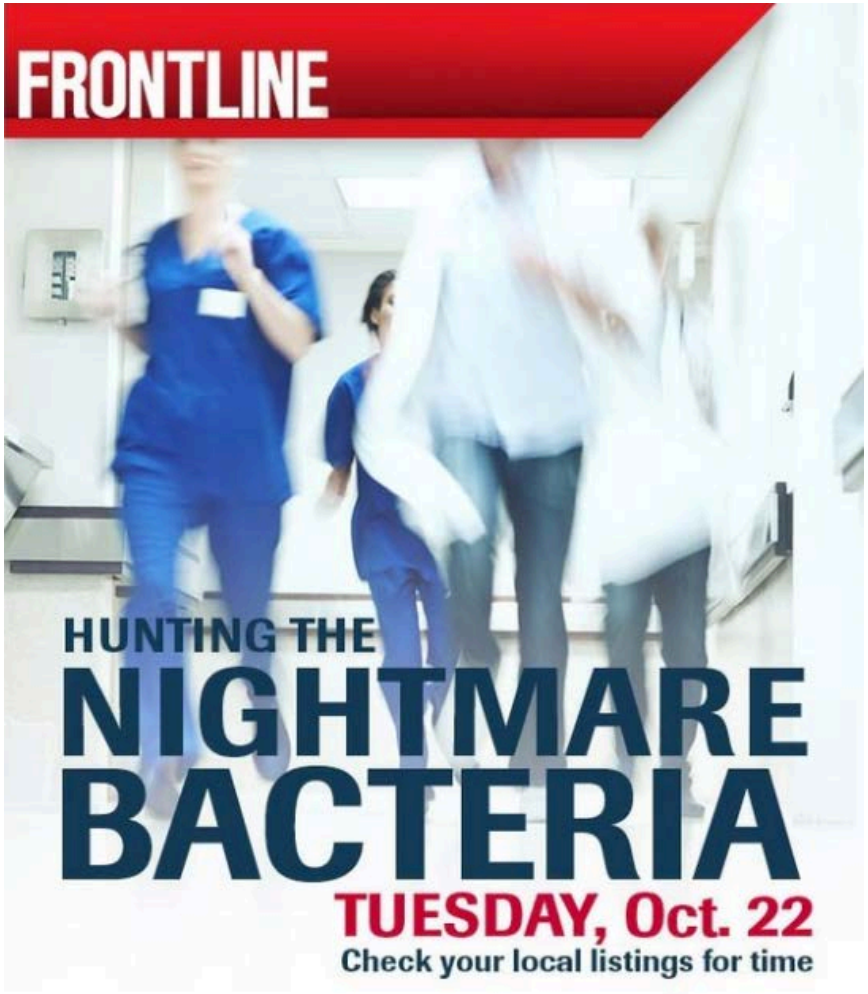
- Combating Antibiotic Resistance (2014)

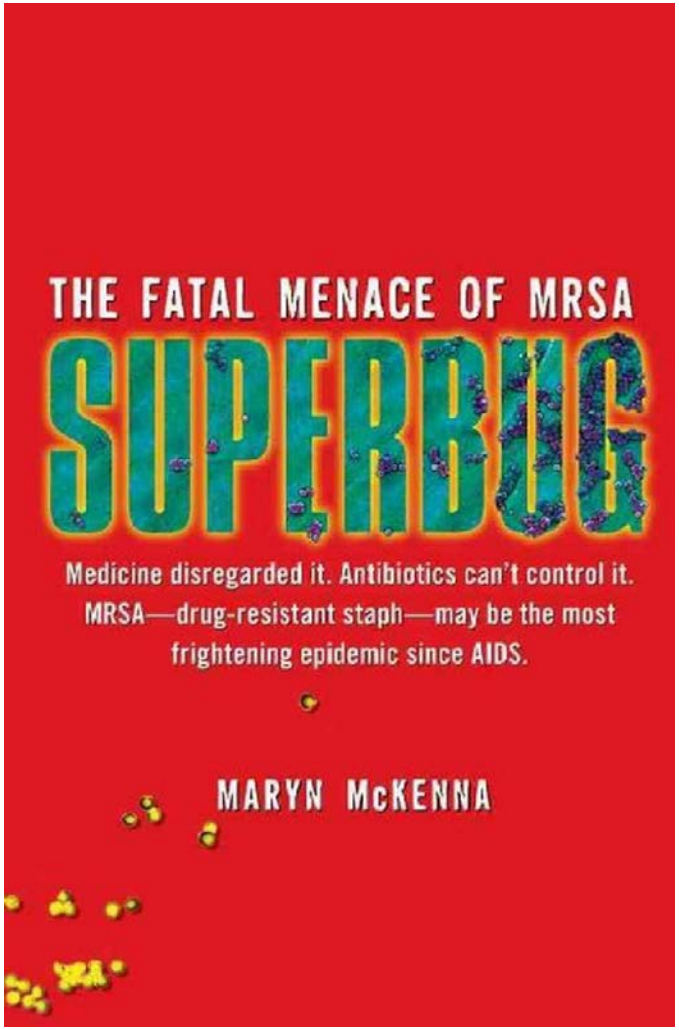
UNITED NATIONS DECLARATION, SEPTEMBER 2016

- 70,000 die worldwide each year
- 10 million deaths per year by 2050

In the Media

Infection Prevention Starts at Iowa





Iowa's International Role

Infection Prevention starts at Iowa

Richard Wenzel, MD (1986-1995)

- Professor and Associate Chair, Internal Medicine
- President, Society for Healthcare Epidemiology of America
- Mentored leaders worldwide: Trish Perl, Didier Pitter, Andreas Widmer, Andreas Voss, Michael Edmond, Daniel Diekema

Current Group, MD (2010- Present)

- President, Society for Healthcare Epidemiology (Diekema)
- Edmond, Diekema, Perencevich, Herwaldt, Polgreen, Schweizer – 752 unique publications

VIEWPOINT

Ebola Virus Disease and the Need for New Personal Protective Equipment

Michael B. Edmond, MD, MPH, MPA
Department of Internal Medicine, University of Iowa Carver College of Medicine, Iowa City.

Daniel J. Diekema, MD, MS
Department of Internal Medicine, University of Iowa Carver College of Medicine, Iowa City.

Eli N. Perencevich, MD, MS
Department of Internal Medicine, University of Iowa Carver College of Medicine, Iowa City; and Iowa City VA Health System, Iowa City.

Preventing transmission of pathogens in the health care setting with the use of personal protective equipment (PPE) has been an area of longstanding debate in the infection prevention community. Recently, reports of nosocomial transmission of Ebola virus to 2 nurses from the same patient in Texas (despite their use of PPE) has generated great concern and presents new challenges, particularly because there is no post-exposure prophylaxis or effective antiviral therapy for Ebola, and approximately half of the cases are fatal.

Health care workers are at particular risk for Ebola infection, accounting for one-quarter of cases in prior outbreaks.[1] This appears to be related to low infectivity early in the infection, when patients are in the community. As the severity of illness increases and patients are often hospitalized, infectivity increases, accounting for an elevated risk for infection among health care workers.

Some health care workers should have extensive experience wearing PPE during routine care as currently recommended by the Centers for Disease Control and Prevention (CDC), and most research concerning PPE has focused on its utility for prevent- to transmission, and there has been limited funding for MDR-bacterial research, which might target PPE or other infection prevention system improvements.[4]

Key clinical and microbiologic features of Ebola virus disease should guide current recommendations on how best to protect health care workers. The virus is found in body fluids that health care workers are likely to contact. These include blood, urine, vomitus, and stool. Gastrointestinal fluid losses can be massive (5-10 L/day), and simulated vomiting studies have shown droplet dispersion greater than 10 ft.[5] In patients dying of Ebola virus infection, serum viral loads can reach 10 billion copies/mL.[6] Although indirect contact (via fomites) with the virus has been documented to result in transmission, existing data suggest that this is uncommon.[7]

The frequency with which gloves and gowns become contaminated during the care of the Ebola patient is unknown. However, given that virus is found both in bodily fluids and on the surface of the skin, it should be assumed that gowns and gloves become highly contaminated during direct patient care, particularly when

EDITORIAL

Editorials represent the opinions of the authors and *JAMA* and not those of the American Medical Association.

Decline in Invasive MRSA Infection
Where to Go From Here?

Eli N. Perencevich, MD, MS
Daniel J. Diekema, MD

STAPHYLOCOCCUS AUREUS, UNLIKE MANY VIRULENT pathogens, is a common commensal asymptomatically colonizing the nares[1] and other body sites in approximately 30% of healthy individuals. The re-

before 2001 have now been replaced by the unrelated USA300 strains that currently cause the majority of community-associated MRSA infections in the United States.[3]

The emergence of MRSA as an important pathogen was accompanied by increasing physician and public awareness through scientific and media reports. For instance, following publication of a large-scale epidemiological inves-

Comparative Effectiveness

Infection Prevention Starts at Iowa

COMMENTARY

Infection Prevention and Comparative Effectiveness Research

Eli N. Perencevich, MD, MS

Ebbing Lautenbach, MD, MPH, MSCE

HEALTH CARE–ACQUIRED INFECTIONS, PARTICULARLY those due to antimicrobial-resistant bacteria, have received significant attention in recent years. Despite work focused on elucidating the epidemiology and effects of such infections, success in curbing their emergence remains elusive. Few new classes of antibiotics are even in the earliest stages of development, making efforts to prevent the emergence and spread of antimicrobial-resistant bacexample, MRSA screening programs test patients for MRSA carriage and isolate colonized patients to prevent transmission of MRSA. These screening programs indirectly benefit patients who are not isolated. To assess population-level interventions, alternatives to RCTs are needed.

The cluster randomized trial is well suited to study the comparative effectiveness of population-level interventions.[2] Cluster randomized trials may involve randomization at different levels including the full hospital or individual hospital units. These trials are complicated, costly, and time-consuming but are absolutely vital if population-

Health Services Research Approach

- Virtual trials using mathematical models
  - Agent-based mathematic models
  - Compartmental models
- Existing data
  - Systematic reviews, published trials
  - Administrative data (VA)
- Quasi-experimental (before-after) studies
  - Time-series data

VA Study Network

Collaborative Research to Enhance Transformation and Excellence

- VA-funded infection prevention study network
  - CREATE, VA HSR&D, $4.5 Million, 5 years
  - National System with 130 hospitals
  - Standardized electronic health records
    - **Microbiology**, ADT, Pharmacy
- 10 hospital network
  - Clinical Trials
- Remaining 120 hospitals are controls

VA HSR&D Center of Innovation

Infection Prevention Starts at Iowa

Center for Comprehensive Access and Delivery Research and Evaluation

- Principal Investigator, Director – Perencevich
- “Develop, implement and test innovative strategies that expand access to high-quality primary and specialty care, while ensuring that the care delivered is safe and free of preventable infections”
- 5 years, $3.2 million

BMJ

BMJ 2013;346:f2743 doi: 10.1136/bmj.f2743 (Published 13 June 2013)

RESEARCH

Effectiveness of a bundled intervention of decolonization and prophylaxis to decrease Gram positive surgical site infections after cardiac or orthopedic surgery: systematic review and meta-analysis

Marin Schweizer *assistant professor*[1 2 3], Eli Perencevich *professor*[1 2 3 4], Jennifer McDanel *student research assistant*[2], Jennifer Carson *research assistant*[1], Michelle Formanek *student research assistant*[2 3], Joanne Hafner *associate project director*[5], Barbara Braun *project director*[5], Loreen Herwaldt *professor*[1 2 4]

Research

Original Investigation

Association of a Bundled Intervention With Surgical Site Infections Among Patients Undergoing Cardiac, Hip, or Knee Surgery

Marin L. Schweizer, PhD; Hsiu-Yin Chiang, MS, PhD; Edward Septimus, MD; Julia Moody, MS; Barbara Braun, PhD; Joanne Hafner, RN, MS; Melissa A. Ward, MS; Jason Hickok, MBA, RN; Eli N. Perencevich, MD, MS; Daniel J. Diekema, MD; Cheryl L. Richards, MJ, LPN, LMT; Joseph E. Cavanaugh, PhD; Jonathan B. Perlin, MD, PhD; Loreen A. Herwaldt, MD

IMPORTANCE Previous studies suggested that a bundled intervention was associated with lower rates of *Staphylococcus aureus* surgical site infections (SSIs) among patients having cardiac or orthopedic operations.

Editorial page 2131

Supplemental content at jama.com

Clinical Trials

Infection Prevention Starts at Iowa

Research

Original Investigation

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- 20-hospital, AHRQ-funded trial
- 42% reduction in post-operative surgical infections

Quasi-Experimental Study

Infection Prevention Starts at Iowa

ARTICLE

Benefits of Universal Gloving on Hospital-Acquired Infections in Acute Care Pediatric Units

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KEY WORDS

pediatric, hospital-acquired infection, glove, barrier precautions, infection prevention, isolation

ABBREVIATIONS

WHAT'S KNOWN ON THIS SUBJECT: Health care–associated infections cause considerable morbidity and mortality among hospitalized children. Simple barrier precautions such as universal gloving of health care workers' hands may reduce transmission of infectious agents between patients.

WHAT THIS STUDY ADDS: Mandatory use of gloves during respiratory syncytial virus season in pediatric units prevented other health care–associated infections such as central line–associated bloodstream infections, particularly in intensive care settings. These secondary benefits suggest continuing mandatory gloving throughout the year.

Quasi-Experimental Study

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WHAT'S KNOWN ON THIS SUBJECT: Health care–associated infections cause considerable morbidity and mortality among hospitalized children. Simple barrier precautions such as

- 25% reduction in healthcare-associated infections
- 37% reduction in bloodstream infections

associated bloodstream infections, particularly in intensive care settings. These secondary benefits suggest continuing mandatory gloving throughout the year.

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ABBREVIATIONS

CDC Epicenter

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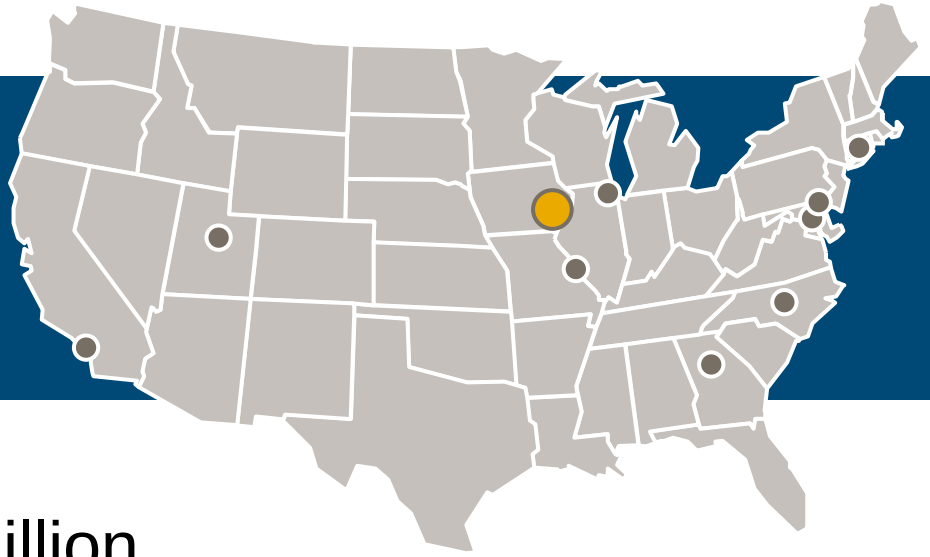

- 3 years (2015-2018), $2.2 million
- Perencevich, Polgreen, Herwaldt, Schweizer
- Address gaps in healthcare-associated Ebola transmission

Meta-analysis: What is known?

Systematically evaluate the existing literature

1

Effectiveness of universal contact precautions for preventing healthcare-associated infections

2

Side effects (mental and physical) from isolation

3

Did Ebola preparedness lead to positive effects?

New Ebola Protection Protocols

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- 1. Assess if applying novel product (Provodine$^{TM)}$ to hands protects against self-contamination during personal protective equipment doffing
- 2. Identify factors that increase or decrease self-contamination risk during doffing
- 3. Develop, implement, & assess a personal protective equipment manual on doffing

Incredible Innovation

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- Computerized vision for tracking healthcare worker activities and compliance with personal protective equipment (gowns/gloves/masks)
- Virtual “Buddy”
- Use data from Microsoft Kinects to track skeletons of healthcare workers in patient rooms

Discoveries for Prevention

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- Iowa's Leadership in Infection Prevention Research began 30 years ago and continues today
- Growing team of investigators funded via
  - CDC, VA HSR&D, AHRQ, NIH
- Infection Prevention research, not very high-profile
  - Without this research, the antibiotic era as at risk of ending, which would impact cancer therapies, transplantation and healthcare system as we know it

Thank You

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