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Variation in Payment for Hospital Care in Rhode Island

Supplementary Information and Methodology

Prepared for the Rhode Island Office of the Health Insurance Commissioner and the Rhode Island Executive Office of Health and Human Services

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Appendix A: Supplementary Information

Notes to the Reader

Appendix A provides supplementary tables and charts tied to each finding in the main report. For ease of reference, sections in this appendix are numbered in parallel with sections in the main report. For example, Section A.3.1 in this document provides additional information on Section 3.1 in the main report. If no supplementary information is relevant, then the section heading is omitted.

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A.2 Setting the Stage

A.2.1 Payment for Hospital Care in Rhode Island

The Analytical Dataset

The analytical dataset for the study was created as described in Appendix Section B.1. Almost all focus was on Rhode Island's 11 general hospitals. Data on services provided at the state's two psychiatric hospitals were also considered in the analysis of mental health care in Section 3.4 of the report. Table A.2.1.1 provides summary statistics on the 11-hospital analytical dataset as well as on utilization at other hospitals.

Table A.2.1.1

Overview of Hospital Care (Cost Includes the Direct Medical Education)

Payer Group	Inpatient Care				Outpatient Care				Total Care		
	Stays	Chgs (Mlns)	Cost (Mlns)	Payment (Mlns)	Visits	Chgs (Mlns)	Cost (Mlns)	Payment (Mlns)	Chgs (Mlns)	Cost (Mlns)	Payment (Mlns)
Analytical Dataset (11 General Hospitals)											
Medicare FFS	34,190	$1,113	$454	$377	502,930	$650	$182	$136	$1,567	$636	$513
Medicare mgd care	18,200	$601	$237	$201	161,950	$337	$93	$78	$839	$331	$279
Medicaid FFS	5,854	$204	$82	$82	63,920	$91	$27	$17	$286	$109	$98
Medicaid mgd care	18,706	$332	$134	$120	292,754	$363	$108	$102	$467	$243	$221
Private payers	20,758	$520	$210	$267	498,741	$804	$236	$271	$730	$446	$538
Subtotal	97,708	$2,771	$1,117	$1,047	1,520,295	$2,245	$647	$603	$3,888	$1,764	$1,650
Rhode Island Specialty Hospitals and Out-of-State Hospitals											
Medicare FFS	1,994	$46	$23	$12	2,181	$3	$1	$1	$68	$24	$13
Medicare mgd care	1,113	$42	$17	$14	12,420	$22	$6	$5	$59	$23	$19
Medicaid FFS	200	$9	$5	$5	1,606	$2	$1	$0	$13	$5	$5
Medicaid mgd care	2,385	$69	$39	$38	10,579	$11	$4	$5	$108	$43	$43
Private payers	3,551	$115	$49	$67	66,447	$119	$34	$58	$164	$83	$125
Subtotal	9,243	$280	$132	$136	93,233	$157	$46	$70	$412	$178	$206
All Hospitals											
Medicare FFS	36,184	$1,159	$476	$389	505,111	$653	$184	$137	$1,635	$660	$526
Medicare mgd care	19,313	$644	$254	$215	174,370	$360	$99	$83	$898	$354	$298
Medicaid FFS	6,054	$213	$86	$87	65,526	$93	$28	$17	$299	$114	$104
Medicaid mgd care	21,091	$401	$173	$158	303,333	$374	$112	$107	$574	$285	$265
Private payers	24,309	$635	$259	$334	565,188	$922	$270	$329	$894	$529	$663
Total	**106,951**	**$3,051**	**$1,249**	**$1,183**	**1,613,528**	**$2,402**	**$693**	**$673**	**$4,300**	**$1,942**	**$1,855**

Notes:

1. Medicare FFS outpatient data were not available at the claim level. Aggregate totals were estimated from Medicare Provider Statistical and Reimbursement reports provided by the hospitals.

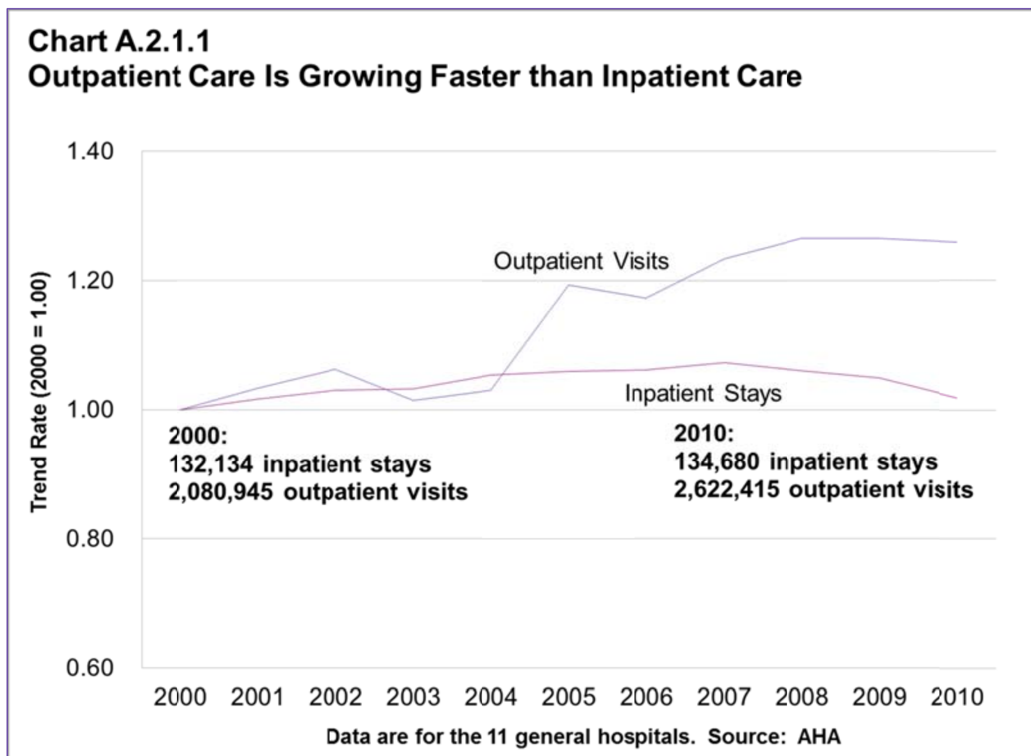
Trends in Inpatient and Outpatient Volume

In Rhode Island, outpatient hospital care continues to grow faster than inpatient care (Chart A.2.1.1). Between 2000 and 2010, total outpatient visits increased by 26 percent (2.3 percent a year) while total inpatient stays increased just 2.3 percent (0.2 percent a year). These trends mirror nationwide trends; for the U.S., outpatient visits increased 25 percent while inpatient stays increased 5.4 percent.[1]

The Concentration of Expenditure

Just 10 percent of hospital patients account for approximately half of all payments. This finding – known as the concentration of spending – is not new[2] but it is essential in understanding hospital utilization. Chart A.2.1.2 shows that 5,080 people accounted for 45 percent of inpatient payments while 36,453 patients accounted for 59 percent of outpatient payments. These figures exclude Medicare FFS patients, for whom we did not have unique patient identifiers. (For the other payers, including Medicare managed care, we received unique identifiers that had been scrambled to protect patient confidentiality.)

On the inpatient side, the high utilizers tended to have repeated admissions during the year rather than one or two extremely expensive stays. The average high utilizer had three admissions during the year, with an average length of stay of nine days. Within these 15,481 stays, the most common diagnosis related groups were bipolar disorder, major large and small bowel procedures, rehabilitation, septicemia and cardiac valve procedures without catheterization. These five DRGs together accounted for only 13 percent of the 15,481 stays, however; many other DRGs were also on the list.



As might be expected, high-utilizer patients tended to need expensive care. Payments totaled $355 million, averaging $22,973 per stay and $70,008 per high-utilizing person. High utilizers tended to be spread across the payers, with no payer having a notably disproportionate share. The average age was 53, with males and females roughly equal in number. If we had been able to include Medicare FFS in the analysis for this finding, presumably the average age and perhaps other results would have differed. The most expensive patient was a 62-year-old man with 14 stays during the year. Payment for his inpatient care totaled $1.6 million.

On the outpatient side, the explanation underlying the concentration of spending is somewhat different. It's not so much that a few people receive a lot of care, but rather than so many people receive a small amount of care. A total of 364,525 people – or almost 40 percent of Rhode Islanders – received at least one outpatient service, and that figure excludes Medicare FFS patients. Lab services were by far the most common, with the patient either visiting the hospital or the hospital lab processing specimens obtained elsewhere.

For the 36,452 high utilizers, the average number of outpatient visits during 2010 was 9.8, with total payments of $319 million or $8,739 per person. In terms of visits, the leading visit reasons were lab, emergency room and standard imaging; in terms of payments, the leading visit reasons were same-day procedures, emergency room and radiation/chemotherapy. The average age was 48 and 62 percent of high-utilizers were female. The most expensive patient was a boy with 55 visits. Patient for his outpatient care totaled $1.5 million.

Chart A.2.1.2
10% of Patients Accounted for About Half of Payments

Patient counts and payment figures exclude Medicare FFS. Patients counts are unique for each payer, but patients with more than one payer within the year were counted twice. The chart shows 50,809 unique inpatients and 364,525 unique outpatients.

Inpatient Care: Most Common and Most Expensive Conditions

All stays were grouped by both All Patient Refined Diagnosis Related Groups and Medicare Severity Diagnosis Related Groups. APR-DRGs were the primary method of adjusting payment measures for difference in patient casemix. To avoid over-reliance on any one method, we also used MS-DRGs for the adult medical-surgical population.

Table A.2.1.2 shows that maternity-related stays were the most common reasons for admission. The more expensive stays, however, tended to be for major infections such as septicemia and pneumonia, cardiovascular conditions such as heart failure and blocked arteries, and psychiatric conditions such as bipolar disorder and depression. Notably, septicemia ranked as the most expensive; this condition also ranks high on the list of potentially preventable conditions that can be acquired during treatment in a nursing home, hospital or other health care setting.[3]

Table A.2.1.2
Maternity-Related Stays were Most Common but Other Admission Reasons were More Expensive

Most Common DRGs (% of All Stays)	Most Expensive DRGs (% of Total Hospital Cost)
640-Normal Newborn (6%)	720-Septicemia (3%)
560-Vaginal Del (5%)	753-Bipolar Disorder (3%)
194-Heart Failure (3%)	194-Heart Failure (3%)
753-Bipolar Disorder (3%)	560-Vaginal Delivery (2%)
140-COPD (3%)	221-Maj Bowel Procs (2%)
139-Other Pneumonia (3%)	140-COPD (2%)
540-Cesarean Del (2%)	139-Other Pneumonia (2%)
751-Maj Depression (2%)	751-Major Depression (2%)
463-Kidney & Urinary Inf (2%)	860-Rehabilitation (2%)
720-Septicemia (2%)	540-Cesarean Delivery (2%)
201-Cardiac Arrhythmias (2%)	301-Hip Joint Replacement (2%)
383-Cellulitis (2%)	302-Knee Joint Replacemnt (2%)
302-Knee Joint Replacemnt (1%)	174-Percut CV Procs w AMI (2%)
750-Schizophrenia (1%)	175-Percut CV Procs w/o AMI (2%)
754-Depression Exc Major (1%)	750-Schizophrenia (2%)

Notes:
1) Stays are categorized by All Patient Refined Diagnosis Related Group (APR-DRG). DRG descriptions have been shortened for brevity.
2) COPD=chronic obstructive pulmonary disease; CV=cardiovascular; AMI=acute myocardial infarction (heart attack)

Table A.2.1.3 shows the distribution of all 106,951 stays by care category. The average casemix was 0.99, essentially identical to the national average.

In the outpatient department, many diagnoses refer to relatively vague signs, symptoms and interactions with the health care system. These "signs and symptoms" diagnoses are commonly coded on claims for diagnostic tests. It therefore was not feasible to show a list of patient diagnoses that would be comparable to DRGs on the inpatient side.

Table A.2.1.3

Inpatient Care by Care Category

Care Category	Stays	Days	Charges	Hospital Cost	Payment	APR-DRG Casemix	ALOS	Avg Payment
Adult other medical	39,373	202,450	$984,172,466	$370,407,157	$365,103,279	0.89	5.1	$9,273
Adult cardiac	14,432	65,314	$547,435,812	$193,781,768	$183,570,264	1.28	4.5	$12,720
Obstetrics	9,162	27,732	$144,706,481	$55,608,642	$57,286,178	0.42	3.0	$6,253
Adult other surgical	8,818	63,009	$464,815,248	$173,177,993	$186,399,267	2.07	7.1	$21,138
Adult ortho	8,791	40,071	$310,533,962	$119,356,276	$136,242,858	1.55	4.6	$15,498
Adult MH	8,166	68,707	$184,502,729	$76,503,409	$65,048,188	0.52	8.4	$7,966
Normal newborn	6,874	18,510	$31,442,295	$12,051,660	$18,208,771	0.12	2.7	$2,649
Pediatric med/surg	3,971	13,354	$99,284,567	$34,817,909	$47,031,424	0.81	3.4	$11,844
Adult oncology	3,607	18,226	$121,084,961	$45,239,548	$46,781,323	1.24	5.1	$12,970
Ped MH	1,809	20,936	$45,389,275	$31,536,791	$28,286,926	0.46	11.6	$15,637
Rehab	1,259	18,116	$49,284,824	$22,459,627	$17,778,873	1.27	14.4	$14,121
Sick Newborn	689	10,618	$68,577,141	$25,730,634	$30,785,698	2.21	15.4	$44,682
Total	**106,951**	**567,043**	**$3,051,229,762**	**$1,160,671,415**	**$1,182,523,049**	**0.99**	**5.3**	**$11,057**

Notes:
1) This table includes stays from the 11 general hospitals as well as RI specialty hospitals and out-of-state hospitals.
2) Casemix was measured using APR-DRGs Version 29.

A.3 Variation in Payment for Hospital Care

A.3.1 Substantial Variation Existed in Payments for Similar Care

Chart 3.1.1, Panel A: Payment per Stay, All Care Categories, Casemix Adjusted Using APR-DRGs

The numbers in Chart 3.1.1, Panel A, were calculated using the data in the following tables. A similar process was followed for other charts in the report. Rhode Island Hospital can be used as an example.

- Table A.3.1.1.1 shows payments for inpatient care by hospital. Total payments were $1.046 billion, while commercial payment to RIH was $86.8 million.
- Table A.3.1.1.2 shows total stays–97,708 in total, of which 5,143 were commercial stays at RIH.
- Table A.3.1.1.3 shows total casemix, using APR-DRGs as the casemix adjustor. For the analytical dataset of 11 general hospitals, the overall average casemix was 1.01, that is, essentially equal to the national average. For commercial stays at ROH, average casemix was 1.170. That is, these patients tended to be sicker, and need more hospital resources, than the average Rhode Island patient.
- Table A.3.1.1.4 shows average payment per stay, casemix adjusted. From tables A.3.1.1.1 and A.3.1.1.2, we can calculate average payment per stay, e.g., $86,760,445 / 5,143 = $16,870 for commercial payments at ROH. But an unadjusted average does not take into account that these patients were sicker than average. We therefore divide by the casemix value, i.e., $16,870 / 1.170 = $14,416.
- Table A.3.1.1.5 turns the data from Table A.3.1.1.4 into relative values. For the analytical dataset, average payment per stay = $1,046,642,374 / 97,708 = $10,712. The casemix-adjusted average = $10,712 / 1.01 = $10,636. Therefore the relative position commercial payment to RIH = $14,416 / $10,636 = 1.36.

Table A.3.1.1.1 Inpatient Care: Total Payments (in Millions)												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$131.18	$55.83	$18.64	$45.87	$3.68	$26.52	$27.94	$26.65	$19.63	$12.91	$8.32	**$377.17**
MCR mgd care	$59.20	$42.79	$4.19	$27.56	$1.73	$16.76	$12.70	$11.05	$14.49	$7.46	$3.08	**$201.01**
Medicaid FFS	$26.70	$5.57	$1.39	$6.77	$17.87	$7.11	$3.75	$7.54	$4.12	$0.47	$0.29	**$81.58**
MCD mgd care	$48.23	$6.99	$2.92	$10.43	$26.49	$4.92	$6.13	$6.53	$4.37	$1.38	$1.34	**$119.74**
Comm payers	$86.76	$35.35	$6.12	$32.35	$55.34	$9.71	$14.05	$6.36	$5.77	$11.27	$4.07	**$267.16**
Total	**$352.07**	**$146.53**	**$33.26**	**$122.99**	**$105.11**	**$65.02**	**$64.57**	**$58.12**	**$48.38**	**$33.49**	**$17.11**	**$1,046.64**

Table A.3.1.1.2 Inpatient Care: Total Stays												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	8,752	4,982	2,079	4,873	373	3,227	2,553	2,388	2,143	1,698	1,122	**34,190**
MCR mgd care	4,253	3,520	378	3,077	174	1,859	1,207	1,045	1,477	822	388	**18,200**
Medicaid FFS	1,905	487	133	701	1,005	363	333	433	399	57	38	**5,854**
MCD mgd care	4,706	708	643	1,515	7,290	660	842	990	778	337	237	**18,706**
Comm payers	5,143	2,331	757	2,663	5,140	935	1,054	629	542	1,145	419	**20,758**
Total	**24,759**	**12,028**	**3,990**	**12,829**	**13,982**	**7,044**	**5,989**	**5,485**	**5,339**	**4,059**	**2,204**	**97,708**

Table A.3.1.1.3 Inpatient Care: Average Casemix, All Stays, Using APR-DRGs as the Casemix Measure												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.429	1.398	1.309	1.125	0.872	0.945	1.096	1.067	1.148	1.047	0.998	**1.22**
MCR mgd care	1.395	1.279	1.232	1.085	1.048	1.037	1.191	1.139	1.169	1.089	0.966	**1.21**
Medicaid FFS	1.285	1.199	0.839	0.747	1.066	0.855	1.072	1.042	0.978	0.782	0.792	**1.08**
MCD mgd care	0.840	0.983	0.502	0.526	0.299	0.690	0.869	0.555	0.665	0.489	0.596	**0.56**
Comm payers	1.170	1.177	0.667	0.729	0.461	0.927	1.161	0.771	0.892	0.766	0.782	**0.86**
Total	**1.247**	**1.288**	**1.034**	**0.942**	**0.438**	**0.939**	**1.093**	**0.953**	**1.045**	**0.927**	**0.904**	**1.01**

Table A.3.1.1.4 Inpatient Care: Average Payment per Stay, Casemix-Adjusted, All Stays, APR-DRGs as the Casemix Measure												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$10,485	$8,019	$6,849	$8,370	$11,296	$8,691	$9,985	$10,456	$7,977	$7,261	$7,436	**$9,032**
MCR mgd care	$9,976	$9,506	$9,004	$8,254	$9,511	$8,694	$8,832	$9,281	$8,392	$8,333	$8,216	**$9,147**
Medicaid FFS	$10,908	$9,533	$12,430	$12,933	$16,677	$22,904	$10,514	$16,701	$10,541	$10,528		**$12,903**
MCD mgd care	$12,198	$10,035	$9,053	$13,087	$12,158	$10,799	$8,373	$11,892	$8,456	$8,395	$9,476	**$11,394**
Comm payers	$14,416	$12,889	$12,120	$16,666	$23,367	$11,205	$11,483	$13,099	$11,936	$12,838	$12,427	**$14,975**
Total	**$11,407**	**$9,461**	**$8,061**	**$10,180**	**$17,157**	**$9,834**	**$9,860**	**$11,124**	**$8,673**	**$8,906**	**$8,583**	**$10,636**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.1.1.5 Inpatient Care: Payment Per Stay Adjusted for Casemix Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	0.99	0.75	0.64	0.79	1.06	0.82	0.94	0.98	0.75	0.68	0.70	**0.85**
MCR mgd care	0.94	0.89	0.85	0.78	0.89	0.82	0.83	0.87	0.79	0.78	0.77	**0.86**
Medicaid FFS	1.03	0.90	1.17	1.22	1.57	2.15	0.99	1.57	0.99	0.99		**1.21**
MCD mgd care	1.15	0.94	0.85	1.23	1.14	1.02	0.79	1.12	0.80	0.79	0.89	**1.07**
Comm payers	1.36	1.21	1.14	1.57	2.20	1.05	1.08	1.23	1.12	1.21	1.17	**1.41**
Total	**1.07**	**0.89**	**0.76**	**0.96**	**1.61**	**0.92**	**0.93**	**1.05**	**0.82**	**0.84**	**0.81**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Chart 3.1.1, Panel B: Inpatient Payment Relative to Medicare, Adult Medical/Surgical Care

As a check on the robustness of the comparison in Panel A, we calculated relative payment levels using a completely different approach, one based on Medicare pricing rules. Such a method is used by many health care data analysts. We applied the approach only to the adult medical and surgical care categories, because the Medicare DRG algorithm was not designed for obstetric, pediatric or newborn patients. (See Appendix Section B.5.2 re care categories.) Table A.3.1.1.6 shows the actual payments made for adult medical/surgical care by the public and private payers. Table A.3.1.1.7 shows the count of stays. Table A.3.1.1.8 shows a comparison of payment levels relative to what Medicare would have paid. The simulation of Medicare payment levels was done using a commercially available Medicare pricing module; it took into account each hospital's wage area index, indirect medical education percentage, outlier payments, etc.

Table A.3.1.1.6 Inpatient Care: Total Payment, Adult Medical and Surgical Care Categories (in Millions)												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$127.74	$55.70	$17.26	$42.60	$3.22	$19.36	$25.97	$26.39	$18.53	$12.88	$8.25	**$357.90**
Medicare mgd care	$58.85	$42.78	$3.89	$26.51	$1.73	$14.89	$12.32	$10.49	$14.47	$7.46	$3.08	**$196.48**
Medicaid FFS	$23.47	$5.56	$1.07	$3.80	$0.75	$2.76	$3.27	$6.66	$3.19	$0.42	$0.27	**$51.22**
Medicaid mgd care	$26.50	$6.95	$0.99	$4.93	$2.06	$2.47	$5.45	$4.64	$2.76	$0.73	$0.83	**$58.32**
Comm payers	$70.39	$35.29	$3.99	$25.09	$11.80	$8.08	$13.81	$5.44	$5.15	$9.39	$3.45	**$191.88**
Total	**$306.95**	**$146.29**	**$27.20**	**$102.94**	**$19.56**	**$47.56**	**$60.82**	**$53.63**	**$44.10**	**$30.89**	**$15.87**	**$855.81**

Table A.3.1.1.7 Inpatient Care: Total Stays, Adult Medical and Surgical Care Categories												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	8,408	4,964	1,867	4,392	303	2,338	2,293	2,353	1,965	1,690	1,108	**31,681**
Medicare mgd care	4,218	3,519	358	2,996	173	1,724	1,169	1,013	1,472	822	387	**17,851**
Medicaid FFS	1,603	486	75	306	68	155	273	360	243	41	27	**3,637**
Medicaid mgd care	2,044	702	138	426	238	263	692	454	343	105	90	**5,495**
Comm payers	3,667	2,323	384	1,680	858	771	1,025	462	406	805	300	**12,681**
Total	**19,940**	**11,994**	**2,822**	**9,800**	**1,640**	**5,251**	**5,452**	**4,642**	**4,429**	**3,463**	**1,912**	**71,345**

Table A.3.1.1.8 Inpatient Care: Payment Relative to What Medicare Would Have Paid, Adult Medical and Surgical Care Categories												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Medicare mgd care	0.91	1.13	1.20	0.95	0.98	1.04	0.85	0.88	1.06	1.13	1.04	**0.99**
Medicaid FFS	0.93	1.17	1.47	1.35	0.94	1.87	1.07	1.51	1.24			**1.11**
Medicaid mgd care	1.03	1.10	0.87	1.36	0.92	1.16	0.75	1.01	0.99	1.01	0.95	**1.01**
Comm payers	1.24	1.46	1.33	1.75	1.49	1.23	1.07	1.12	1.45	1.54	1.44	**1.35**
Total	**1.02**	**1.14**	**1.07**	**1.13**	**1.23**	**1.08**	**0.95**	**1.03**	**1.07**	**1.16**	**1.08**	**1.07**

Notes:

1) For each stay, Medicare payment was estimated by running through a commercially available Medicare payment simulator. The payment calculations included hospital-specific factors such as the wage area index adjustment, direct and indirect medical education adjustments, outlier payments, etc.

2) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Chart 3.1.1, Panel C: Inpatient Pay to Cost Ratio, All Care Categories

Table A.3.1.1.9

Inpatient Care: Estimated Cost of Care, All Stays, Excluding Direct Medical Education Cost (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$130.29	$62.73	$27.82	$61.23	$4.44	$40.58	$25.38	$27.53	$22.55	$19.21	$11.21	**$432.99**
Medicare mgd care	$63.53	$43.60	$5.24	$37.71	$1.93	$20.21	$12.63	$12.36	$15.88	$9.67	$3.89	**$226.65**
Medicaid FFS	$26.64	$4.52	$1.34	$6.68	$20.73	$4.88	$3.26	$4.83	$3.23	$0.47	$0.31	**$76.89**
Medicaid mgd care	$45.98	$7.45	$3.96	$9.76	$31.95	$6.05	$6.77	$6.43	$4.74	$1.73	$1.62	**$126.46**
Comm payers	$64.53	$28.33	$6.12	$20.78	$36.11	$8.72	$10.79	$5.41	$4.41	$9.39	$3.65	**$198.25**
Total	**$330.98**	**$146.62**	**$44.48**	**$136.17**	**$95.16**	**$80.45**	**$58.84**	**$56.56**	**$50.81**	**$40.47**	**$20.69**	**$1,061.23**

Notes:

1) See Appendix Section B.3 for the methodology behind this table. Note that cost estimates shown in this table may differ from other sources, especially hospital financial statements, because of differences in how cost was defined.

Table A.3.1.1.10

Inpatient Care: Pay-to-Cost Ratios, All Stays, Excluding Direct Medical Education Cost

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	101%	89%	67%	75%	83%	65%	110%	97%	87%	67%	74%	**87%**
Medicare mgd care	93%	98%	80%	73%	90%	83%	101%	89%	91%	77%	79%	**89%**
Medicaid FFS	100%	123%	104%	101%	86%	146%	115%	156%	128%	101%		**106%**
Medicaid mgd care	105%	94%	74%	107%	83%	81%	90%	102%	92%	80%	83%	**95%**
Comm payers	134%	125%	100%	156%	153%	111%	130%	117%	131%	120%	112%	**135%**
Total	**106%**	**100%**	**75%**	**90%**	**110%**	**81%**	**110%**	**103%**	**95%**	**83%**	**83%**	**99%**

Notes:

1) Ratios in this table were calculated from Table A.3.1.1 (payment) and Table A.3.1.9 (cost). Note that pay-to-cost ratios reflect the definitions of payment and cost used for this study and may differ from pay-to-cost ratios calculated for other purposes.

2) Results are not shown for payer/hospital combinations with fewer than 50 stays.

3) Pay-to-cost ratios were calculated excluding direct medical education cost because the Medicare payment data excluded direct medical education payments.

Chart 3.1.2, Panel A: Payment per Visit, All Visits, Service Mix Adjustment Using EAPGs

The outpatient data had two idiosyncrasies that the inpatient data did not have. First, Medicare FFS data were not available at the claim level. We were able to use aggregate data by hospital from each hospital's Provider Statistical and Reimbursement (PS&R) report. Total payments from these reports are shown in Table A.3.1.2.9. Second, one commercial payer was not able to provide detailed data with CPT/HCPCS codes at the line level. For analytic approaches that require line-level procedure codes – such as EAPGs and the procedure code "basket" indices of services – claims from this plan had to be excluded. We did confirm that, in general, patterns of payment by hospital for this plan were similar to those of commercial plans in general. (We did this by calculating pay-to-

charge ratios by hospital for different plans. Although charges are an unreliable basis for comparison across hospitals, they can be useful in comparing payment levels within a specific hospital. To maintain confidentiality regarding dollar figures for the other commercial payers, hospital-specific payment data for the "commercial" line are masked (***). Because totals are shown, we also masked the "MCR managed care" line so that commercial payments by hospital could not be calculated by simple deduction.

Table A.3.1.2.1

Outpatient Care: Total Payments (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	***	***	***	***	***	***	***	***	***	***	***	**$77.91**
Medicaid FFS	$6.29	$1.71	$0.44	$1.00	$1.80	$0.99	$1.04	$1.72	$1.20	$0.26	$0.21	**$16.66**
MCD mgd care	$41.08	$9.32	$3.16	$8.33	$14.53	$6.19	$3.48	$6.95	$4.43	$2.37	$1.78	**$101.61**
Comm payers	***	***	***	***	***	***	***	***	***	***	***	**$215.08**
Total	**$124.64**	**$59.85**	**$14.89**	**$40.81**	**$51.55**	**$26.84**	**$19.80**	**$21.88**	**$17.09**	**$22.30**	**$11.62**	**$411.26**

Notes:
1) This table excludes data for one commercial payer. Certain hospital-specific data are masked to maintain confidentiality for other commercial payers.

Table A.3.1.2.2

Outpatient Care: Total Visits

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	22,494	35,479	5,741	20,336	6,602	14,452	9,893	11,693	11,147	14,668	9,445	**161,950**
Medicaid FFS	22,539	6,749	1,946	3,509	7,724	4,869	2,771	7,765	3,915	1,020	1,113	**63,920**
MCD mgd care	86,755	40,940	10,670	16,971	39,258	27,411	11,415	25,114	17,832	8,605	7,783	**292,754**
Comm payers	78,814	111,516	20,660	48,057	78,670	33,054	26,410	20,358	16,185	44,469	20,548	**498,741**
Total	**210,602**	**194,684**	**39,017**	**88,873**	**132,254**	**79,786**	**50,489**	**64,930**	**49,079**	**68,762**	**38,889**	**1,017,365**

Notes:
1) This table excludes data for one commercial payer.

Table A.3.1.2.3

Outpatient Care: EAPG Average Service Mix

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	***	***	***	***	***	***	***	***	***	***	***	**1.54**
Medicaid FFS	1.24	0.95	0.89	1.23	1.18	1.05	1.29	1.06	1.19	1.17	0.93	**1.15**
MCD mgd care	1.06	0.62	0.92	1.26	0.91	0.87	1.26	0.93	0.94	0.92	0.96	**0.95**
Comm payers	***	***	***	***	***	***	***	***	***	***	***	**1.10**
Total	**1.48**	**0.80**	**1.07**	**1.38**	**0.85**	**1.22**	**1.43**	**1.15**	**1.11**	**1.02**	**0.99**	**1.13**

Notes:
1) This table excludes data for one commercial payer.

Table A.3.1.2.4												
Outpatient Care: Payment Per Visit Adjusted for Service Mix												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	***	***	***	***	***	***	***	***	***	***	***	***
Medicaid FFS	$225	$266	$257	$231	$199	$194	$291	$208	$259	$220	$201	**$227**
MCD mgd care	$448	$367	$323	$390	$407	$259	$242	$297	$264	$298	$239	**$366**
Comm payers	***	***	***	***	***	***	***	***	***	***	***	***
Total	**$401**	**$384**	**$356**	**$333**	**$459**	**$276**	**$275**	**$292**	**$313**	**$319**	**$300**	**$357**

Notes:
1) This table excludes data for one commercial payer. Certain hospital-specific data are masked to maintain confidentiality for other commercial payers.

Table A.3.1.2.5												
Outpatient Care: Payment Per Visit Adjusted for Service Mix Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	0.96	1.13	0.84	0.94	1.19	0.69	0.66	0.68	0.84	0.67	0.56	**0.88**
Medicaid FFS	0.63	0.74	0.72	0.65	0.56	0.54	0.81	0.58	0.72	0.62	0.56	**0.64**
MCD mgd care	1.25	1.03	0.90	1.09	1.14	0.73	0.68	0.83	0.74	0.83	0.67	**1.02**
Comm payers	1.19	1.09	1.10	0.89	1.49	0.88	0.86	0.98	1.09	1.00	1.04	**1.09**
Total	**1.12**	**1.07**	**1.00**	**0.93**	**1.28**	**0.77**	**0.77**	**0.82**	**0.87**	**0.89**	**0.84**	**1.00**

Notes:
1) This table excludes data for one commercial payer. Data are masked in Tables A.3.1.2.3 and A.3.1.2.4 to maintain confidentiality of dollar figures for other commercial payers.

Chart 3.1.2, Panel B: Outpatient Payment Relative to Medicare

As an alternative measure of making payment comparisons after adjusting for differences in service mix, the outpatient claims were priced using the Medicare Outpatient Prospective System (OPPS), commonly referred to as Ambulatory Payment Classification (APC) groups, which are the most important component of OPPS. The Medicare OPPS is a completely separate way of adjusting for service mix than EAPGs. The comparison of actual average payment per visit with what Medicare would have paid therefore yielded a separate measure of relative payment levels.

As in Panel A, this set of tables excludes one commercial payer that was unable to provide detailed procedure codes at the line level. (These codes were necessary to price claims under OPPS.) To maintain confidentiality regarding dollar figures for the other commercial payers, hospital-specific payment data for the "commercial" line are masked (***). Because totals are shown, we also masked the "MCR managed care" line so that commercial payments by hospital could not be calculated by simple deduction.

Table A.3.1.2.6

Outpatient Care: Total Payment Under Medicare Principles (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$18.15	$16.34	$1.66	$8.86	$1.90	$5.96	$4.70	$4.58	$4.65	$3.76	$2.07	**$72.63**
Medicaid FFS	$8.00	$2.02	$0.53	$1.16	$1.89	$1.08	$1.09	$2.18	$1.30	$0.28	$0.26	**$19.79**
MCD mgd care	$25.48	$6.75	$2.43	$7.25	$7.94	$4.37	$3.60	$6.09	$4.42	$1.89	$2.02	**$72.23**
Comm payers	$48.01	$27.70	$5.88	$20.69	$14.90	$9.61	$8.24	$7.45	$4.42	$9.81	$4.95	**$161.65**
Total	**$99.64**	**$52.80**	**$10.50**	**$37.96**	**$26.63**	**$21.02**	**$17.62**	**$20.30**	**$14.79**	**$15.75**	**$9.30**	**$326.30**

Notes:
1) This table excludes data for one commercial payer.
2) This table shows what Medicare would have paid under OPPS pricing principles, not what was actually paid.
3) Medicare payment was estimated using commercially available software, including the applicable hospital-specific factors under the Medicare OPPS.

Table A.3.1.2.7

Outpatient Care: Simulated Medicare Payment Per Visit

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$807	$460	$288	$436	$288	$412	$475	$392	$417	$256	$219	**$448**
Medicaid FFS	$355	$299	$274	$330	$244	$223	$393	$281	$331	$277	$233	**$310**
MCD mgd care	$294	$165	$227	$427	$202	$159	$315	$243	$248	$220	$259	**$247**
Comm payers	$609	$248	$285	$431	$189	$291	$312	$366	$273	$221	$241	**$324**
Total	**$473**	**$271**	**$269**	**$427**	**$201**	**$263**	**$349**	**$313**	**$301**	**$229**	**$239**	**$321**

Notes:
1) This table excludes data for one commercial payer.
2) This table shows what Medicare would have paid under OPPS pricing principles, not what was actually paid.
3) Medicare payment was estimated using commercially available software, including the applicable hospital-specific factors under the Medicare OPPS.

Table A.3.1.2.8

Outpatient Care: Payment Per Visit Relative to Simulated Medicare Payment Per Visit

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
MCR mgd care	***	***	***	***	***	***	***	***	***	***	***	**1.07**
Medicaid FFS	0.79	0.84	0.83	0.86	0.96	0.91	0.96	0.79	0.93	0.93	0.80	**0.84**
MCD mgd care	1.61	1.38	1.30	1.15	1.83	1.42	0.97	1.14	1.00	1.25	0.88	**1.41**
Comm payers	***	***	***	***	***	***	***	***	***	***	***	**1.33**
Total	**1.25**	**1.13**	**1.42**	**1.08**	**1.94**	**1.28**	**1.12**	**1.08**	**1.16**	**1.42**	**1.25**	**1.26**

Notes:
1) This table excludes data for one commercial payer.
2) For Medicare FFS, payment to each hospital was 1.00 by definition because the Medicare OPPS was used to price Medicare FFS claims.
3) This table reflects actual payment per visit relative to what Medicare would have paid. Actual Medicaid FFS payment to RIH, for example, was $6.29 million (Table A.3.1.2.1) divided by 22,539 visits (Table A.3.1.2.2) = $279. Under the OPPS, Medicare would have paid $355. The index value in this table is thefore $279 / $355 = 0.79.

Chart 3.1.2, Panel C: Outpatient Pay to Cost

The tables for Panel C included Medicare FFS data as well as all commercial payers.

Table A.3.1.2.9

Outpatient Care: Total Payments (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$32.86	$23.82	$5.71	$12.73	$4.56	$13.56	$8.53	$10.35	$7.45	$8.59	$9.73	**$137.89**
MCR mgd care	$17.89	$17.36	$2.01	$11.12	$3.09	$6.71	$4.51	$4.24	$4.93	$4.21	$1.85	**$77.91**
Medicaid FFS	$6.29	$1.71	$0.44	$1.00	$1.80	$0.99	$1.04	$1.72	$1.20	$0.26	$0.21	**$16.66**
MCD mgd care	$41.08	$9.32	$3.16	$8.33	$14.53	$6.19	$3.48	$6.95	$4.43	$2.37	$1.78	**$101.61**
Comm payers	$73.47	$40.19	$12.12	$27.66	$41.93	$12.94	$13.87	$10.78	$7.70	$20.63	$9.41	**$270.69**
Total	**$171.59**	**$92.40**	**$23.44**	**$60.84**	**$65.91**	**$40.40**	**$31.43**	**$34.03**	**$25.71**	**$36.05**	**$22.97**	**$604.77**

Notes:
1) Medicare FFS data are from Provider Statistical and Reimbursement Reports and refer to gross reimbursements.
2) This table includes all commercial payers

Table A.3.1.2.10

Outpatient Care: Hospital Cost Excluding Direct Medical Education Cost (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$40.02	$28.36	$7.05	$17.88	$8.16	$15.64	$10.35	$12.20	$8.71	$10.24	$12.48	**$171.09**
MCR mgd care	$20.26	$15.96	$2.30	$11.82	$4.51	$7.38	$5.71	$5.83	$5.94	$4.95	$2.58	**$87.24**
Medicaid FFS	$9.32	$2.25	$0.65	$1.77	$3.60	$1.30	$1.45	$2.28	$1.60	$0.38	$0.29	**$24.88**
MCD mgd care	$34.72	$8.51	$3.44	$8.49	$15.78	$6.41	$4.86	$8.03	$5.61	$2.50	$1.97	**$100.31**
Comm payers	$56.46	$31.78	$9.01	$25.90	$35.04	$11.12	$12.24	$10.16	$5.97	$16.10	$7.05	**$220.82**
Total	**$160.77**	**$86.85**	**$22.44**	**$65.86**	**$67.09**	**$41.85**	**$34.61**	**$38.49**	**$27.82**	**$34.18**	**$24.36**	**$604.33**

Notes:
1) Medicare FFS cost estimates were calculated using by applying ratios of cost to charges to PS&R report charges

Table A.3.1.2.11 Outpatient Care: Pay-to-Cost Ratios Excluding Direct Medical Education Cost												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	82%	84%	81%	71%	56%	87%	82%	85%	86%	84%	78%	**81%**
MCR mgd care	88%	109%	87%	94%	68%	91%	79%	73%	83%	85%	72%	**89%**
Medicaid FFS	68%	76%	69%	57%	50%	76%	72%	75%	75%	68%	73%	**67%**
MCD mgd care	118%	110%	92%	98%	92%	97%	72%	87%	79%	95%	90%	**101%**
Comm payers	130%	126%	135%	107%	120%	116%	113%	106%	129%	128%	134%	**123%**
Total	**107%**	**106%**	**104%**	**92%**	**98%**	**97%**	**91%**	**88%**	**92%**	**105%**	**94%**	**100%**

Notes:
1) Pay-to-cost ratios were calculated excluding direct medical education cost because the Medicare payment data excluded direct medical education payments.

A.3.2 Commercial Plans Tended to Pay More than Medicaid, which Tended to Pay More than Medicare

Table A.3.2.1 in the report is the identical to Table A.3.1.1.5 in the previous section of this appendix.

Table A.3.2.1 Inpatient Care: Average Payment per Stay, Casemix-Adjusted, All Stays, APR-DRGs as the Casemix Measure												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	0.99	0.75	0.64	0.79	1.06	0.82	0.94	0.98	0.75	0.68	0.70	**0.85**
MCR mgd care	0.94	0.89	0.85	0.78	0.89	0.82	0.83	0.87	0.79	0.78	0.77	**0.86**
Medicaid FFS	1.03	0.90	1.17	1.22	1.57	2.15	0.99	1.57	0.99	0.99		**1.21**
MCD mgd care	1.15	0.94	0.85	1.23	1.14	1.02	0.79	1.12	0.80	0.79	0.89	**1.07**
Comm payers	1.36	1.21	1.14	1.57	2.20	1.05	1.08	1.23	1.12	1.21	1.17	**1.41**
Total	**1.07**	**0.89**	**0.76**	**0.96**	**1.61**	**0.92**	**0.93**	**1.05**	**0.82**	**0.84**	**0.81**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

A.3.3 Commercial Plans Tended to Pay More to Lifespan and Care New England than to Other Hospitals

Chart 3.3.1 in the report reflects Table A.3.1.1.5 from this appendix. Chart 3.3.2 reflects Table A.3.1.2.5 from this appendix. Chart 3.3.3 is a weighted average of the inpatient and outpatient relative payment levels, with the weights reflecting each hospital's split of inpatient and outpatient cost for commercial patients. Table A.3.3.3.1 shows the calculations.

Table A.3.3.3.1 Inpatient and Outpatient Care: Payment Levels, Including Direct Medical Education Cost (in Millions)											
	Lifespan			Care New England		CharterCARE		Unaffiliated			
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Cost of Care for Commercial Patients (Including Allocation for Medical Education), in Millions												
Inpatient	$70.74	$29.69	$6.12	$21.05	$38.36	$8.78	$11.49	$5.89	$4.41	$9.39	$3.65	**$209.57**
Outpatient	$64.34	$34.41	$9.01	$26.34	$36.90	$11.22	$13.63	$11.22	$5.97	$16.10	$7.05	**$236.18**
Total	**$135.09**	**$64.10**	**$15.13**	**$47.39**	**$75.25**	**$19.99**	**$25.11**	**$17.11**	**$10.38**	**$25.49**	**$10.70**	**$445.74**
Inpatient %	52%	46%	40%	44%	51%	44%	46%	34%	43%	37%	34%	**47%**
Outpatient %	48%	54%	60%	56%	49%	56%	54%	66%	57%	63%	66%	**53%**
Relative Payment Level for Commercial Patients (Where 1.00 = Average Payment for All Payers)												
Inpatient	1.36	1.21	1.14	1.57	2.20	1.05	1.08	1.23	1.12	1.21	1.17	**1.41**
Outpatient	1.19	1.09	1.10	0.89	1.49	0.88	0.86	0.98	1.09	1.00	1.04	**1.09**
Wt'd Average	**1.28**	**1.14**	**1.11**	**1.19**	**1.85**	**0.96**	**0.96**	**1.06**	**1.10**	**1.08**	**1.08**	**1.24**

A.3.4 Inpatient Specialties Showed Similar Patterns of Variation

Maternity Care

Maternity care was defined as care of the mother plus care of the normal newborn. Sick babies – who would typically be admitted to a neonatal intensive care unit – were defined separately. In Table A.3.4.1.2, the mother's stay and the newborn's stay are counted as separate stays. Payment data are combined because some payers and hospitals typically think of the mother and the newborn as a single maternity case. By combining payment data, we adjust for differences in how contracts may split the payment between the mother and the newborn.

In Table A.3.4.1.3, the casemix measure adjusts for vaginal versus cesarean deliveries, high-risk deliveries, complications of childbirth, etc.

Table A.3.4.1.1 Inpatient Care: Total Payments for Maternity Care (in Millions)											
	Lifespan			Care New England		CharterCARE		Unaffiliated			
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$0.04	$0.00	$0.02	$0.07	$0.45	$0.00	$0.00	$0.09	$0.02	$0.01	$0.02	**$0.72**
MCR mgd care	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Medicaid FFS	$0.04	$0.00	$0.09	$0.20	$2.66	$0.00	$0.00	$0.26	$0.12	$0.05	$0.02	**$3.43**
MCD mgd care	$0.25	$0.01	$1.18	$2.38	$23.97	$0.00	$0.01	$1.39	$1.11	$0.61	$0.46	**$31.38**
Comm payers	$0.07	$0.01	$1.08	$4.53	$30.32	$0.00	$0.00	$0.50	$0.37	$1.60	$0.48	**$38.97**
Total	**$0.40**	**$0.02**	**$2.37**	**$7.18**	**$57.40**	**$0.00**	**$0.01**	**$2.24**	**$1.63**	**$2.27**	**$0.98**	**$74.50**
Notes: 1) Results are not shown for payer/hospital combinations with fewer than 50 stays. A hospital may nevertheless have more than 50 maternity stays in total.												

Table A.3.4.1.2 Inpatient Care: Maternity Care Stays												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	3	0	4	17	70	0	0	14	5	3	3	**119**
MCR mgd care	0	0	0	0	1	0	0	0	0	0	0	**1**
Medicaid FFS	9	0	23	68	671	0	0	47	49	15	8	**890**
MCD mgd care	37	2	324	729	6,940	0	2	430	292	216	131	**9,103**
Comm payers	8	1	235	727	4,119	0	0	132	96	296	95	**5,709**
Total	**57**	**3**	**586**	**1,541**	**11,801**	**0**	**2**	**623**	**442**	**530**	**237**	**15,822**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays. A hospital may nevertheless have more than 50 maternity stays in total.
2) "Maternity" includes separate stays for the mother and the normal newborn. Sick newborns were categorized separately.

Table A.3.4.1.3 Inpatient Care: Maternity Care Average Casemix												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS					0.495							**0.483**
MCR mgd care												
Medicaid FFS				0.251	0.279							**0.273**
MCD mgd care			0.325	0.278	0.277			0.291	0.371	0.254	0.316	**0.284**
Comm payers			0.283	0.292	0.299			0.278	0.285	0.279	0.300	**0.296**
Total	**0.565**		**0.305**	**0.285**	**0.286**			**0.289**	**0.336**	**0.269**	**0.312**	**0.289**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays. A hospital may nevertheless have more than 50 maternity stays in total.

Table A.3.4.1.4 Inpatient Care: Casemix Adjusted Average Payment for Maternity Care												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS					$13,068							**$12,530**
MCR mgd care												
Medicaid FFS				$11,470	$14,178							**$14,075**
MCD mgd care			$11,236	$11,743	$12,447			$11,148	$10,248	$11,134	$11,166	**$12,148**
Comm payers			$16,319	$21,352	$24,656			$13,654	$13,685	$19,411	$16,751	**$23,034**
Total	**$12,392**		**$13,255**	**$16,330**	**$16,994**			**$12,448**	**$10,949**	**$15,940**	**$13,241**	**$16,281**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays. A hospital may nevertheless have more than 50 maternity stays in total.

Table A.3.4.1.5												
Inpatient Care: Casemix Adjusted Average Payment for Maternity Care Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS					0.80							**0.77**
MCR mgd care												
Medicaid FFS				0.70	0.87							**0.86**
MCD mgd care			0.69	0.72	0.76			0.68	0.63	0.68	0.69	**0.75**
Comm payers			1.00	1.31	1.51			0.84	0.84	1.19	1.03	**1.41**
Total	**0.76**		**0.81**	**1.00**	**1.04**			**0.76**	**0.67**	**0.98**	**0.81**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays. A hospital may nevertheless have more than 50 maternity stays in total.

Mental Health

For mental health, the analysis also included the Butler and Bradley psychiatric hospitals. The unit of utilization was also the day, not the stay.

Table A.3.4.1.6														
Inpatient Care: Total Payments for Mental Health (in Millions)														
	Lifespan				Care New England			CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Brad	Kent	W&I	Butlr	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	Total
Medicare FFS	$3.32	$0.09	$0.64	$0.04	$1.75	$0.00	$8.24	$6.16	$1.97	$0.15	$1.07	$0.02	$0.05	**$23.51**
MCR mgd care	$0.33	$0.00	$0.05	$0.00	$0.23	$0.00	$1.20	$0.72	$0.38	$0.00	$0.02	$0.00	$0.00	**$2.92**
Medicaid FFS	$1.71	$0.01	$0.22	$1.73	$2.58	$0.00	$0.47	$3.64	$0.48	$0.04	$0.80	$0.00	$0.00	**$11.68**
MCD mgd care	$3.44	$0.01	$0.59	$13.01	$2.19	$0.00	$10.66	$2.06	$0.66	$0.02	$0.48	$0.01	$0.02	**$33.15**
Comm payers	$2.62	$0.02	$0.42	$5.02	$1.68	$0.16	$9.13	$0.96	$0.20	$0.01	$0.23	$0.02	$0.05	**$20.52**
Total	**$11.43**	**$0.14**	**$1.92**	**$19.81**	**$8.43**	**$0.16**	**$29.69**	**$13.53**	**$3.68**	**$0.22**	**$2.61**	**$0.04**	**$0.12**	**$91.79**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.1.7														
Inpatient Care: Mental Health Days														
	Lifespan				Care New England			CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Brad	Kent	W&I	Butlr	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	Total
Medicare FFS	4,217	94	745	69	2,376	0	13,527	8,991	2,411	77	1,421	10	21	**33,959**
MCR mgd care	261	2	41	0	209	0	1,153	703	322	0	21	0	1	**2,713**
Medicaid FFS	1,835	11	193	1,931	2,429	0	393	2,006	433	14	642	0	2	**9,889**
MCD mgd care	2,321	4	521	9,808	2,069	0	9,051	2,325	867	22	645	5	12	**27,650**
Comm payers	1,502	12	316	3,360	1,203	1	6,074	789	175	5	177	11	14	**13,639**
Total	**10,136**	**123**	**1,816**	**15,168**	**8,286**	**1**	**30,198**	**14,814**	**4,208**	**118**	**2,906**	**26**	**50**	**87,850**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.1.8 Inpatient Care: Mental Health Payment Per Day														
	Lifespan				Care New England			CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Brad	Kent	W&I	Butlr	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	Total
Medicare FFS	$788		$863		$737		$609	$685	$818		$756			**$692**
MCR mgd care							$1,040	$1,022						**$1,076**
Medicaid FFS	$934			$898	$1,062			$1,813	$1,109		$1,241			**$1,181**
MCD mgd care	$1,483		$1,140	$1,327	$1,059		$1,178	$886	$756		$747			**$1,199**
Comm payers	$1,745		$1,336	$1,494	$1,396		$1,504	$1,211						**$1,504**
Total	**$1,127**		**$1,058**	**$1,306**	**$1,017**		**$983**	**$913**	**$875**		**$896**			**$1,045**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.1.9 Inpatient Care: Mental Health Payment Per Day Relative to Statewide Average														
	Lifespan				Care New England			CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Brad	Kent	W&I	Butlr	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	Total
Medicare FFS	0.75		0.83		0.71		0.58	0.66	0.78		0.72			**0.66**
MCR mgd care							0.99	0.98						**1.03**
Medicaid FFS	0.89			0.86	1.02			1.74	1.06		1.19			**1.13**
MCD mgd care	1.42		1.09	1.27	1.01		1.13	0.85	0.72		0.72			**1.15**
Comm payers	1.67		1.28	1.43	1.34		1.44	1.16						**1.44**
Total	**1.08**		**1.01**	**1.25**	**0.97**		**0.94**	**0.87**	**0.84**		**0.86**			**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Orthopedics

Table A.3.4.2.1 Inpatient Care: Total Payment for Orthopedic Care (in Millions)												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$17.51	$6.91	$2.66	$5.97	$0.28	$3.03	$5.21	$3.14	$1.58	$3.45	$1.27	**$51.00**
MCR mgd care	$9.20	$5.17	$0.49	$3.44	$0.01	$2.42	$2.99	$1.41	$1.09	$1.89	$0.32	**$28.42**
Medicaid FFS	$1.71	$0.50	$0.28	$0.25	$0.06	$0.22	$0.31	$0.53	$0.13	$0.08	$0.01	**$4.08**
MCD mgd care	$2.71	$0.97	$0.13	$0.57	$0.00	$0.46	$1.36	$0.63	$0.12	$0.12	$0.06	**$7.15**
Comm payers	$15.13	$6.11	$0.52	$3.79	$0.01	$1.65	$4.16	$1.13	$0.24	$3.57	$0.55	**$36.86**
Total	**$46.26**	**$19.66**	**$4.08**	**$14.01**	**$0.36**	**$7.77**	**$14.03**	**$6.84**	**$3.16**	**$9.11**	**$2.21**	**$127.50**

Table A.3.4.2.2

Inpatient Care: Total Stays for Orthopedic Care

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	955	517	224	462	2	248	271	227	137	312	130	**3,485**
MCR mgd care	574	363	46	376	2	203	188	111	88	153	26	**2,130**
Medicaid FFS	120	34	6	15	2	10	17	25	8	6	1	**244**
MCD mgd care	207	66	16	50	0	32	85	38	16	13	8	**531**
Comm payers	756	331	40	245	1	105	200	65	24	198	32	**1,997**
Total	**2,612**	**1,311**	**332**	**1,148**	**7**	**598**	**761**	**466**	**273**	**682**	**197**	**8,387**

Table A.3.4.2.3

Inpatient Care: Average Casemix for Orthopedic Care

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.638	1.539	1.580	1.489		1.489	1.813	1.315	1.491	1.458	1.295	**1.548**
MCR mgd care	1.681	1.455		1.503		1.455	1.871	1.410	1.421	1.459		**1.556**
Medicaid FFS	1.454											**1.510**
MCD mgd care	1.242	1.444		1.586			2.244					**1.491**
Comm payers	1.518	1.426		1.606		1.804	1.980	1.256		1.392		**1.551**
Total	**1.573**	**1.475**	**1.581**	**1.524**		**1.535**	**1.924**	**1.324**	**1.463**	**1.437**	**1.309**	**1.546**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.2.4

Inpatient Care: Casemix Adjusted Payment Per Stay for Orthopedic Care

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$11,191	$8,689	$7,502	$8,671		$8,209	$10,599	$10,530	$7,720	$7,581	$7,514	**$9,455**
MCR mgd care	$9,530	$9,790		$6,079		$8,187	$8,489	$8,999	$8,728	$8,474		**$8,575**
Medicaid FFS	$9,797											**$11,062**
MCD mgd care	$10,539	$10,200		$7,175			$7,129					**$9,024**
Comm payers	$13,185	$12,945		$9,633		$8,694	$10,498	$13,877		$12,946		**$11,903**
Total	**$11,258**	**$10,163**	**$7,770**	**$8,013**		**$8,469**	**$9,580**	**$11,095**	**$7,923**	**$9,296**	**$8,578**	**$9,834**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.2.5 Inpatient Care: Casemix Adjusted Payment Per Stay for Orthopedic Care Relative to Statewide Average											
	Lifespan			Care New England		CharterCARE		Unaffiliated			
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.14	0.88	0.76	0.88		0.83	1.08	1.07	0.79	0.77	0.76	0.96
MCR mgd care	0.97	1.00		0.62		0.83	0.86	0.92	0.89	0.86		**0.87**
Medicaid FFS	1.00											**1.12**
MCD mgd care	1.07	1.04		0.73			0.72					**0.92**
Comm payers	1.34	1.32		0.98		0.88	1.07	1.41		1.32		**1.21**
Total	**1.14**	**1.03**	**0.79**	**0.81**		**0.86**	**0.97**	**1.13**	**0.81**	**0.95**	**0.87**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Oncology

Table A.3.4.2.6 Inpatient Care: Total Payments for Oncology Care (in Millions)											
	Lifespan			Care New England		CharterCARE		Unaffiliated			
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$4.992	$1.983	$0.506	$1.216	$1.062	$0.811	$1.352	$0.846	$0.553	$0.268	$0.217	**$13.805**
MCR mgd care	$1.705	$1.386	$0.192	$0.857	$0.695	$0.603	$0.764	$0.316	$0.327	$0.267	$0.083	**$7.194**
Medicaid FFS	$1.903	$0.329	$0.180	$0.183	$0.200	$0.196	$0.300	$0.427	$0.131	$0.057	$0.012	**$3.919**
MCD mgd care	$1.081	$0.436	$0.032	$0.236	$0.630	$0.176	$0.161	$0.156	$0.124	$0.046	$0.029	**$3.106**
Comm payers	$3.182	$1.700	$0.186	$1.785	$4.474	$0.594	$0.693	$0.447	$0.363	$0.493	$0.133	**$14.052**
Total	**$12.863**	**$5.835**	**$1.095**	**$4.277**	**$7.061**	**$2.380**	**$3.270**	**$2.192**	**$1.499**	**$1.130**	**$0.474**	**$42.076**

Table A.3.4.2.7 Inpatient Care: Total Stays for Oncology Care											
	Lifespan			Care New England		CharterCARE		Unaffiliated			
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	326	188	60	117	93	86	81	58	48	41	29	**1,127**
MCR mgd care	141	127	17	89	66	68	64	24	33	27	14	**670**
Medicaid FFS	105	27	3	16	16	7	11	23	13	4	1	**226**
MCD mgd care	101	30	8	18	73	18	19	17	19	11	8	**322**
Comm payers	212	118	21	116	337	56	50	37	33	47	16	**1,043**
Total	**885**	**490**	**109**	**356**	**585**	**235**	**225**	**159**	**146**	**130**	**68**	**3,388**

Table A.3.4.2.8 Inpatient Care: Oncology Care Average Casemix												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.588	1.421	1.374	1.285	1.155	1.223	1.630	1.649				**1.413**
MCR mgd care	1.562	1.396		1.159	1.159	1.135	1.534					**1.350**
Medicaid FFS	1.642											**1.508**
MCD mgd care	1.229				0.860							**1.054**
Comm payers	1.187	1.278		0.998	0.813	1.034	1.012					**1.002**
Total	**1.453**	**1.359**	**1.315**	**1.130**	**0.920**	**1.142**	**1.489**	**1.385**	**1.129**	**1.045**	**0.921**	**1.246**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.2.9 Inpatient Care: Casemix Adjusted Payment Per Stay for Oncology Care												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$9,645	$7,423	$6,142	$8,088	$9,886	$7,718	$10,235	$8,842				**$8,666**
MCR mgd care	$7,740	$7,814		$8,309	$9,089	$7,806	$7,784					**$7,955**
Medicaid FFS	$11,037											**$11,496**
MCD mgd care	$8,712				$10,036							**$9,156**
Comm payers	$12,648	$11,279		$15,419	$16,327	$10,250	$13,698					**$13,446**
Total	**$10,003**	**$8,761**	**$7,641**	**$10,637**	**$13,119**	**$8,866**	**$9,760**	**$9,957**	**$9,088**	**$8,318**	**$7,570**	**$9,964**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.3.4.2.10 Inpatient Care: Casemix Adjusted Payment Per Stay for Oncology Care Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	0.97	0.74	0.62	0.81	0.99	0.77	1.03	0.89				**0.87**
MCR mgd care	0.78	0.78		0.83	0.91	0.78	0.78					**0.80**
Medicaid FFS	1.11											**1.15**
MCD mgd care	0.87				1.01							**0.92**
Comm payers	1.27	1.13		1.55	1.64	1.03	1.37					**1.35**
Total	**1.00**	**0.88**	**0.77**	**1.07**	**1.32**	**0.89**	**0.98**	**1.00**	**0.91**	**0.83**	**0.76**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

A.4 Factors Affecting Payment Variation

A.4.1 Hospitals Varied Considerably in Costliness

For this study, the hospital's cost of providing care was as defined in Appendix Section B.4. This section compares cost among hospitals for patients insured by the various payers. Comparisons have been adjusted for inpatient casemix and outpatient service mix as appropriate. No payment data are shown in this section. Relative cost figures by hospital in this section reflect all patients, while relative cost figures in Section A.4..2 reflect commercial patients only.

Chart 4.1.1: Cost Comparison, Excluding Medical Education

Table A.4.1.1.1

Inpatient Care: Average Cost per Stay, Casemix Adjusted, Excluding Direct Medical Education Cost

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$10,414	$9,009	$10,224	$11,172	$13,661	$13,299	$9,072	$10,804	$9,164	$10,805	$10,017	**$10,369**
MCR mgd care	$10,704	$9,686	$11,243	$11,297	$10,600	$10,488	$8,784	$10,378	$9,199	$10,794	$10,384	**$10,314**
Medicaid FFS	$10,887	$7,730	$12,008	$12,760	$19,340	$15,731	$9,143	$10,696	$8,265	$10,455		**$12,162**
MCD mgd care	$11,630	$10,696	$12,278	$12,250	$14,665	$13,276	$9,252	$11,707	$9,172	$10,515	$11,470	**$12,033**
Comm payers	$10,723	$10,330	$12,133	$10,703	$15,246	$10,062	$8,817	$11,157	$9,125	$10,699	$11,139	**$11,113**
Total	**$10,723**	**$9,467**	**$10,782**	**$11,271**	**$15,533**	**$12,168**	**$8,985**	**$10,826**	**$9,110**	**$10,761**	**$10,379**	**$10,785**

Notes:
1) This table was calculating by dividing total cost (Table A.3.1.1.9) by total stays (Table A.3.1.1.2) by average casemix (Table A.3.1.1.3).
2) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.4.1.1.2

Inpatient Care: Average Cost per Stay, Casemix Adjusted, Excluding Direct Medical Education Cost, Relative to Statewide Average

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	0.97	0.84	0.95	1.04	1.27	1.23	0.84	1.00	0.85	1.00	0.93	**0.96**
MCR mgd care	0.99	0.90	1.04	1.05	0.98	0.97	0.81	0.96	0.85	1.00	0.96	**0.96**
Medicaid FFS	1.01	0.72	1.11	1.18	1.79	1.46	0.85	0.99	0.77	0.97		**1.13**
MCD mgd care	1.08	0.99	1.14	1.14	1.36	1.23	0.86	1.09	0.85	0.98	1.06	**1.12**
Comm payers	0.99	0.96	1.13	0.99	1.41	0.93	0.82	1.03	0.85	0.99	1.03	**1.03**
Total	**0.99**	**0.88**	**1.00**	**1.05**	**1.44**	**1.13**	**0.83**	**1.00**	**0.84**	**1.00**	**0.96**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.4.1.1.3												
Outpatient Care: Hospital Cost Excluding Direct Medical Education Cost (in Millions)												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$20.26	$15.96	$2.30	$11.82	$4.51	$7.38	$5.71	$5.83	$5.94	$4.95	$2.58	**$87.24**
Medicaid FFS	$9.32	$2.25	$0.65	$1.77	$3.60	$1.30	$1.45	$2.28	$1.60	$0.38	$0.29	**$24.88**
MCD mgd care	$34.72	$8.51	$3.44	$8.49	$15.78	$6.41	$4.86	$8.03	$5.61	$2.50	$1.97	**$100.31**
Comm payers	$47.41	$26.10	$7.42	$20.70	$28.63	$11.12	$9.48	$8.67	$5.06	$11.43	$5.72	**$181.74**
Total	**$111.70**	**$52.81**	**$13.81**	**$42.78**	**$52.51**	**$26.21**	**$21.50**	**$24.81**	**$18.21**	**$19.26**	**$10.55**	**$394.16**

Notes:
1) This table excludes data for one commercial payer.

Table A.4.1.1.4												
Outpatient Care: Average Cost per Visit, Service Mix Adjusted Excluding Direct Medical Education Cost												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$389	$371	$346	$358	$620	$273	$300	$332	$361	$282	$278	**$350**
Medicaid FFS	$333	$350	$373	$409	$396	$255	$407	$276	$344	$322	$277	**$339**
MCD mgd care	$378	$335	$352	$398	$442	$268	$339	$344	$334	$314	$265	**$361**
Comm payers	$340	$322	$313	$325	$475	$270	$270	$337	$301	$265	$273	**$330**
Total	**$359**	**$339**	**$330**	**$350**	**$468**	**$270**	**$299**	**$331**	**$333**	**$276**	**$273**	**$342**

Notes
1) This table was created by dividing total cost (Table A.4.1.1.3) by total visits (Table A.3.1.2.2) by average service mix (Table A.3.1.2.3).
2) This table excludes one commercial payer.

Table A.4.1.1.5												
Outpatient Care: Average Cost per Visit, Service Mix Adjusted Excluding Direct Medical Education Cost, Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	1.13	1.08	1.01	1.04	1.81	0.80	0.88	0.97	1.05	0.82	0.81	**1.02**
Medicaid FFS	0.97	1.02	1.09	1.19	1.16	0.74	1.19	0.81	1.00	0.94	0.81	**0.99**
MCD mgd care	1.11	0.98	1.03	1.16	1.29	0.78	0.99	1.00	0.97	0.92	0.77	**1.05**
Comm payers	0.99	0.94	0.91	0.95	1.39	0.79	0.79	0.98	0.88	0.77	0.80	**0.96**
Total	**1.05**	**0.99**	**0.96**	**1.02**	**1.37**	**0.79**	**0.87**	**0.97**	**0.97**	**0.81**	**0.80**	**1.00**

Notes:
1) This table excludes data for one commercial payer.

Table A.4.1.1.6

Inpatient and Outpatient Care: Relative Cost Levels, Casemix and Service Mix Adjusted

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Excluding Direct Medical Education Cost												
Inpatient cost	0.99	0.88	1.00	1.05	1.44	1.13	0.83	1.00	0.84	1.00	0.96	**1.00**
Outpatient cost	1.05	0.99	0.96	1.02	1.37	0.79	0.87	0.97	0.97	0.81	0.80	**1.00**
Weighted average	**1.01**	**0.92**	**0.98**	**1.04**	**1.41**	**1.00**	**0.85**	**0.99**	**0.89**	**0.91**	**0.88**	**1.00**
Calculation of Weights (for All Payers from Medicare Cost Report)												
Percent inpatient	63%	60%	58%	64%	59%	62%	60%	55%	61%	52%	48%	**60%**
Percent outpatient	37%	40%	42%	36%	41%	38%	40%	45%	39%	48%	52%	**40%**

Chart 4.1.2: Cost Comparison, Including Medical Education

Table A.4.1.2.1

Inpatient Care: Hospital Cost Including Direct Medical Education Cost (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$142.82	$65.73	$27.82	$62.04	$4.72	$40.82	$27.03	$29.94	$22.55	$19.21	$11.21	**$453.90**
MCR mgd care	$69.64	$45.69	$5.24	$38.21	$2.05	$20.33	$13.45	$13.44	$15.88	$9.67	$3.89	**$237.48**
Medicaid FFS	$29.21	$4.73	$1.34	$6.77	$22.02	$4.91	$3.48	$5.25	$3.23	$0.47	$0.31	**$81.71**
MCD mgd care	$50.41	$7.80	$3.96	$9.89	$33.94	$6.09	$7.21	$6.99	$4.74	$1.73	$1.62	**$134.40**
Comm payers	$70.74	$29.69	$6.12	$21.05	$38.36	$8.78	$11.49	$5.89	$4.41	$9.39	$3.65	**$209.57**
Total	**$362.82**	**$153.64**	**$44.48**	**$137.96**	**$101.09**	**$80.92**	**$62.65**	**$61.51**	**$50.81**	**$40.47**	**$20.69**	**$1,117.05**

Table A.4.1.2.2

Inpatient Care: Average Cost per Stay, Casemix Adjusted, Including Direct Medical Education Cost

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	$11,415	$9,440	$10,224	$11,319	$14,512	$13,378	$9,660	$11,748	$9,164	$10,805	$10,017	**$10,870**
MCR mgd care	$11,734	$10,150	$11,243	$11,445	$11,261	$10,550	$9,353	$11,285	$9,199	$10,794	$10,384	**$10,807**
Medicaid FFS	$11,934	$8,100	$12,008	$12,928	$20,546	$15,824	$9,736	$11,631	$8,265	$10,455		**$12,924**
MCD mgd care	$12,749	$11,208	$12,278	$12,411	$15,579	$13,354	$9,852	$12,730	$9,172	$10,515	$11,470	**$12,789**
Comm payers	$11,754	$10,825	$12,133	$10,844	$16,196	$10,121	$9,389	$12,132	$9,125	$10,699	$11,139	**$11,747**
Total	**$11,755**	**$9,921**	**$10,782**	**$11,419**	**$16,501**	**$12,240**	**$9,568**	**$11,771**	**$9,110**	**$10,761**	**$10,379**	**$11,352**

Notes:
1) This table was calculating by dividing total cost (Table A.4.1.2.1) by total stays (Table A.3.1.1.2) by average casemix (Table A.3.1.1.3).
2) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.4.1.2.3

Inpatient Care: Average Cost per Stay, Casemix Adjusted, Including Direct Medical Education Cost, Relative to Statewide Average

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Medicare FFS	1.01	0.83	0.90	1.00	1.28	1.18	0.85	1.03	0.81	0.95	0.88	**0.96**
MCR mgd care	1.03	0.89	0.99	1.01	0.99	0.93	0.82	0.99	0.81	0.95	0.91	**0.95**
Medicaid FFS	1.05	0.71	1.06	1.14	1.81	1.39	0.86	1.02	0.73	0.92		**1.14**
MCD mgd care	1.12	0.99	1.08	1.09	1.37	1.18	0.87	1.12	0.81	0.93	1.01	**1.13**
Comm payers	1.04	0.95	1.07	0.96	1.43	0.89	0.83	1.07	0.80	0.94	0.98	**1.03**
Total	**1.04**	**0.87**	**0.95**	**1.01**	**1.45**	**1.08**	**0.84**	**1.04**	**0.80**	**0.95**	**0.91**	**1.00**

Notes:
1) Results are not shown for payer/hospital combinations with fewer than 50 stays.

Table A.4.1.2.4

Outpatient Care: Hospital Cost Including Direct Medical Education Cost (in Millions)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$23.09	$17.28	$2.30	$12.02	$4.75	$7.44	$6.36	$6.44	$5.94	$4.95	$2.58	**$93.15**
Medicaid FFS	$10.62	$2.43	$0.65	$1.80	$3.79	$1.31	$1.62	$2.51	$1.60	$0.38	$0.29	**$27.00**
MCD mgd care	$39.56	$9.21	$3.44	$8.63	$16.61	$6.46	$5.41	$8.87	$5.61	$2.50	$1.97	**$108.28**
Comm payers	$54.03	$28.26	$7.42	$21.06	$30.14	$11.22	$10.55	$9.57	$5.06	$11.43	$5.72	**$194.46**
Total	**$127.29**	**$57.19**	**$13.81**	**$43.51**	**$55.29**	**$26.44**	**$23.94**	**$27.39**	**$18.21**	**$19.26**	**$10.55**	**$422.89**

Notes:
1) This table excludes data for one commercial payer.

Table A.4.1.2.5

Outpatient Care: Average Cost Per Visit, Service Mix Adjusted, Including Direct Medical Education Cost

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	$443	$402	$346	$364	$653	$275	$334	$367	$361	$282	$278	**$374**
Medicaid FFS	$379	$379	$373	$416	$417	$257	$453	$305	$344	$322	$277	**$368**
MCD mgd care	$431	$363	$352	$404	$465	$271	$377	$380	$334	$314	$265	**$390**
Comm payers	$388	$348	$313	$331	$501	$272	$301	$372	$301	$265	$273	**$353**
Total	**$409**	**$367**	**$330**	**$356**	**$493**	**$272**	**$332**	**$366**	**$333**	**$276**	**$273**	**$367**

Notes
1) This table was created by dividing total cost (Table A.4.1.2.4) by total visits (Table A.3.1.2.2) by average service mix (Table A.3.1.2.3).
2) This table excludes one commercial payer.

Table A.4.1.2.6												
Outpatient Care: Average Cost Per Visit, Service Mix Adjusted, Including Direct Medical Education Cost, Relative to Statewide Average												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
MCR mgd care	1.20	1.09	0.94	0.99	1.78	0.75	0.91	1.00	0.98	0.77	0.76	**1.02**
Medicaid FFS	1.03	1.03	1.02	1.13	1.13	0.70	1.23	0.83	0.94	0.88	0.75	**1.00**
MCD mgd care	1.17	0.99	0.96	1.10	1.27	0.74	1.03	1.03	0.91	0.86	0.72	**1.06**
Comm payers	1.06	0.95	0.85	0.90	1.36	0.74	0.82	1.01	0.82	0.72	0.74	**0.96**
Total	**1.11**	**1.00**	**0.90**	**0.97**	**1.34**	**0.74**	**0.90**	**1.00**	**0.91**	**0.75**	**0.74**	**1.00**
Notes: 1) This table excludes data for one commercial payer.												

Table A.4.1.2.7												
Inpatient and Outpatient Care: Relative Cost Levels, Casemix and Service Mix Adjusted												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Including Direct Medical Education Cost												
Inpatient cost	1.04	0.87	0.95	1.01	1.45	1.08	0.84	1.04	0.80	0.95	0.91	**1.00**
Outpatient cost	1.11	1.00	0.90	0.97	1.34	0.74	0.90	1.00	0.91	0.75	0.74	**1.00**
Weighted average	**1.06**	**0.92**	**0.93**	**0.99**	**1.41**	**0.95**	**0.87**	**1.02**	**0.84**	**0.85**	**0.83**	**1.00**
Calculation of Weights (for All Payers from Medicare Cost Report)												
Percent inpatient	63%	60%	58%	64%	59%	62%	60%	55%	61%	52%	48%	**60%**
Percent outpatient	37%	40%	42%	36%	41%	38%	40%	45%	39%	48%	52%	**40%**

A.4.2 Higher Cost Hospitals Tended to Be Paid More, Especially Care New England and Lifespan

This section compares relative payment payments with relative cost levels for commercially insured patients. (Note that relative cost levels in Section A.4.1 were for all patients combined.) For a given hospital, the relative cost is relative to a statewide average, and similarly for relative payment. The difference between relative cost and relative payment is not a profit margin.

Table A.4.2.1

Inpatient Care: Commercial Payment Compared with Cost (Including the Direct Cost of Medical Education)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Total stays	5,143	2,331	757	2,663	5,140	935	1,054	629	542	1,145	419	20,758
Total cost (in millions)	$70.74	$29.69	$6.12	$21.05	$38.36	$8.78	$11.49	$5.89	$4.41	$9.39	$3.65	**$209.57**
Avg cost, casemix adjustd	$11,754	$10,825	$12,133	$10,844	$16,196	$10,121	$9,389	$12,132	$9,125	$10,699	$11,139	**$11,747**
Relative cost	1.04	0.95	1.07	0.96	1.43	0.89	0.83	1.07	0.80	0.94	0.98	**1.03**
Total payment (in millions)	$86.76	$35.35	$6.12	$32.35	$55.34	$9.71	$14.05	$6.36	$5.77	$11.27	$4.07	**$267.16**
Avg paymt, casemix adjustd	$14,416	$12,889	$12,120	$16,666	$23,367	$11,205	$11,483	$13,099	$11,936	$12,838	$12,427	**$14,975**
Relative paymt	1.36	1.21	1.14	1.57	2.20	1.05	1.08	1.23	1.12	1.21	1.17	**1.41**

Notes:

1) Relative cost is calculated as the total cost for commercial patients divided by commercial stays divided by average commercial casemix (Table A.3.1.1.3) to yield casemix-adjusted average cost per stay. For example, for Rhode Island Hospital $70,740,000 / 5,143 / 1.170 = $11,754. This figure is converted to a relative cost index by dividing the average cost per stay for all payers, i.e., $11,754 / $11,352 (from Table A.4.1.2.2) = 1.04.

2) Relative payment level is calculated in similar fashion. It is also shown in Table A.3.1.1.5.

3) Both cost and payment and relative to statewide averages. It is not possible to calculate a profit margin from the difference between the two numbers.

Table A.4.2.2

Outpatient Care: Commercial Payment Compared with Cost (Including the Direct Cost of Medical Education)

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Total visits	78,814	111,516	20,660	48,057	78,670	33,054	26,410	20,358	16,185	44,469	20,548	**498,741**
Total cost (in millions)	$54.03	$28.26	$7.42	$21.06	$30.14	$11.22	$10.55	$9.57	$5.06	$11.43	$5.72	**$194.46**
Avg cost, service mix adjustd	$388	$348	$313	$331	$501	$272	$301	$372	$301	$265	$273	**$353**
Relative cost	1.06	0.95	0.85	0.90	1.36	0.74	0.82	1.01	0.82	0.72	0.74	**0.96**
Total payment (in millions)	***	***	***	***	***	***	***	***	***	***	***	**$215.08**
Avg paymt, service mix adjustd	***	***	***	***	***	***	***	***	***	***	***	***
Relative paymt	1.19	1.09	1.10	0.89	1.49	0.88	0.86	0.98	1.09	1.00	1.04	**1.09**

Notes:

1) See Table A.4.2.1.1 for an explanation of the calculations.

2) This table excludes data from one commercial payer. Certain data are masked to maintain confidentiality of dollar figures for other commercial payers.

Table A.4.2.3 Inpatient and Outpatient Care: Commercial Payment Compared with Cost (Including the Direct Cost of Medical Education)												
	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Total paymt (in millions)	$146.14	$66.81	$15.40	$52.71	$87.47	$22.65	$24.82	$15.34	$12.31	$26.72	$11.86	**$482.23**
Total cost (in millions)	$124.77	$57.95	$13.55	$42.11	$68.50	$19.99	$22.04	$15.46	$9.47	$20.82	$9.37	**$404.02**
Relative payment	1.28	1.14	1.11	1.19	1.85	0.96	0.96	1.06	1.10	1.08	1.08	**1.24**
Relative cost	1.05	0.95	0.94	0.92	1.40	0.81	0.82	1.03	0.81	0.80	0.82	**1.00**
Percent IP cost	52%	46%	40%	44%	51%	44%	46%	34%	43%	37%	34%	**47%**
Percent OP cost	48%	54%	60%	56%	49%	56%	54%	66%	57%	63%	66%	**53%**

Notes:

1) Relative cost and relative payment are weighted by their respective percent of cost for each patient type. See Table A.4.2.1.1 for an explanation of the other calculations.

2) Outpatient data in this table excludes data from one commercial payer.

A.4.3 The Limited Evidence on Quality Did Not Show a Direct Link with Payment

Table A.4.3.1

Little Consistency Observed Between Commercial Payment Levels by Hospital and Quality Measures

	St J	Rog Wms	Lndmrk	Nwprt	Wstrly	So Co	Mirm	Mem	RIH	Kent	W&I
Payment Level (casemix-adjusted using APR-DRGs)	1.05	1.08	1.12	1.14	1.17	1.21	1.21	1.23	1.36	1.57	2.20
Patient Satisfaction											
Percent highly satisfied	57%	65%	52%	73%	69%	82%	76%	63%	61%	64%	79%
Would recommend hospital	59%	70%	54%	78%	70%	85%	83%	68%	66%	66%	87%
Process of Care											
Recommended care	95.0%	95.2%	97.2%	NA	94.8%	98.8%	98.2%	97.2%	98.2%	94.8%	NA
Medicare Measures (PNA, HF, AMI)											
Average hospital 30-day readmission rates	23.6%	20.8%	21.6%	20.9%	19.0%	21.8%	22.7%	25.4%	23.6%	22.9%	NA
Average hospital 30-day mortality rates	13.5%	12.2%	13.8%	12.2%	12.2%	15.2%	11.8%	13.1%	11.7%	11.5%	NA
Patient Safety (per 1,000 cases)											
Post-op PE/DVT	5.7	11.4	13.3	10.7	4.9	2.3	8.6	13.6	11.3	6.2	6.5
Failure to rescue	65.8	85.6	70.0	209.3	*0.0	*0.0	103.5	72.4	207.5	138.4	*0.0
Pressure ulcer	47.8	32.8	35.1	16.4	28.4	10.9	19.9	13.4	15.8	26.4	*0.0
Selected infections	0.9	3.1	0.7	*0.0	1.3	0.5	1.3	4.9	2.3	2.7	*0.0
Post-op sepsis	7.2	4.3	63.4	27.0	17.9	8.0	5.0	*0.0	8.3	12.4	23.7

Notes:

1) Data posted at www.WhyNotTheBest.org were compiled from various sources, including CMS as well as Commonwealth Fund tabulations of the Agency for Healthcare Research and Quality patient safety measures.

2) NA = not available (i.e., not shown in the source material.) PNA/HF/AMI = pneumonia/heart failure/acute myocardial infarction (heart attack). PE/DVT = pulmonary embolism/deep vein thrombosis

3) Results with an asterisk reflect indicate that zero patient safety problems were reported. This may reflect actual performance or a data issue in the source data.

A.4.4 The Evidence Did Not Appear to Support a Consistent "Cost Shift" Hypothesis from Public to Commercial Payers

Table A.4.4.1

Inpatient and Outpatient Care: Cost Shift

	Lifespan			Care New England		CharterCARE		Unaffiliated				
	RIH	Mirm	Nwprt	Kent	W&I	St. J	Rog Will	Mem	Lndmrk	So Co	Wstrly	RI
Public Programs (FFS + Mgd Care)												
Total payments (mlns)	$363.43	$163.39	$38.46	$123.81	$73.75	$80.96	$68.08	$75.02	$60.61	$37.65	$26.60	**$1,111.76**
Total cost (mlns)	$410.94	$183.59	$51.79	$157.54	$96.48	$103.15	$76.08	$86.90	$68.26	$49.16	$34.35	**$1,318.25**
Pay to cost	88%	89%	74%	79%	76%	78%	89%	86%	89%	77%	77%	**84%**
Commercial Payers												
Total payments (mlns)	$160.23	$75.54	$18.24	$60.02	$97.27	$22.65	$27.92	$17.13	$13.47	$31.89	$13.48	**$537.84**
Total cost (mlns)	$135.09	$64.10	$15.13	$47.39	$75.25	$19.99	$25.11	$17.11	$10.38	$25.49	$10.70	**$445.74**
Pay to cost	119%	118%	121%	127%	129%	113%	111%	100%	130%	125%	126%	**121%**

Notes:
1) Cost includes medical education.

A.4.5 The Concentrated Marketplace for Hospital Care Probably Affected Variation in Payment

The Herfindahl-Hirshman index is a common measurement of market concentration. First, a hospital's market share is calculated. Then the share is squared. The H-H index equals the sum of the squares, multiplied by 10,000. This structure means that a market with four equally sized hospitals would be less concentrated than a market with one hospital that had a 70 percent share and three hospitals that each had a 10 percent share.

The H-H indexes were calculated using the entire dataset, i.e., 11 general hospitals plus Butler, Bradley, the Rehabilitation Hospital and out-of-state hospitals.

Table A.4.5.1

Herfindahl-Hirschman Index for Rhode Island Hospital Systems

	All Inpatient Stays			All Inpatient Days			MH Stays			OB Stays		
Chain/Hospital	Stays	Share	Share squared	Days	Share	Share squared	Stays	Share	Share squared	Stays	Share	Share squared
Lifespan	41,220	0.39	0.1485	218,123	0.38	0.1480	2,607	0.26	0.0685	437	0.05	0.0023
Care New England	31,047	0.29	0.0843	151,467	0.27	0.0714	4,544	0.46	0.2081	7,456	0.81	0.6623
CharterCARE	13,033	0.12	0.0148	78,234	0.14	0.0190	2,102	0.21	0.0445	2	0.00	0.0000
Memorial	5,485	0.05	0.0026	25,220	0.04	0.0020	33	0.00	0.0000	357	0.04	0.0015
Landmark	5,339	0.05	0.0025	29,066	0.05	0.0026	450	0.05	0.0020	342	0.04	0.0014
South County	4,059	0.04	0.0014	15,909	0.03	0.0008	16	0.00	0.0000	290	0.03	0.0010
Westerly	2,204	0.02	0.0004	9,183	0.02	0.0003	25	0.00	0.0000	159	0.02	0.0003
Rehab	886	0.01	0.0001	15,168	0.03	0.0007	0	0.00	0.0000	0	0.00	0.0000
Out of state	3,678	0.03	0.0012	24,673	0.04	0.0019	183	0.00	0.0003	119	0.01	0.0002
Total	**106,951**	**1.00**	**0.2559**	**567,043**	**1.00**	**0.2466**	**9,960**	**1.00**	**0.3236**	**9,162**	**1.00**	**0.6689**
H-H index			**2,559**			**2,466**			**3,236**			**6,689**
	Pediatric care			Outpatient visits			Oncology stays			Orthopedic stays		
Chain	Stays	Share	Share squared	Visits	Share	Share squared	Stays	Share	Share squared	Stays	Share	Share squared
Lifespan	3,487	0.88	0.7711	489,393	0.40	0.1639	1,484	0.41	0.1693	4,255	0.48	0.2343
Care New England	24	0.00	0.0000	244,767	0.20	0.0410	941	0.09	0.0089	1,155	0.13	0.0159
CharterCARE	4	0.00	0.0000	137,677	0.11	0.0130	460	0.05	0.0021	1,359	0.15	0.0220
Memorial	83	0.00	0.0000	68,322	0.06	0.0032	159	0.02	0.0003	466	0.05	0.0026
Landmark	3	0.00	0.0000	51,942	0.04	0.0018	146	0.01	0.0002	273	0.03	0.0009
South County	36	0.00	0.0000	85,017	0.07	0.0049	130	0.01	0.0002	682	0.07	0.0055
Westerly	19	0.00	0.0000	43,404	0.04	0.0013	68	0.01	0.0000	197	0.02	0.0005
Rehab	0	0.00	0.0000	5,974	0.00	0.0000	0	0.00	0.0000	0	0.00	0.0000
Out of state	315	0.08	0.0063	82,426	0.07	0.0046	219	0.06	0.0037	404	0.05	.0021
Total	**3,971**	**1.00**	**0.7711**	**1,208,922**	**1.00**	**0.2338**	**3,607**	**1.00**	**0.1815**	**8,791**	**0.98**	**0.2836**
H-H index			**7,711**			**2,338**			**1,815**			**2,836**

Appendix B: Methodology

B.1 Analytical Dataset

B.1.1 Data Sources

The analysis combined claims data from the following sources:

- **Blue Cross Blue Shield of Rhode Island (BCBSRI).** Lines of business included commercial large-group, commercial small-group, administrative services only (ASO), commercial individual, Medicare managed care, Medicaid managed care. BCBSRI exited the Medicaid managed care business in December 2010.

- **UnitedHealthcare (UHC).** Lines of business included commercial large-group, commercial small-group, ASO Medicare managed care, and Medicaid managed care.

- **Tufts Health Plan.** Lines of business included commercial large-group, commercial small-group, and ASO.

- **Neighborhood Health Plan.** NHP's sole line of business is Medicaid managed care.

- **Medicare fee-for-service.** For inpatient care, claims came from the State of Rhode Island's Hospital Discharge Dataset (HDD). Because the dataset does not include payments, we priced each claim using a commercially available Medicare payment simulator. The payment calculations included hospital-specific factors such as the wage area index adjustment, indirect medical education adjustments, and outlier payments. The calculations excluded Medicare payment for direct medical education, organ anquisition costs and certain other payments. For outpatient care, claim-level data were not available, so we used aggregate figures from Provider Statistical and Reimbursement System (PS&R) reports provided by hospitals.

- **Medicaid fee-for-service.** Claims were provided by the Rhode Island Executive Office of Health and Human Services.

The criteria used for selecting claims were as follows:

- Hospital inpatient claims: header level only

- Hospital outpatient claims: both header level and line level

- Last date of service between January 1, 2010, and December 31, 2010

- Paid claims only

- For inpatient stays, complete claims only (i.e., interim claims should be chained together so that a single claim represents a single stay)

- For claims that were adjusted, the final adjusted claim only

- Both Rhode Island and out-of-state hospitals for Rhode Island residents (except that the Medicare claimset extracted from the RI hospital discharge dataset excluded Medicare stays for RI residents that were at out-of-state hospitals)
- Exclude claims where the payer is secondary to another payer

Each payer was given the same set of criteria for data extraction. There were several iterations of data extraction and analysis before the dataset was finalized. For each payer, the final paid date depended on when the data were extracted, but for each payer the final paid date was at least 14 months after December 31, 2010.

B.1.2 Data Validity and Comparability: Inpatient

The data were run through many validation steps. Claims data from all payers had to be in the same format, fields had to be defined in the same way, and data values had to be verified. For the inpatient data, Table B.1.2.1 shows a reconciliation of record counts, starting from the 110,789 claims received and ending with the analytical dataset of 106,951 inpatient stays.

The reasons for excluding claims from the analytical dataset are shown below. The number of claims under each exclusion reason depends on the order in which the validation steps were taken.

Table B.1.2.1

Inpatient Stays Excluded from Analytical Dataset

Reason to Exclude	Stays
Initial Dataset	**110,789**
Exclude the following:	
1. Other insurance	1,602
2. Claim reconciliation	951
3. Duplicate claim	915
4. Not a complete stay	228
5. Not an inpatient claim	62
6. Invalid DRG/ungroupable	55
7. Invalid/missing diagnosis code(s)	20
8. 2009 dates of service	5
Stays in analytical dataset	**106,951**

Other Insurance

1,602 claims were excluded because the dataset we received included claims with other insurance.

Claim Reconciliation

952 claims were excluded because the billed charge was zero, the allowed amount was zero, or the allowed amount minus patient cost-sharing (e.g., coinsurance and deductible), did not equal the paid the amount.

Duplicate Claim

915 claims were excluded because they appeared to be duplicates of other records in the dataset. Duplicates were defined as showing identical values for patient, hospital, admission date, discharge date, discharge status, and bill type. Billed charges were also reviewed as part of process. The existence of duplicate records does not necessarily imply duplicate payments to hospitals, but it does mean that the duplicated records had to be excluded from the analytical dataset in order to prevent double-counting.

Not a Complete Stay

In the discharge status field, the hospital indicates whether the patient went home, died, left against medical advice, was transferred to another hospital, was transferred to another setting (such as a nursing home), or remains in the same hospital.

228 claims were excluded due to various issues with regard to complete stays. Most commonly, the discharge status was 30 (still a patient) but there was no subsequent claim.

Not an Inpatient Stay

The bill type is submitted by the hospital to the payer. A value of 111, for example, is a single admit-through-discharge claim at a hospital for inpatient care. All received values of bill type were examined. 62 claims were excluded because the bill type value indicated that they were not inpatient stays.

Table B.1.3.1 Outpatient Claims Excluded from Analytical Dataset	
Reason to Exclude	Claims
Initial Dataset	**1,388,752**
Exclude the following	
1. Service date not in report period	66,284
2. Not an outpatient hospital claim	47,592
3. Claim reconciliation	24,527
4. Outpatient claim merged w/ inpatient stay	16,734
5. Other insurance	13,214
6. Not found on detail file	12,743
7. Duplicate claim	3,973
8. Not a complete claim	43
9. Invalid/missing diagnosis code(s)	29
10. Not found on header file	20
Claims in analytical dataset	**1,203,593**
Visits in analytical dataset	**1,208,922**

Invalid or Ungroupable DRG

55 stays grouped to an error DRG, either “ungroupable” or the principal diagnosis code listed was not appropriate as a principal diagnosis. (See Section B.5.1 re DRG grouping.)

Invalid/missing Diagnosis Code(s)

In order to accurately group claims to the appropriate DRG, correct diagnosis codes are is required. 20 claims were excluded because the principal diagnosis code was missing or invalid.

2009 Dates of Service

Five claims were excluded because the discharge date was outside CY 2010.

B.1.3 Data Validity and Comparability: Outpatient

For the outpatient data, Table B.1.3.1 shows a reconciliation of record counts, starting from the 1,388,752 claims received and ending with the analytical dataset of 1,203,593 outpatient claims. These 1,203,593 claims represented 1,208,922 visits, where a visit was defined as all services provided to one patient by one hospital on one day. (A single claim can represent multiple days of service, and a single day of care can be billed on multiple claims.)

The reasons for excluding claims are shown below. The number of claims under each exclusion reason depends on the order in which the validation steps were taken.

Service Date Not in Report Period

66,284 claims were excluded because the last date of service was outside CY 2010.

Not an Outpatient Hospital Claim

The bill type field is submitted by the hospital to the payer. A value of 131, for example, is a single admit-through-discharge claim at a hospital for outpatient care. All received values of bill type were examined. 47,952 claims were excluded because the bill type value indicated that they were not outpatient care.

Claim Reconciliation

24,527 claims were excluded because the billed charge was zero, the allowed amount was zero, or the allowed amount minus patient cost-sharing (e.g., coinsurance and deductible), did not equal the paid the amount.

Outpatient Claim Merged with Inpatient Stay

In special circumstances, there were outpatient charges that should have been submitted as part of the inpatient claim, primarily emergency department claims that were within the three (3) days of an inpatient admission. The payer kindly supplied additional information so that outpatient and inpatient services were appropriately defined. 16,734 claims were affected by this change.

Other Insurance

13,214 claims were excluded as the dataset we received included claims with other insurance.

Not Found on Detail

All claims were reconciled between the header file and the detail (line-level) file. If the detail lines did not exist in the outpatient detail file, the header claims were excluded. 12,743 header claims were therefore excluded.

Duplicate Claim

3,973 claims were excluded because they appeared to be duplicates of other records in the dataset. Duplicates were defined as showing identical values for patient, hospital, admission date, discharge date, discharge status, and bill type. Billed charges were also reviewed as part of process. The existence of duplicate records does not necessarily imply duplicate payments to hospitals, but it does mean that the duplicated records had to be excluded from the analytical dataset in order to prevent double-counting.

Not a Complete Claim

The third digit of the bill type indicates the frequency of the claim. The most common value was 1; admit-through-discharge, which would encompass all charges for that stay. 43 claims were excluded because the frequency was a 2, indicating the claim was interim and not complete.

Invalid or Missing Diagnosis Code(s)

In order to accurately group claims to the appropriate DRG, correct diagnosis codes are is required. 29 claims were excluded because the principle diagnosis code was missing or invalid.

Not Found on Header File

All claims were reconciled between the header file and the detail file. If the header claim did not exist in the outpatient header file, the detail claims were excluded. 20 detail claims were therefore excluded.

B.1.4 Comparison with Other Data Sources

As an external check on the validity of the analytical dataset, we compared totals and averages with other data sources, as shown in Table B.1.4.1. For both inpatient and outpatient care, the major exclusions from the analytical dataset were people without insurance, military health care (TRICARE), workers' compensation, some self-insured group plans, and out-of-state residents. For inpatient care, the study included 73 percent of inpatient stays reported by the American Hospital Association. For outpatient care, the study included 62 percent of reported outpatient visits. The AHA visit count, however, included non-hospital services owned by hospitals, such as physician clinics and home health care agencies. The percentage of hospital outpatient visits included in the study would be higher than 62 percent, presumably in the neighborhood of 73 percent. Overall, we believe the analysis captures all the payers that play major roles in the marketplace dynamics of determining payment levels in Rhode Island.

Table B.1.4.1 Comparison of Analytical Dataset with External Sources (includes Excluded Stays/Visits)				
Measure	Other Source	This Report	Diff.	Comment
Comparison with AHA *Hospital Statistics* for the 11 General Hospitals				
Inpatient stays	134,680	97,708	-27%	See note 1
Inpatient charges	$3.62 billion	$2.77 billion	-23%	
Charges per stay	$26,904	$28,359	5%	
Outpatient visits	2,622,415	1,520,295	-42%	See note 3
Outpatient charges	$3.56 billion	$2.25 billion	-37%	
Charges per visit	$1,358	$1,477	9%	
Net patient revenue	$2.63 billion	$1.65 billion	-37%	Inpatient plus outpatient
Comparison with the RI Department of Health Hospital Discharge Dataset – Selected Payers Only				
Inpatient stays	102,082	97,708	-4%	
Inpatient charges	$2.86 billion	$2.77 billion	-3%	
Charges per stay	$27,979	$28,359	1%	
Comparison with Medicare Cost Report Data for All Payers				
Ratio of cost to charges, inpatient	38.4%	40.3%	5%	Or 1.9 percentage points
Ratio of cost to charges, outpatient	26.4%	28.8%	9%	Or 2.4 percentage points

Notes:
1) AHA source is American Hospital Association, *AHA Hospital Statistics,* 2012 Edition (Chicago: Health Forum LLC, 2012), p. 129.
2) AHA stay count was defined by us to include admissions plus births.
3) AHA counts a visit as each appearance by a patient in a hospital department, including home health and other non-hospital services. This study counts a visit as all services to one patient on one day, excluding non-hospital services.
4) Inpatient RCC from Medicare cost reports is from www.cms.gov from the FY 2013 final rule for the inpatient prospective payment system. The RCC reflects both operating and capital costs, as does the RCC used in this report. The two numbers differ in how some costs are handled and in the timing of the cost reports used in calculating the average.
5) Outpatient RCC from Medicare cost reports is from www.cms.gov from the CY 2013 final rule for the outpatient prospective payment system. The RCC reflects both operating and capital costs, as does the RCC used in this report. The two numbers differ in how some costs are handled and in the timing of the cost reports used in calculating the average.

B.2 Defining Payers and Hospitals

B.2.1 Payers

Throughout the study, five "payers" were defined: Medicare fee-for-service, Medicare managed care, Medicaid fee-for-service, Medicaid managed care, and commercial. Medicare managed care and Medicaid managed care were defined separately from the commercial plans because of evidence from this study and previous work that payment patterns tend to differ for these lines of business even within the same company.

Although there are similarities in patterns of payment within each of the Medicare managed care, Medicaid managed care and commercial sectors, it should be borne in mind that BCBSRI, United, Tufts, and Neighborhood are separate organizations that compete with each other in their various lines of business both beneficiaries and for access to hospital care.

B.2.2 Hospitals

The analytical dataset shown in Tables B.1.2.1 and B.1.3.1 included Rhode Island's 11 general hospitals, two psychiatric hospitals (Butler and Bradley), and the Rehabilitation Hospital of Rhode Island. It also included care at out-of-state hospitals received by Rhode Island residents enrolled in Medicaid fee-for-service, Medicare and Medicaid managed care plans, and the commercial plans. Because we obtained Medicare fee-for-service data from the Rhode Island Hospital Discharge Dataset, the analytical dataset did not include Rhode Island residents who received care in out-of-state hospitals.

Essentially all the analysis was of payments to the 11 general hospitals. Care at Bradley, Butler, the rehabilitation hospital, and out-of-state hospitals were excluded. The only exception was the inclusion of Butler and Bradley in the discussion of mental health care in Sections 3.4 and 4.5.

B.3 Defining Payment

Payment was defined as the allowed amount for a given service. This is the amount "allowed" by the payer as a reasonable price for the service. Patient cost-sharing (e.g., deductibles, coinsurance, copayments) and any payments for which a third party is liable are deducted from the allowed amount to arrive at the reimbursement from the payer.

For this analysis, the allowed amount was also adjusted to account for lump sum payments made to hospitals from the payers. Tufts and Rhode Island's Medicaid fee-for-service are the only two sets of payer data that were adjusted for these payments. All other payers either did not make these types of payments or paid a nominal amount.

In some cases, the allowed amount was adjusted to account for all-inclusive payments for mental health services. There are cases where a payer pays a bundled amount for a

service that also includes the payment for the professional service, psychologies, psychiatrist, etc. United was able to provide us with the information necessary to make adjustments so that mental health payments referred only to the hospital service.

Payment for Medicare fee-for-service stays excluded payment for direct medical education, organ anquisition costs and certain other items that are not paid through the claims processing system.

B.4 Cost Estimation

We estimated the cost of treating patients as incurred by hospitals using two inpatient ratios of cost-to-charge (RCCs) and two outpatient RCCs for each hospital, both with and without direct medical education cost. To calculate the RCCs we used 2010 Medicare cost reports for all but two hospitals; for those hospitals, we used 2009 reports.

We started with the information found in Worksheet C, Part I of the Medicare cost report for each hospital. Medicare cost reports reflect information for all patients and all payers. Worksheet C, Part I shows inpatient and outpatient charges, total costs and RCCs for each hospital cost center.

Our methodology was very similar to that followed by Medicare researchers and other analysts of hospital cost data. To calculate inpatient RCCs, we estimated inpatient cost for every cost center by dividing inpatient charges by total charges and then multiplying that result times total cost. Cost centers without inpatient charges were not factored into inpatient cost. To derive the hospital's total inpatient RCC, we divided the total calculated inpatient cost by the total inpatient charges. We used the same methodology to calculate outpatient RCCs.

While we have used Worksheet C, Part I to calculate RCCs, we recognize that not all hospital costs that can be attributed to direct patient care are reflected in these figures. Hospital costs not reflected in Worksheet C, Part I represent those that Medicare either does not allow or that Medicare accounts for in some other way (such as medical education expense). Hospital representatives across the state helped us to identify these additional costs such as malpractice insurance expense, pension costs and organ acquisition. We divided these costs by total charges (for hospitals that incurred them) to compute an add-on RCC.

At the request of project stakeholders, we included additional adjustments to hospital costs. We have calculated RCCs for bad debt expense, net of Medicare reimbursement. Bad debt charges were obtained from hospitals' 2010 audited financial statements. Based on a 2010 nationwide survey of payment trends in the healthcare industry by The Association for Work Process Improvement (TAWPI), we estimated that half of bad debt charges are related to self-pay or uninsured patients, and the other half are related to uncollected co-pays and deductibles for insured patients. Bad debt charges related to uninsured patients do not represent revenue that hospitals would likely have collected in its entirety. Therefore, these charges have been reduced to cost using worksheet C RCCs. Bad debt charges related to uncollected co-pays and deductibles may not be charges but rather uncollected net revenue. So these charges have been included as bad

debt cost at 100 percent. To summarize, 50 percent of bad debt charges have been reduced to cost by each hospital's RCC, and 50 percent have been included in total.

After extensive discussions of how to handle the hospital license fee and Medicaid disproportionate share (DSH) and upper payment limit (UPL) payments, we decided to net out the fees vs. the payments for each hospital. That is, for each hospital we have adjusted hospitals costs to show the license fees as a cost and the UPL/DSH payments as an offset to cost. We did this with two considerations in mind: (a) the fees and the DSH/UPL payments are not tied to specific patients but (b) both the fees and the DSH/UPL payments are tied to Medicaid financing. We thought that an alternative approach – spreading the cost of the fees across all patients but counting the payments as only pertaining to Medicaid patients – would be misleading. DSH, UPL and license fee figures for 2010 were provided to us by the Rhode Island Executive Office of Health and Human Services.

Project stakeholders also requested that charity care costs be included in the RCCs for each hospital. Inpatient and outpatient charges related to charity care were provided to us by the Hospital Association of Rhode Island (HARI). We multiplied these charges by inpatient and outpatient RCCs from worksheet C to derive associated costs. Table B.4.1 shows the derivation of the RCCs for each hospital.

Table B.4.1

Calculation of Ratios of Charges to Costs (RCCs) Used in Estimating the Cost of Care

(All dollar figures in millions)

	From Medicare Cost Report, Worksheet C, Part I						Other Adjustments		Charity Care Adjustment			
		1	2	3	4	5	6	7	8	9	10	11
Hospital	Cost Rpt Year	Total Cost	IP Charges	OP Charges	Wksht C IP RCC	Wksht C OP RCC	Wksht C Cost Adjust	Adjust RCC	IP Charity Cost	OP Charity Cost	IP Charity RCC	OP Charity RCC
Bradey	2010	$64.73	$47.79	$28.29	85.1%	85.1%	$0.00	0.0%	$0.97	$0.03	2.0%	0.1%
Butler	2010	$51.10	$101.65	$15.84	43.4%	44.3%	$1.77	1.5%	$1.13	$0.18	1.1%	1.1%
Kent	2010	$232.18	$437.56	$328.16	33.8%	25.7%	$6.77	0.9%	$1.84	$1.50	0.4%	0.5%
Landmark	2010	$99.85	$187.82	$177.85	32.6%	21.7%	$0.02	0.0%	$1.25	$0.39	0.7%	0.2%
Memorial	2010	$126.62	$169.81	$165.75	41.1%	34.2%	$0.55	0.2%	$0.92	$1.31	0.5%	0.8%
Miriam	2010	$290.10	$541.84	$615.44	32.3%	18.7%	$1.39	0.1%	$5.94	$4.14	1.1%	0.7%
Newport	2010	$94.07	$86.85	$116.01	62.8%	34.1%	$0.41	0.2%	$1.97	$1.60	2.3%	1.4%
Rehab	2009	$14.42	$20.31	$7.19	53.9%	48.1%	$0.02	0.1%	$0.00	$0.04	0.0%	0.5%
Rhode Is	2010	$693.35	$1,268.49	$1,099.26	34.6%	23.1%	$7.05	0.3%	$21.17	$23.04	1.7%	2.1%
Roger Wms	2010	$119.48	$140.74	$165.02	50.7%	29.1%	$1.53	0.5%	$1.88	$1.21	1.3%	0.7%
South Co.	2010	$91.78	$88.94	$146.76	53.6%	30.1%	$0.00	0.0%	$0.46	$0.23	0.5%	0.2%
St. Joseph	2010	$148.82	$212.80	$194.27	43.1%	29.4%	$0.12	0.0%	$1.36	$1.26	0.6%	0.6%
Westerly	2009	$78.69	$73.26	$136.85	51.6%	29.8%	$0.07	0.0%	$0.65	$0.28	0.9%	0.2%
Women & Inf	2010	$291.41	$448.01	$272.17	38.1%	44.3%	$8.43	1.2%	$1.56	$2.55	0.3%	0.9%
Total		**$2,396.60**	**$3,825.88**	**$3,468.86**	**38.2%**	**26.9%**	**$28.13**	**4.0%**	**$41.11**	**$37.76**	**1.1%**	**1.1%**

		Adjustment for DSH, UPL and Licensing Fee			RCCs Excluding Medical Education			Medical Education Adjustment			RCCs including Medical Education	
		12	13		14	15		16	17		18	
Hospital		Lic fee-DSH-UPL Adj	Lic fee-DSH-UPL RCC		IP RCC excl Med Ed	OP RCC excl Med Ed		Med Ed Cost	Med Ed RCC		IP RCC incl Med Ed	OP RCC incl Med Ed
Bradey		-$0.08	-0.1%		88.0%	86.0%		$0.00	0.0%		88.0%	86.0%
Butler		-$0.01	0.0%		46.3%	47.3%		$2.06	1.8%		48.1%	49.1%
Kent		-$9.30	-1.2%		36.0%	27.9%		$3.63	0.5%		36.5%	28.4%
Landmark		-$8.81	-2.4%		33.2%	21.9%		$0.00	0.0%		33.2%	21.9%
Memorial		-$10.97	-3.3%		41.3%	34.7%		$12.12	3.6%		45.0%	38.3%
Miriam		-$14.00	-1.2%		33.3%	19.2%		$18.47	1.6%		34.9%	20.8%
Newport		-$4.79	-2.4%		64.8%	35.2%		$0.00	0.0%		64.8%	35.2%
Rehab		-$0.11	-0.4%		53.9%	48.6%		$0.00	0.0%		53.9%	48.6%
Rhode Is		-$57.11	-2.4%		35.5%	24.5%		$80.90	3.4%		38.9%	27.9%
Roger Wms		-$8.34	-2.7%		51.8%	29.6%		$10.27	3.4%		55.1%	33.0%
South Co.		-$4.00	-1.7%		54.5%	30.6%		$0.00	0.0%		54.5%	30.6%
St. Joseph		-$7.73	-1.9%		43.4%	29.7%		$1.04	0.3%		43.6%	29.9%
Westerly		-$4.02	-1.9%		53.0%	30.5%		$0.00	0.0%		53.0%	30.5%
Wom & Inf		-$17.60	-2.4%		38.0%	44.7%		$17.05	2.4%		40.3%	47.1%
Total		**-$146.86**	**-2.0%**		**39.2%**	**27.9%**		**$145.53**	**2.0%**		**41.2%**	**29.9%**

Notes:
1) Although cost report information was compiled for all hospitals, the focus of the analysis was on the 11 general hospitals.

B.5 Categorizing Inpatient Care

B.5.1 Grouping by DRG

All inpatient stays were grouped by Diagnosis Related Group, a widely accepted method of classifying inpatients into groups that are similar both clinically and in terms of typical use of hospital resources. There are several different DRG algorithms. For this analysis, the All Patient Refined DRG (APR-DRG) algorithm was preferred because it was designed to apply to all patients and because it is widely used nationwide. (Effective July 1, 2010, the Rhode Island Medicaid fee-for-service program began using APR-DRGs in calculating payment to hospitals.) APR-DRGs were developed by 3M Health Information Systems and the National Association of Children's Hospitals and Related Institutions.

All stays were also grouped by Medicare Severity DRGs (MS-DRGs), which is the algorithm currently in use by the Medicare fee-for-service program. However, the Medicare program has stated that the algorithm was developed only for the Medicare population, using only Medicare data. Therefore it is much more appropriate for the adult medical/surgical population than it is for obstetrics, pediatrics, and newborns. In Chart 3.1.1, MS-DRGs were used as a check on the results that had been obtained using APR-DRGs.

B.5.2 Care Category

The care category algorithm (as shown in Table 2.1.1 of the report) was developed by Xerox. It was intended to result in a manageable list of categories that are aligned with the internal organization of a typical hospital. In purpose, care categories are similar to Major Diagnostic Categories (MDCs), which are based on DRGs and used by many hospital researchers. For purposes of an analysis such as this one, the chief advantage of care categories over MDCs is that care categories differentiate more finely among pediatric and newborn patients. The number of care categories is also easier to work with than the number of MDCs (25).

Care categories were assigned to each stay based on the APR-DRG assigned to the stay and the age of the patient. Pediatric patients were under age 18 while obstetric patients could be of any age.

B.6 Categorizing Outpatient Care

B.6.1 Visit Reasons

An outpatient visit was defined as all services provided by the hospital to a patient on the same day. Claims that spanned multiple days (e.g., for physical therapy) were broken into separate visit records, while multiple claims for the same day were combined into a single visit record. This definition differs slightly from the American Hospital Association definition described in Table B.1.4.1.

The "visit reason" algorithm was developed by Xerox for purposes of this study. It is a high-level categorization intended to reflect the likely primary reason why the patient was seen at the hospital that day. As shown in Table B.5.1.1, the algorithm is hierarchical and based almost entirely on revenue codes. For example, if a visit included an emergency room revenue code, then lab, imaging, and all other services were rolled into the ER visit reason. If no emergency room revenue code was present, then the algorithm searched for an outpatient surgery revenue code and rolled all other services into the outpatient surgery visit reason. The count of lab visits, therefore, included only those visit records that had a lab revenue code but no revenue codes indicating that the patient was seen in the ER, underwent surgery or radiation or chemotherapy, had an imaging scan, etc.

Table B.6.1.1
Logic for Outpatient Visit Reasons

Rank	Visit Reason	Services	Criteria
1	ER	Emergency room	Rev code 0450-0459
2	Day procedures	Outpatient surgery, cardiac catheterization, gastrointestinal procedures	Rev code 0360-0369, 0490, 0499, 0481, 0750
3	Outpatient therapy	Occupational therapy, physical therapy, speech therapy, respiratory therapy, cardiac rehabilitation	Rev code 0410-0449, 0470, 0479, 0943
4	Radiation therapy	Chemotherapy, radiation therapy	Rev code 0330-0339 or Proc Code J8500 - J9999
5	Advanced imaging	CT scans, PET scans, magnetic resonance imaging, nuclear medicine	Rev code 0350-0359, 0340-0349, 0404, 0610-0619, 0176-0181
6	Outpatient mental health	Outpatient mental health services	Rev code 0900-0919
7	Clinic	General and specialty physician clinics	Rev code 0510-0519, 0770, 0771
8	Standard imaging	Xrays, ultrasound, other imaging	Rev code 0402, 0320-0329, 0400-0409
9	Other diagnostic services	EKG, EEG, pulmonary function tests, etc	Rev code 0920-0925, 0460, 0469, 0730-0740
10	Lab	Lab, pathology	Rev code 0300-0319
11	Other		All other visits

Notes:
1) "Outpatient visit reason" is a categorization algorithm developed by Xerox. It is a hierarchical grouping algorithm, meaning that each claim (visit) is assigned to one and only one visit reason depending on the first criteria met, in the order shown above.

B.6.2 Ambulatory Patient Classification (APC) Groups

In 2000, Medicare implemented a new payment method for outpatient hospital care properly known as the Outpatient Prospective Payment System (OPPS) but more commonly as APCs, after the Ambulatory Payment Classification (APC) groups that are at the main component. There are over 700 APCs that group together procedures, services, and drugs that are similar both clinically and in terms of typical hospital

resource use. The OPPS also includes a clinical lab fee schedule, a therapy fee schedule, and a few miscellaneous fees for specific services.

As part of our analysis, we ran outpatient claims through a commercially available APC pricing simulator, taking into account differences in coverage payment policy between Medicare and the various payers included within the scope of this study. This procedure allowed us to compare payment from Medicare managed care plans, Medicaid FFS, Medicaid managed care and commercial payers with what Medicare would have paid. Because one commercial payer's claims dataset did not include the detailed CPT and HCPCS codes necessary for accurate APC assignment, some of the comparisons in the study were based on only two commercial payers. Nevertheless, we believe the results reflect the commercial marketplace overall.

B.6.3 Enhanced Ambulatory Patient Groups (EAPGs)

EAPGs are a patient classification system designed to describe the amount and type of resources used in an outpatient visit. Patients have similar clinical characteristics and require similar volumes of hospital resources. EAPGs were developed by 3M Health Information Systems. Relative to Medicare APCs, EAPGs represent a more clinically coherent and more bundled approach to measuring the mix of services used by different patients at different hospitals.

Version 3.7 of the 3M Core Grouping Software logic was applied to the OHIC outpatient data. All details services are input into the core grouping software and reviewed by the system. Each service within a specific date of service is then given an EAPG Code, adjusted weight, full weight, EAPG payment, etc.

Because one commercial payer's claims dataset did not include the detailed CPT and HCPCS codes necessary for accurate APC assignment, some of the comparisons in the study were based on only two commercial payers. Nevertheless, we believe the results reflect the commercial marketplace overall.

B.6.4 Clinical Vignettes

Clinical vignettes were used to assess variation in payments to hospitals for a specific, well defined service. The vignette is a "header level" concept, that is, it includes all line-level services that were provided to specific types of patients. Although the list of services could vary by patient and by hospital, the vignettes were chosen to reflect patient conditions that were both common and relatively homogenous in treatment. The colonoscopy vignette included all services for any patient who underwent a colonoscopy (CPT procedure codes 45380 or 45378). The chest pain vignette included all services to patients who met the following criteria:

- Seen in the emergency room (revenue code in range 0450 to 0459)
- Principal diagnosis of chest pain (ICD-9-CM diagnosis code 786.50 or 786.59)
- Not admitted to inpatient care
- Not treated with cardiac catheterization (revenue code 0481)

B.6.5 Service Baskets

Baskets are service procedures that can be compared to each other. They combine a variety of very similar and common services into a single analytical unit. The services are relative homogenous across hospitals

Typical emergency room (ER) evaluation services and typical advanced imaging services are used in the OHIC report. Typical ER evaluations services are defined as CPT code 99281 through 99285 and typical advanced imaging services are defined as procedure codes; 71020, 77080, 77052, 78452, 76830, 77057, 76856, 76805, 93306 and G0202.

Notes

[1] American Hospital Association, *AHA Hospital Statistics* (Chicago: Health Forum LLC, 20120), pp.13, 129

[2] Kaiser Family Foundation, *Concentration of Health Care Spending in the U.S., 2009* (slide). Available at http://facts.kff.org/chart.aspx?ch=1344

[3] Carolyn M. Clancy, "Preventing Healthcare-Associated Infections: Initiating Promising Solutions and Expanding Proven Ones," *American Journal of Medical Quality* (March/April 2011).