

**CENTRAL CARIBBEAN MEDICAL CENTER\***

**DECISION CONSULTANT REPORT**

**CARDIOLOGY FOR 2002**

\*sample report based on 8 disguised hospitals

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# CENTRAL CARIBBEAN MEDICAL CENTER DECISION CONSULTANT REPORT CARDIOLOGY FOR 2002

## Executive Summary

Central Caribbean Medical Center treated 1,322 cardiology patients in 2002. This volume compared with 1,875 cases for **St. Bart's Hospital**, 1,761 cases for **St. Thomas Hospital**, 1,750 cases for **Bermuda Triangle Hospital**, 1,395 cases for **Martinique Medical Center**, 1,369 cases for **Aruba Hospital**, 1,042 cases for **St. Croix Hospital**, and 752 cases for **Columbus Memorial Hospital**.

Medicare dominated Caribbean's cardiology payor mix with 69.5% of the patients, followed by HMO with 10.1%, and Blue Cross with 8.7%. Central Caribbean Medical Center had the second highest proportion of Medicare for cardiology patients of all the hospitals in the group behind St. Croix Hospital, had the lowest percentage of HMO patients, and had an average share of Blue Cross patients.

Caribbean's cardiology patients were somewhat older than the average of its competitors (71.1 years compared to 69.0 years). The largest source of admissions for Caribbean's cardiology patients was Emergency Room (76% of patients), followed by Physician Referral (23%). Caribbean had an above average proportion of Emergency Room compared to the other hospitals in the group, and had an average percentage of Physician Referral patients.

The top seven cardiology patient groups for Caribbean accounted for 1,196 or 90% of the hospital's total cardiology cases. These groups were Heart Failure & Shock (26%), AMI (19%), Angina Pectoris (16%), Cardiac Arrhythmia (14%), Chest Pain (6%), Syncope & Collapse (5%), and Peripheral Vascular Disorders (4%).

Caribbean's average length of stay per cardiology case was 6.3 days, 0.2 days or 3% higher than the severity mix adjusted average of its seven competitors of 6.1 days. Columbus Memorial Hospital had the lowest length of stay of 5.3 days, 1.0 days or 16% lower than Caribbean's. Caribbean's length of stay was above (with one exception) Columbus Memorial's LOS across the key patient groups.

Caribbean's charge per cardiology case was \$7,245. The severity mix adjusted average charge of its seven competitors was \$6,900, \$345 or 5% lower than Caribbean. Caribbean had the fourth highest charge per case. Columbus Memorial Hospital had the lowest charge with \$5,795.

Caribbean's total cost per cardiology case was \$4,905. The severity mix adjusted average total cost of its seven competitors was \$4,692, \$213 or 4% lower than Caribbean. Caribbean had the second highest total cost per case. Columbus Memorial Hospital had the lowest total cost with \$4,177. When examining major cost components, Caribbean's total cost for Routine Care, ER/Therapy/Other Services, Radiology Services, and Laboratory/Cardiac Cath were significantly above the lowest cost competitor. The key areas of lower total cost for Caribbean were Intensive Care and Pharmacy and Supplies.

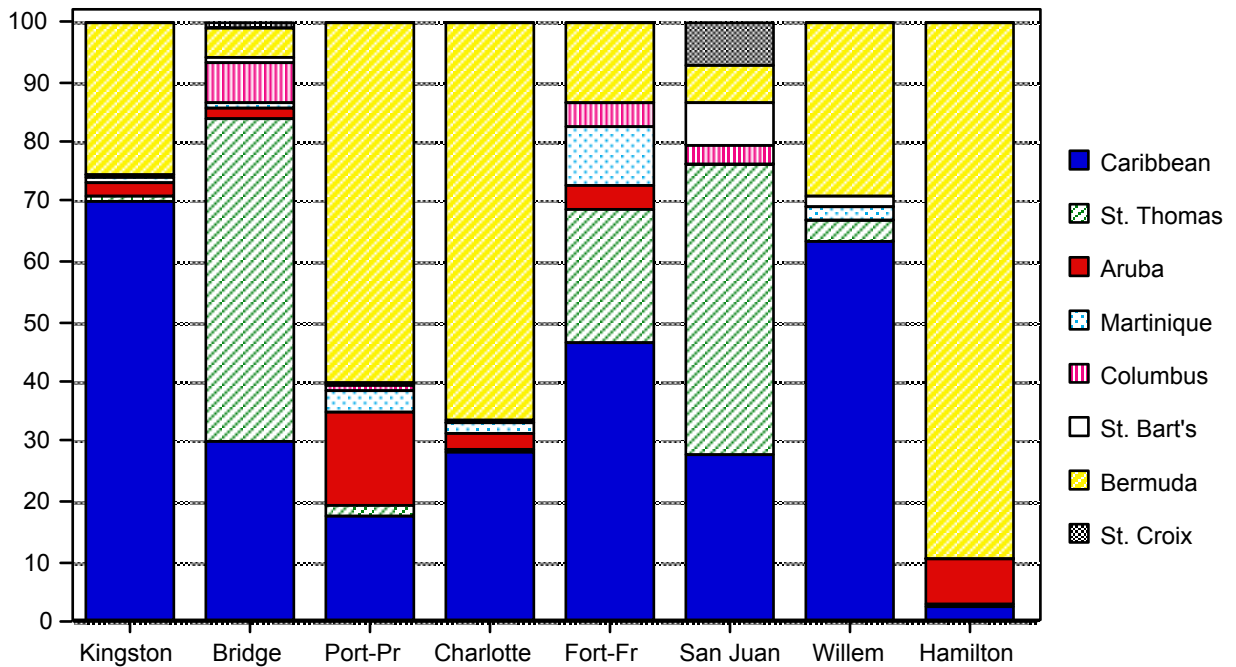
For future cost savings, Caribbean should consider ways to reduce Laboratory/Cardiac Cath, ER/Therapy/Other Services, and Radiology Services costs for cardiology cases to the cost of Columbus Memorial Hospital and to emulate the length of stay achieved by Columbus Memorial Hospital. Such actions have the potential to save Central Caribbean Medical Center **\$333,676** to **\$556,127** a year - \$220,778 to \$367,963 related to ancillary services, and \$112,898 to \$188,164 related to length of stay reductions.

**Market Share**

The top eight towns for Central Caribbean Medical Center accounted for 1,258 or 95% of the hospital's total cardiology cases. These key towns were as follows:

	<u>No. of Cases</u>	<u>Pct of Cases</u>	<u>Market Share</u>
Kingston	838	63.4%	70%
Bridgetown	133	10.1%	30%
Port-au-Prince	81	6.1%	18%
Charlotte Amalie	58	4.4%	28%
Fort-de-France	46	3.5%	46%
San Juan	40	3.0%	28%
Willemstad	33	2.5%	63%
Hamilton	16	1.2%	2%
Other	77	5.8%	1%
<b>Total</b>	<b>1,322</b>	<b>100.0%</b>	<b>12%</b>

The graph below shows the relative market share of cardiology patients for Caribbean versus its seven main competitors.



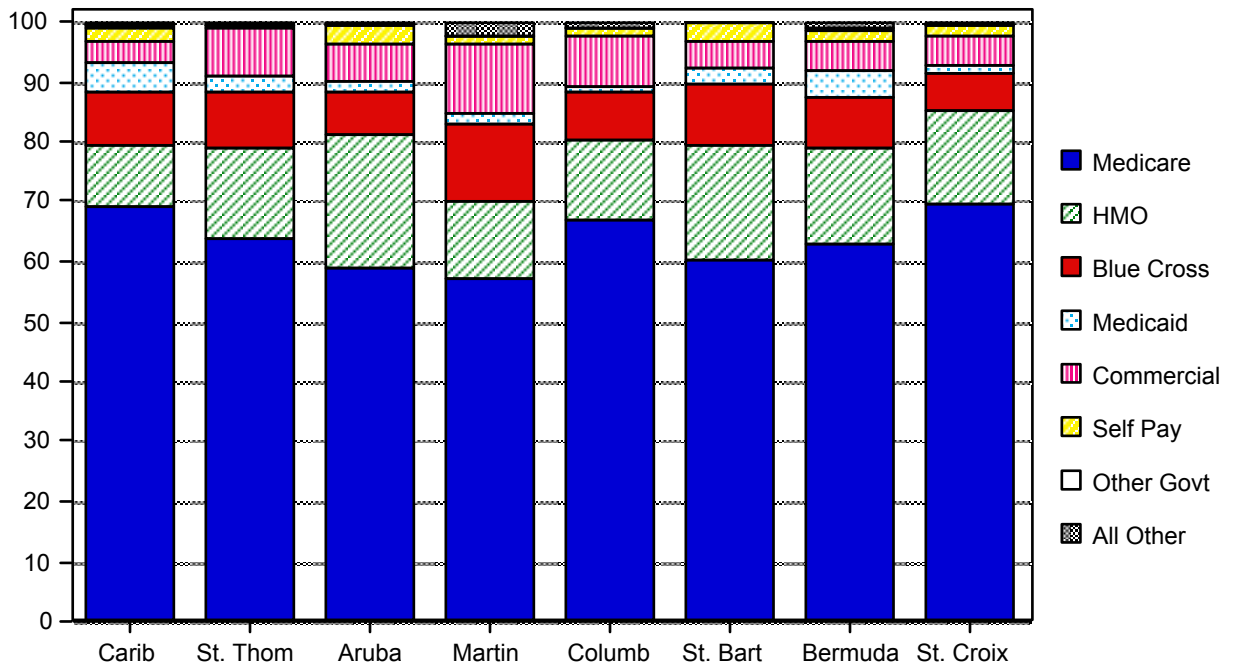
Caribbean had the highest share of Kingston patients, and had the second highest percentage of Bridgetown patients behind St. Thomas Hospital among the eight hospitals in the group.

**Payor Mix**

Medicare dominated the cardiology payor mix at Central Caribbean Medical Center with 69.5% of the patients, followed by HMO with 10.1%, and Blue Cross with 8.7%. Caribbean's payor mix as compared with the cardiology payor mix for all other hospitals in the comparison group was as follows:

	<u>Cardiology Caribbean</u>	<u>Cardiology Other Hospitals</u>
Medicare	69.5%	63.0%
HMO	10.1%	16.3%
Blue Cross	8.7%	9.0%
Medicaid	4.8%	2.1%
Commercial	3.6%	6.9%
Self Pay	2.5%	1.7%
Other Govt	0.5%	0.2%
Other	0.2%	0.4%
Work Comp	0.2%	0.2%
Free Care	0.0%	0.1%

The graph below compares the cardiology payor mix for Central Caribbean Medical Center with that of its primary cardiology competitors.



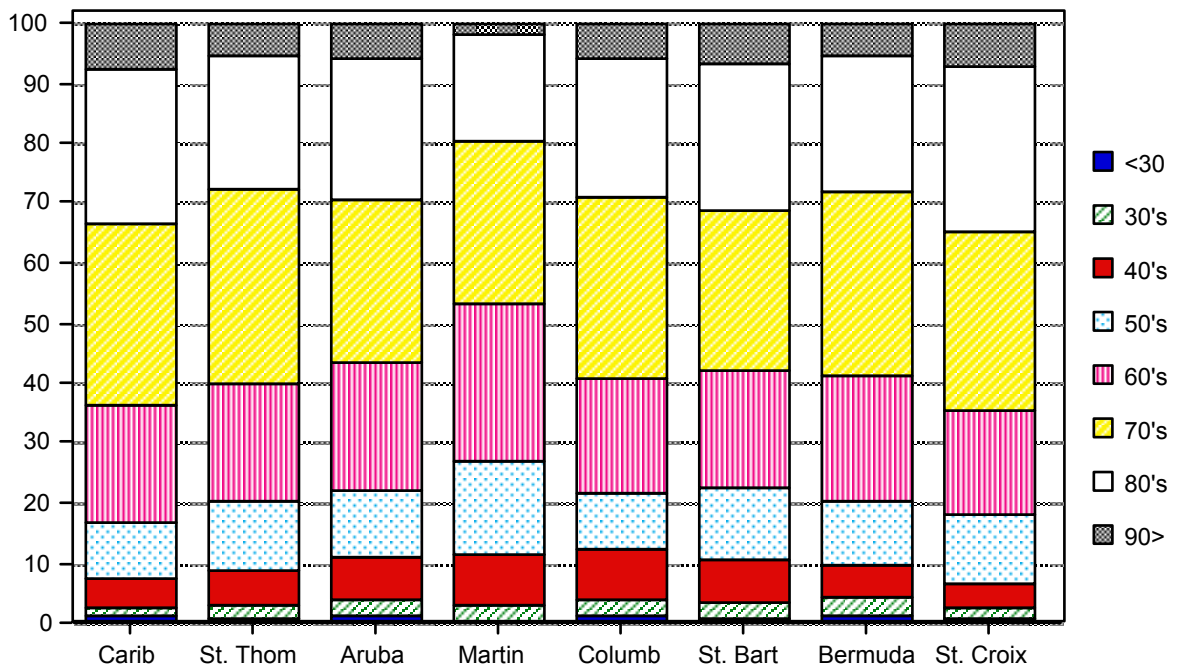
Central Caribbean Medical Center had the second highest proportion of Medicare for cardiology patients of all the hospitals in the group behind St. Croix Hospital, had the lowest percentage of HMO patients, and had an average share of Blue Cross patients.

## Patient Demographics

Caribbean's cardiology patients were somewhat older than the average of its competitors (71.1 years compared to 69.0 years). Males represented a slightly lower proportion of cardiology (44% versus 47%), while minorities made up a similar share of patients compared to the competitor average (3.1% versus 4.0%).

	<u>Average Patient Age</u>	<u>Percent Male</u>	<u>Percent Minority</u>
Caribbean	71.1	44%	3.1%
St. Thomas	69.4	47%	3.2%
Aruba	69.4	49%	0.4%
Martinique	66.1	53%	13.0%
Columbus	68.7	45%	1.3%
St. Bart's	69.3	48%	5.5%
Bermuda	68.9	50%	2.3%
St. Croix	71.4	37%	2.4%
Average ex. Caribbean	69.0	47%	4.0%

The graph below provides more detail on the age distribution of Caribbean's patients compared to its competitors.

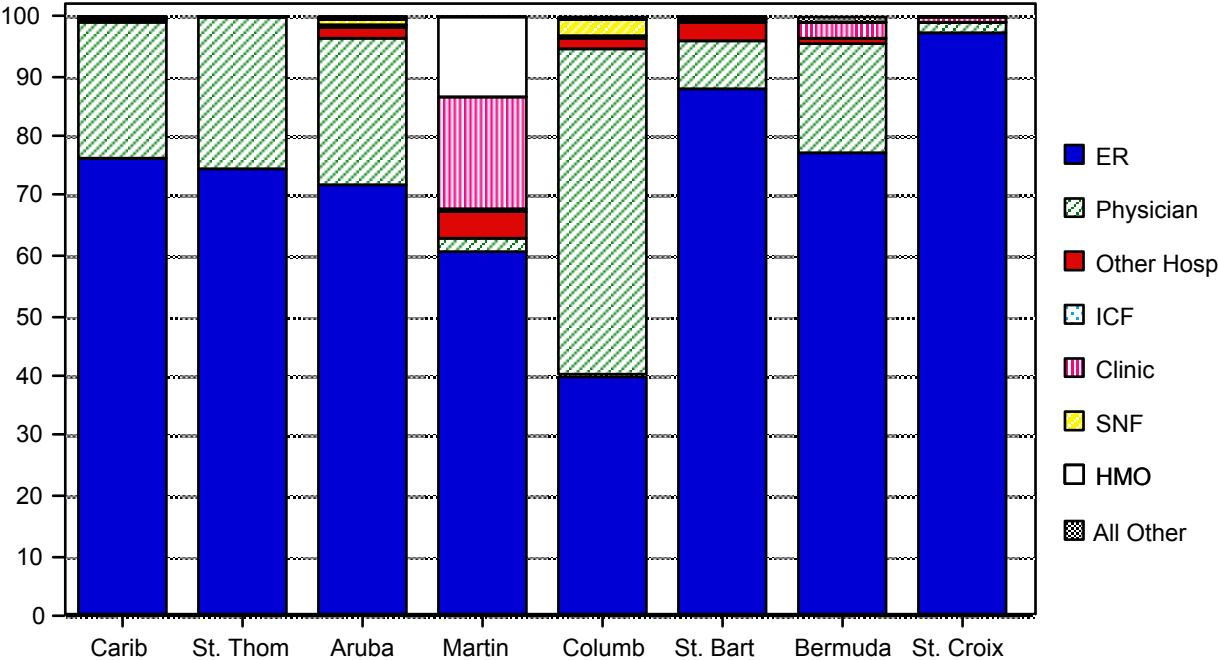


**Admit Source**

The largest source of admissions for Central Caribbean Medical Center's cardiology patients was Emergency Room (76% of patients), followed by Physician Referral (23%), and Other Acute Hospital (1%). Caribbean's admission sources for cardiology patients compared with the other hospitals in the comparison group were as follows:

	<u>Cardiology Caribbean</u>	<u>Cardiology Other Hospitals</u>
ER	76.5%	73.4%
Physician	22.5%	18.7%
Other Hosp	0.5%	1.8%
ICF	0.3%	0.1%
Clinic	0.1%	3.3%
SNF	0.1%	0.6%
HMO	0.0%	2.0%
Other	0.0%	0.1%

The graph below compares the admit source of Caribbean's cardiology patients with that of its primary competitors.



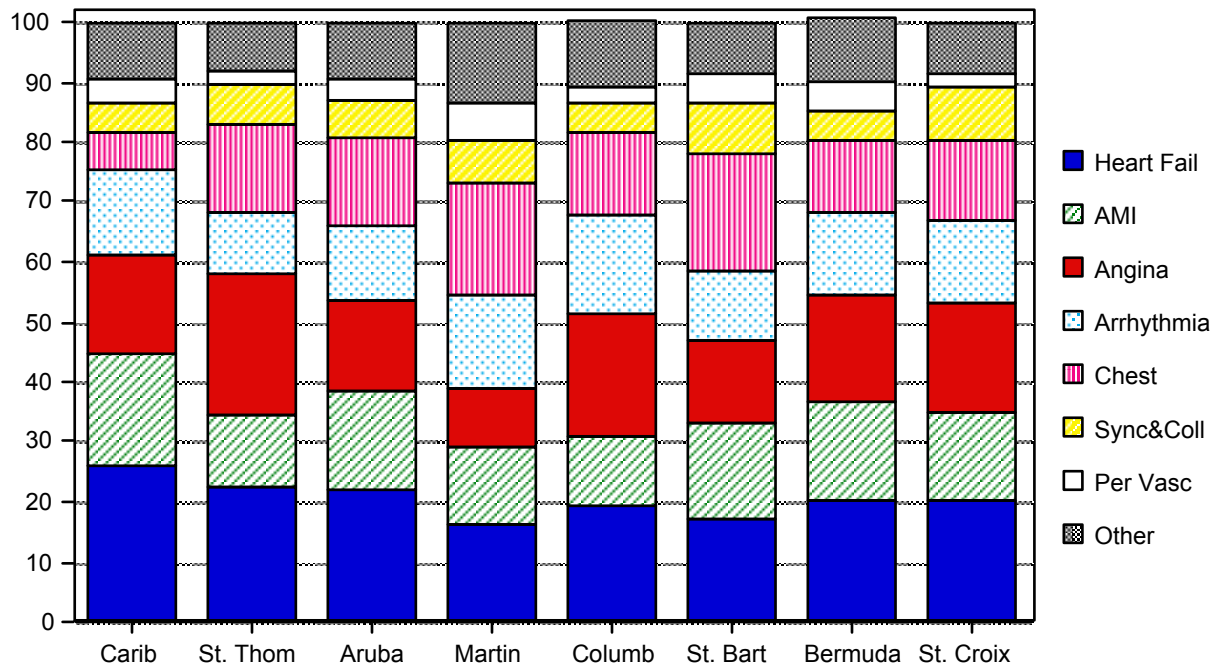
Emergency Room was the largest source of admissions not only for Central Caribbean Medical Center, but also for the other hospitals in the group as a whole. Caribbean had an above average proportion of Emergency Room for cardiology patients compared to the other hospitals in the group, and had an average percentage of Physician Referral patients.

## Patient Mix

The top seven cardiology patient groups for Central Caribbean Medical Center accounted for 1,196 or 90% of the hospital's total cardiology cases. These key patient groups were as follows:

<u>Patient Group</u>	<u>Included DRGs</u>	<u>No. of Cases</u>	<u>Pct of Cases</u>
Heart Failure & Shock	127	349	26%
AMI	121-123	245	19%
Angina Pectoris	140	218	16%
Cardiac Arrhythmia	138-139	187	14%
Chest Pain	143	84	6%
Syncope & Collapse	141-142	65	5%
Peripheral Vascular Disorders	130-131	48	4%
Other Cardiology	Various	126	10%
<b>Total Cardiology</b>		<b>1,322</b>	<b>100%</b>

The graph below shows the mix of these cardiology patient groups for Caribbean versus its seven main competitors.



Caribbean had the highest proportion of Heart Failure & Shock for cardiology patients of all the hospitals in the group, and had the highest percentage of AMI patients among the eight hospitals in the group.

**Length of Stay** (Severity Mix Adjusted)

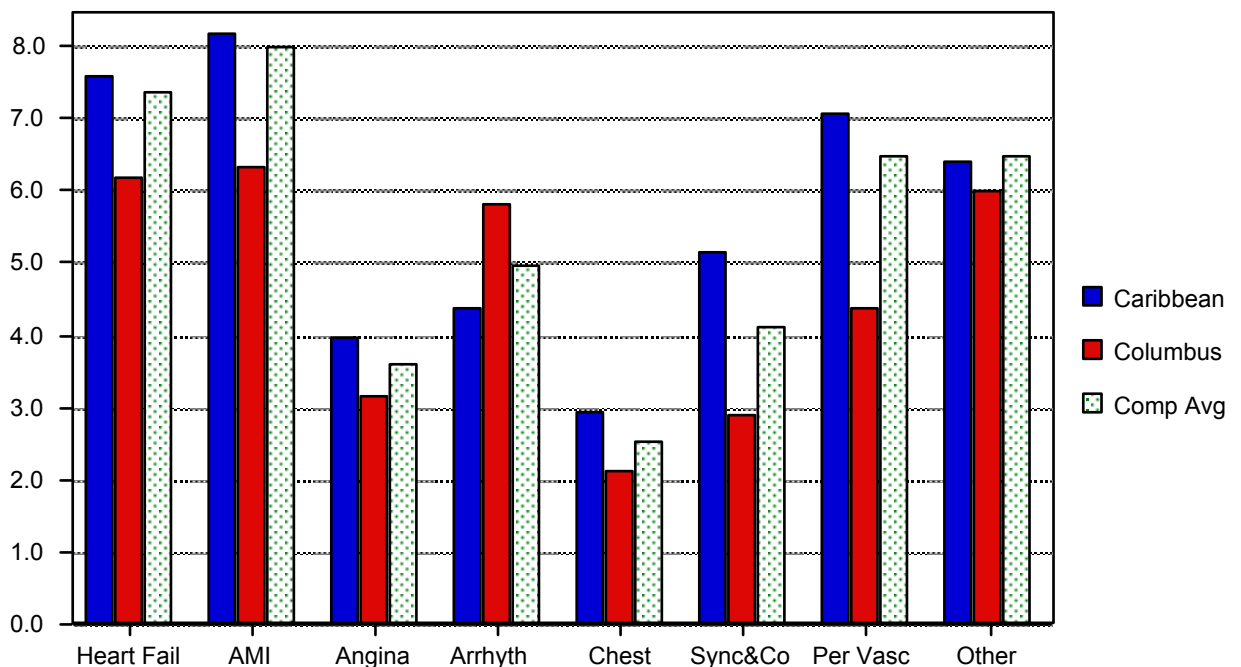
Central Caribbean Medical Center's average length of stay per cardiology case was 6.3 days, 0.2 days or 3% higher than the average of its seven major competitors of 6.1 days. Columbus Memorial Hospital had the lowest length of stay of 5.3 days, 1.0 days or 16% lower than Caribbean's.

The table below shows the average length of stay and its routine and intensive care components for Caribbean's cardiology cases compared with its competitors.

	Total <u>LOS</u>	Routine <u>LOS</u>	ICU <u>LOS</u>
Caribbean	6.3	5.2	1.0
St. Thomas	6.9	6.0	0.9
Aruba	6.5	5.2	1.3
Martinique	5.4	4.7	0.7
Columbus	5.3	4.2	1.0
St. Bart's	5.8	5.3	0.5
Bermuda	6.4	5.6	0.8
St. Croix	6.4	5.2	1.2
Average ex. Caribbean	6.1	5.2	0.9

Caribbean's length of stay was above (with one exception) Columbus Memorial Hospital's LOS across the key patient groups. The graph below shows a comparison of Central Caribbean Medical Center with Columbus Memorial Hospital and the competitor average:

**LOS Differences by Key Patient Group**



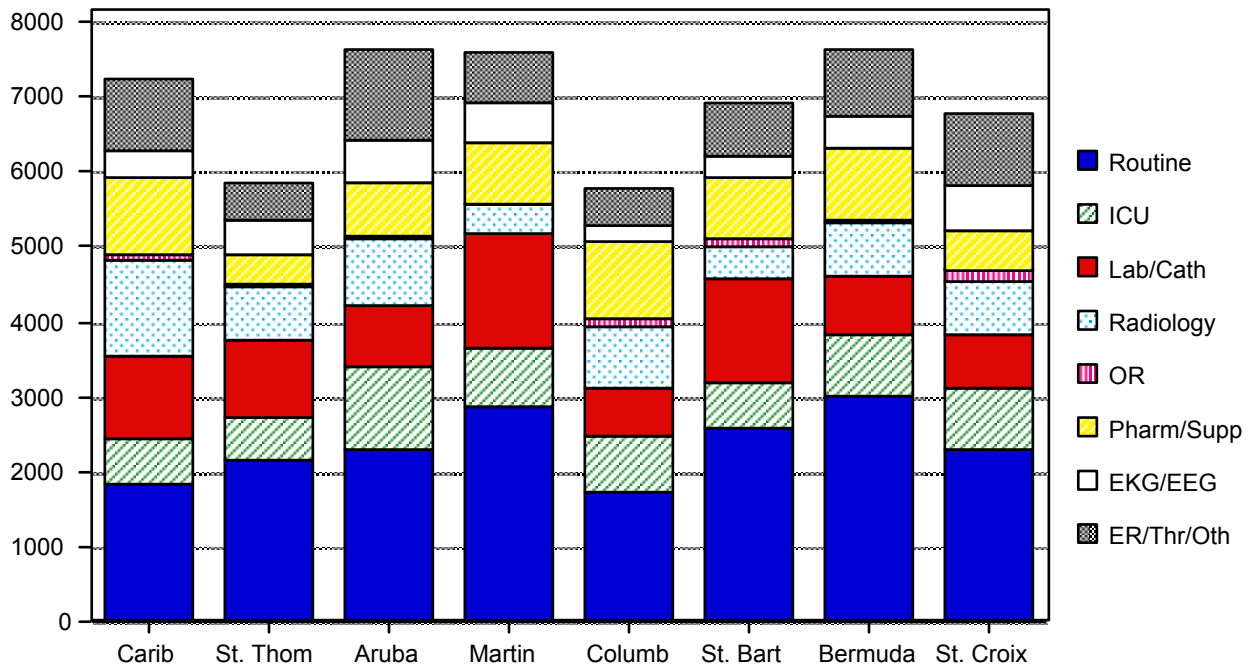
**Charge per Case** (Severity Mix Adjusted)

Caribbean's average charge per cardiology case was \$7,245. The average of its seven major competitors was \$6,900 - \$345 or 5% lower than Central Caribbean Medical Center. Caribbean had the fourth highest charge per case. Columbus Memorial Hospital had the lowest charge with \$5,795. Specifically, the charge per case for each hospital as compared to Central Caribbean Medical Center was as follows:

	<u>Total Charge</u> <u>Per Case</u>	<u>% Diff than</u> <u>Caribbean</u>
Caribbean	\$7,245	
St. Thomas	\$5,855	-19%
Aruba	\$7,657	6%
Martinique	\$7,606	5%
Columbus	\$5,795	-20%
St. Bart's	\$6,945	-4%
Bermuda	\$7,644	6%
St. Croix	\$6,797	-6%
 Average ex. Caribbean	 \$6,900	 -5%

The graph below shows the composition of the charge per case by department group for Caribbean and its competitors.

**Cardiology Total Charge per Case**



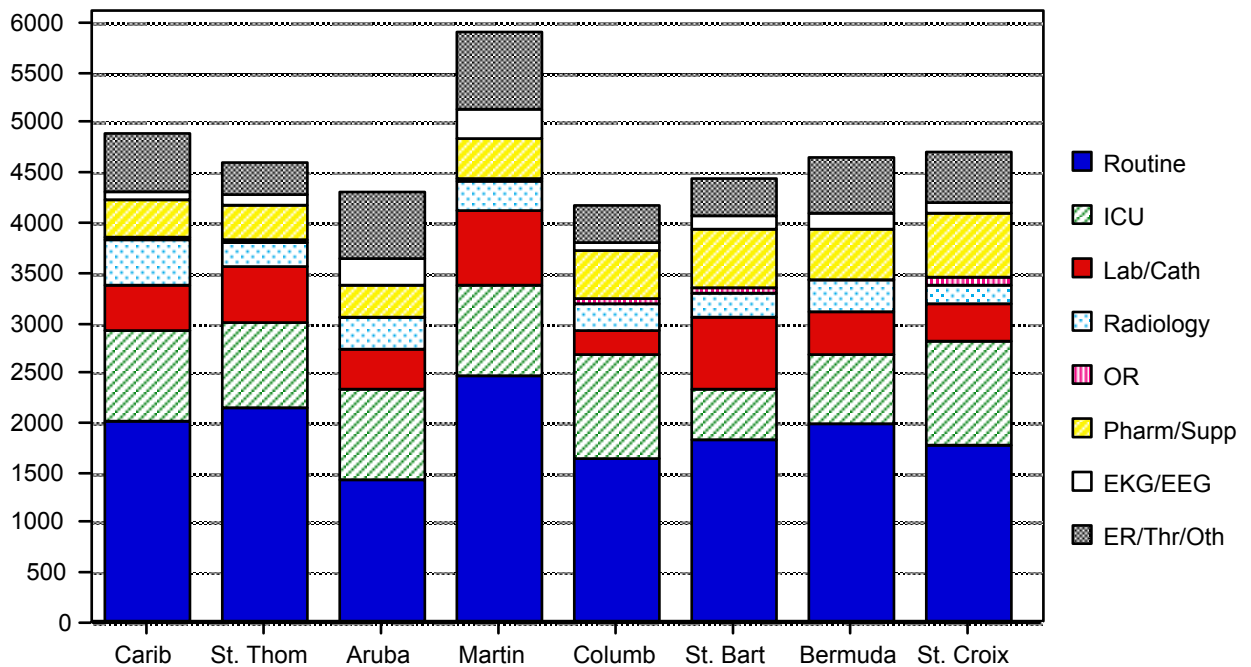
**Cost per Case** (Severity Mix Adjusted)

Caribbean's average total cost per cardiology case was \$4,905. The average of its seven major competitors was \$4,692 - \$213 or 4% lower than Central Caribbean Medical Center. Caribbean had the second highest total cost per case. Columbus Memorial Hospital had the lowest total cost with \$4,177. Specifically, the cost per case for each hospital as compared to Central Caribbean Medical Center was as follows:

	Total Cost Per Case	% Diff than Caribbean	Direct Cost Per Case	% Diff than Caribbean
Caribbean	\$4,905		\$2,280	
St. Thomas	\$4,620	-6%	\$1,990	-13%
Aruba	\$4,319	-12%	\$2,483	9%
Martinique	\$5,907	20%	\$2,800	23%
Columbus	\$4,177	-15%	\$2,094	-8%
St. Bart's	\$4,447	-9%	\$2,289	0%
Bermuda	\$4,660	-5%	\$2,430	7%
St. Croix	\$4,716	-4%	\$2,368	4%
Average ex. Caribbean	\$4,692	-4%	\$2,350	3%

The graph below shows the composition of the cost per case by department group for Caribbean and its competitors.

**Cardiology Total Cost per Case**



Caribbean's \$728 higher total cost per case than the lowest cost competitor, Columbus Memorial Hospital, and \$213 higher total cost per case than the competitors' average were composed of the following:

	\$ < than <u>Columbus</u>	Pct < than <u>Columbus</u>	\$ < than <u>Comp Avg</u>	Pct < than <u>Comp Avg</u>
Routine	-\$352	-17.5%	-\$109	-5.4%
ICU	\$109	11.7%	-\$76	-8.2%
Lab/Cath	-\$195	-45.0%	\$62	14.4%
Radiology	-\$198	-43.1%	-\$197	-42.9%
OR	\$6	14.4%	-\$5	-11.5%
Pharm/Supp	\$105	28.0%	\$96	25.5%
EKG/EEG	\$1	0.8%	\$81	102.5%
ER/Thr/Oth	-\$203	-35.4%	-\$65	-11.3%
<b>Total</b>	<b>-\$728</b>	<b>-14.8%</b>	<b>-\$213</b>	<b>-4.3%</b>

As shown in the above table, Caribbean's total cost for routine care, ER/Therapy/Other Services, Radiology Services, and Laboratory/Cardiac Cath were significantly above the lowest cost competitor. The key areas of lower total cost for Caribbean were Intensive Care and Pharmacy and Supplies.

**Opportunity Analysis / Action Plan**

Central Caribbean Medical Center spent \$281,516 more treating its 1,322 cardiology cases than if it had performed at the competitive average (1,322 cases \* \$213 per case) and \$962,367 more than if it had achieved the lowest cost of Columbus Memorial Hospital (1,322 cases \* \$728 per case).

For future cost savings, Caribbean should consider ways to reduce Laboratory/Cardiac Cath, ER/Therapy/Other Services, and Radiology Services costs for cardiology cases to the cost of Columbus Memorial Hospital and to emulate the length of stay achieved by Columbus Memorial Hospital. Such actions have the potential to save Central Caribbean Medical Center \$333,676 to \$556,127 a year - \$220,778 to \$367,963 related to ancillary services, and \$112,898 to \$188,164 related to length of stay reductions.

To achieve the potential savings, Central Caribbean Medical Center should focus on meeting the following goals:

- Reduce the average LOS in the routine units from 5.2 days to the 4.2 days of Columbus Memorial Hospital (savings of \$112,898 to \$188,164).
- Reduce Laboratory/Cardiac Cath expenditure by 41% to the cost of Columbus Memorial Hospital (savings of \$85,476 to \$142,460).
- Reduce ER/Therapy/Other Services expenditure by 31% to the cost of Columbus Memorial Hospital (savings of \$76,085 to \$126,808).
- Reduce Radiology Services expenditure by 33% to the cost of Columbus Memorial Hospital (savings of \$59,217 to \$98,695).