

**Calculating the Annual Update  
Allowance Under the Demonstration**

**Updating and Reevaluating  
the Difference Statistic Methodology**

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April 15, 2016

## Executive Summary

In a previous paper, *Calculating the Annual Update Allowance under the Demonstration*, we suggested a methodology for calculating the annual update so as to have the HSCRC be in compliance with both the All-Payer Waiver Test and the Medicare Waiver Test prescribed by the Demonstration.

Each of the Waiver Tests prescribed a limit on the rate of growth in hospital payments calculated on a per capita basis. The All-Payer Waiver Test limits the annual growth in the hospitals charges for services to Maryland residents calculated on a per resident basis (the All-Payer Statistic). The Medicare Waiver Test limits the growth in all hospital payments for services to resident Medicare FFS beneficiaries calculated on a per beneficiary basis (the Medicare Statistic). The proposed methodology is formulated in terms of an estimate (the Difference Statistic) of the difference between the annual increase in the All-Payer Statistic and the annual increase in the Medicare Statistic. For example, if in 2015, the All-Payer Statistic had increased by, say, 2.58% and the Medicare Statistic by 1.53%, then the Difference Statistic for 2015 would be 1.05%.

$$1.05\% = 2.58\% - 1.53\%$$

In the previous paper we estimated the Difference Statistic using five years of HSCRC claims data (2009-2013), determined the average over the five years, 2.94%, and proposed the use of a conservative Difference Statistic of 2.0% for the purpose of deriving the Annual Update Allowance. The technical details of the suggested methodology require the use of a conservative Difference Statistic in order to provide reasonable assurance that both Waiver Tests will be met.

This paper updates the calculation of the Difference Statistic using the HSCRC claims from 2011 to 2015 and an enhanced method of estimating the increase in the Medicare Statistic: the initial derivation of the Difference Statistic estimated the annual increase in the FFS beneficiaries based on the increase in the age 65+ population in Maryland; the updated estimates used the actual number of Part A and Part B beneficiaries weighted to create a single measure of the FFS beneficiaries residing in Maryland.

The updated calculation resulted in an average Difference Statistic of 2.10 and a conservative Difference Statistic projection of 1.24. However, it was noted that the Difference Statistic applicable to 2012 was unusually large (3.50) and that the four years of Difference Statistics used to calculate the average split between the first two years (2012 and 2013) preceding the term of the Demonstration and the second two years (2014 and 2015) being the first two years of the Demonstration. This split, for which there was no counterpart in the initial calculation of the Difference Statistics since the Demonstration hadn't begun, suggests that the updated calculation might be limited to the first two years of the Demonstration. Using the data from the first two years of the Demonstration, the Difference Statistic is 1.73% and a conservation projection is 1.0%.

One would like to corroborate the estimates of the Difference Statistics derived from the HSCRC claims data by the use of Medicare payment data, preferably including out of state claims. These complete payment data from 2006 to 2012 are available from CMS and the Maryland hospital payments for Medicare services to resident FFS beneficiaries are available from 2013 to 2015. However, we have not been able to reconcile and unify these Medicare payment data in a credible way. Therefore, the corroboration that we have been able to carry out involves only the Maryland hospital payments from 2013 to 2015.

For these years the average Difference Statistic was 1.80% and the conservatively projected Difference Statistic was .89%. These results therefore corroborate the Difference Statistic (1.73%) and the conservation projection (1.0%) derived from the HSCRC claims in the period 2013-2015.

### 1. Schedule 1: Maryland Hospital Charges per Resident

The hospital charge data in columns 1 and 2 of Schedule 1 were derived from the HSCRC's case mix tapes for 2011 through 2015 by the HSCRC staff.

Column 1 includes the hospital charges for all services and column 2 the hospital charges for services to Maryland residents. Column 3 computes the percentage of the hospital's total charges accounted for by services to Maryland residents. The uniformity of the column 3 percentages suggests that the coding of the residences of Maryland patients was done consistently throughout 2011 to 2015.

Column 4 records the Maryland population; column 5 the hospital charges per Maryland resident (col 2/ col 4); and column 6 the annual rate of increase in the charges per resident. The annual increases in the hospital charges for services to Maryland residents is the first of the two statistics used to derive the Difference Statistic.

Schedule 1

### Maryland Hospital Charges per Resident Annual Increases: 2011- 2015

#### Hospital Charges (000,000's)

CY	Total	MD Residents	% MD Res Claims	MD Population (000's)	MD Res Claims/ Capita Charge	% Change from Prior Year
2011	\$14,540.1	\$13,317.2	91.6	5,844.2	\$2,279	-
2012	\$15,017.5	\$13,732.1	91.4	5,890.7	\$2,331	2.38
2013	\$15,44.3	\$14,025.2	90.8	5,936.0	\$2,363	1.37
2014	\$15,741.2	\$14,331.8	91.0	5,975.3	\$2,399	1.52
2015	\$16,211.1	\$14,784.6	91.2	6,006.4	\$2,461	2.58

2. Schedule 2: Maryland Hospital Charges per Resident Medicare FFS Beneficiary

The hospital charges in column 1 represent the charges of Maryland hospitals to Medicare FFS beneficiaries residing in Maryland. Column 2 reports the number of such beneficiaries; column 3 the hospital charges per beneficiary (column 1/ column 2); and column 4 records the annual percentage change in the hospital charges per FFS beneficiary. The annual percentage change in the hospital charges per FFS beneficiary are the second statistics used to derive the Difference Statistic.

Schedule 2

Maryland Hospital Charges per Resident Medicare FFS Beneficiaries  
Annual Increase 2011- 2015

Year	Hospital Charges (000,000's)	Resident FFS Beneficiaries (000's)	Charge/Beneficiary	% Charge
2011	\$4,958.1	712.6	\$6,958	
2012	\$5,058.9	736.1	\$6,873	-1.22
2013	\$5,270.3	767.3	\$6,869	-.06
2014	\$5,391.5	792.0	\$6,807	-.89
2015	\$5,641.8	816.3	\$6,911	1.53

3. Schedule 3: The Difference Statistic and Variances

Columns 1 and 2 record the hospital charges per resident for services to Maryland residents and the annual increases in such charges per resident from Schedule 1. Column 3 and 4 record the Maryland hospital charges per resident FFS beneficiary and the annual increase in these amounts from Schedule 2.

Column 5 calculates the Difference Statistic in each year 2012-2015 and the average 2.10 over the five years. Column 6 specifies for each year the absolute value of the difference between the particular year's Difference Statistic and the average. For example, in 2012, the variance in Column 6 is 1.40, the difference between the Difference Statistic (3.50) and the average Difference Statistic (2.10):

$$1.40 = 3.50 - 2.10$$

The conservative projection of the Difference Statistic based on the results of Schedule 3 is 1.24, the average Difference Statistic (2.10) minus the average variances (0.86):

$$1.24 = 2.10 - .86$$

The Difference Statistic and Variance  
Maryland Hospital Charge Data: 2011- 2015

Maryland Residents

Year	Chrg/Res	% Change	Chrgs/FFS Beneficiary	% Change	Diff Statistic	Variance
2011	\$2,279	-	\$6,958	-		
2012	\$2,331	2.28	\$6,873	-1.22	3.50	1.40
2013	\$2,363	1.37	\$6,869	-.06	1.43	0.67
2014	\$2,399	1.52	\$6,807	-.89	2.41	0.31
2015	\$2,461	2.58	\$6,911	1.53	1.05	1.05
Average					2.10	0.86
Difference Statistic – Avg Variance					1.24	

#### 4. Discussion of Schedule 3

The statistics on Schedule 3 are derived from the consistently accumulated claims data of the HSCRC. However, these claims data for Medicare FFS beneficiaries residing in Maryland provide only an imperfect estimate of the statistic used in the Medicare Waiver Test (the total Medicare payments for hospital services to the resident FFS beneficiaries) because:

- The HSCRC claims do not include the claims for hospital services of resident FFS beneficiaries provided by out of state hospitals, and
- The claims do not reflect the variation in the payment to charge ratio for Medicare hospital services resulting from Medicare policies, including the Sequester

In addition, the four years of estimated Difference Statistics cover two periods in which the dynamics of hospital reimbursement in Maryland were very different. The first period (2012-2013) preceded the term of the All-Payer Model Demonstration and included the beginning of the Sequester in March 2013. The second (2014-2015) represented the first two years of the Demonstration, the implementation of the GBR target budgets, and the impact of enrollment under the ACA.

Over these two periods the average Difference Statistic dropped from 2.465  $((3.5 + 1.43)/2)$  to 1.730  $((2.41 + 1.05)/2)$ , reflecting a moderation in the growth of private sector volume in period 2. Furthermore, the average variance dropped from 1.035  $((1.40+0.67)/ 2)$  to 0.68  $((.31+ 1.05)/ 2)$ . This suggests that the use of a Difference Statistic of approximately 1.00 would be an appropriately conservative estimate based on the second period's data.

## 5. Alternative Estimates of the Difference Statistic

The HSCRC staff has accumulated Medicare inpatient and outpatient payments for Maryland hospital services for resident Medicare FFS beneficiaries for the period 2013-2015, including a 2-month run out with completion factors. Schedule 2A sets forth these payment data, the number of FFS beneficiaries, the payment per beneficiary and the annual percentage change in these payments per beneficiary in 2014 and 2015. These percentage changes are then used on Schedule 3A to re-estimate the Difference Statistic.

### Schedule 2A

#### Summary of Maryland Hospital Medicare Payments FFS Beneficiaries 2013-2015

CY	Inpatient	Outpatient	Total	FFS Beneficiaries (000's)	Payment/Beneficiary	% Change Payment/Beneficiary
2013	\$3,379.1	\$1,285.3	\$4,664.4	767.3	\$6,079	-
2014	\$3,390.0	\$1,366.0	\$4,756.0	792.0	\$6,005	-1.20
2015	\$3,514.5	\$1,469.9	\$4,984.5	816.3	\$6,106	1.69
Combined	2015/2013					.49

Schedule 3A records the percentage change in the Maryland hospital charges per resident for 2014 and 2015 from Schedule 1 and the percentage change in the payments per beneficiary from Schedule 2A. The Difference Statistics derived from these results average 1.80 and the average variance is .91. This suggests that the use of a Difference Statistic of .89 would be likely to ensure compliance with the Medicare Waiver Test.

### Schedule 3A

CY	% Change MD Resident Charges per Capita (Sch 1)	% Change Medicare Payment Per Beneficiary (Sch 2A)	Difference Statistic	Variance
2013	1.52	-1.20	2.72	.92
2014	2.58	1.69	.89	.91
Average			1.80	
Average Variance			.91	
Conservatively Projected Diff Statistic			.89	