## **Hospital Price Transparency Rule XBRL Prototype<sup>1</sup>**

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This is a very basic prototype of implementing the Hospital Price Transparency Rule using the global standard XBRL syntax. For more information on XBRL, please see my blog<sup>2</sup>.

XBRL offers an approach to representing information required by the Hospital Price Transparency Rule that is both human readable and a global standard machine-readable format. This is a very, very basic prototype which shows the fundamentals of how XBRL can be used for this task. The prototype provides a Microsoft Access database application for creating the information from a database, generates the XBRL in both raw XBRL format (machine readable) and Inline XBRL which is XBRL embedded within XHTML that is both human-readable and machine-readable.

To create the prototype, I took some information from a PDF provided by the Washington Health Alliance<sup>3</sup>. The information is contrived simply to create a simple demonstration that makes the major points that need to be raised. Information is provided in this working prototype for 5 hospitals for 2 services for one point in time and can be visualized via this simple fact table<sup>4</sup>:

#	Reporting Entity [Axis]	Period [Axis]	City	Hospital	Services	Concept	Fact Value	Unit	Rounding	Parenthetical Explanations
1	WSHA (https://www.wsha.org/)	2021-01-01	Puyallup	Multicare Good Samaritan Hospital	Urinary Tract Infection	Standard Price	33581	USD	INF	
2	WSHA (https://www.wsha.org/)	2021-01-01	Federal Way	St Francis Community Hospital	Stroke	Standard Price	29446	USD	INF	
3	WSHA (https://www.wsha.org/)	2021-01-01	Tacoma	St Joseph Medical Center	Stroke	Standard Price	33948	USD	INF	
4	WSHA (https://www.wsha.org/)	2021-01-01	Tacoma	Tacoma General Allenmore Hospital	Stroke	Standard Price	37066	USD	INF	
5	WSHA (https://www.wsha.org/)	2021-01-01	Federal Way	St Francis Community Hospital	Urinary Tract Infection	Standard Price	29446	USD	INF	
6	WSHA (https://www.wsha.org/)	2021-01-01	Tacoma	St Joseph Medical Center	Urinary Tract Infection	Standard Price	33948	USD	INF	
7	WSHA (https://www.wsha.org/)	2021-01-01	Lakewood	St Clare Hospital	Urinary Tract Infection	Standard Price	30818	USD	INF	
8	WSHA (https://www.wsha.org/)	2021-01-01	Tacoma	Tacoma General Allenmore Hospital	Urinary Tract Infection	Standard Price	1111	USD	INF	
9	WSHA (https://www.wsha.org/)	2021-01-01	Lakewood	St Clare Hospital	Stroke	Standard Price	30818	USD	INF	
10	WSHA (https://www.wsha.org/)	2021-01-01	Puyallup	Multicare Good Samaritan Hospital	Stroke	Standard Price	33581	USD	INF	

For this prototype, only 10 facts are provided (2 services times 5 hospitals) but could have been provided for any number of services for any number of hospitals. Only standard prices were provided but any other set of pricing information could have been created.

To begin, a standard model of the information was created using XBRL. The following is a human readable version of the model that was generated using off-the-shelf software for working with XBRL<sup>5</sup>:

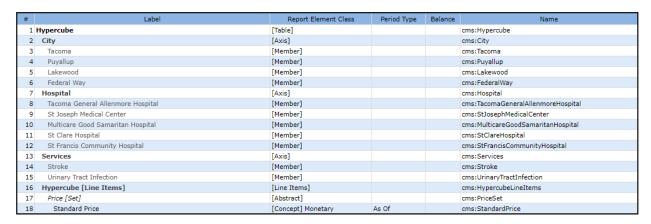
<sup>&</sup>lt;sup>1</sup> Hospital Price Transparency XBRL Prototype, <a href="http://xbrl.squarespace.com/journal/2021/1/20/hospital-price-transparency-rule.html">http://xbrl.squarespace.com/journal/2021/1/20/hospital-price-transparency-rule.html</a>

<sup>&</sup>lt;sup>2</sup> XBRL.Squarespace.com blog, http://xbrl.squarespace.com/

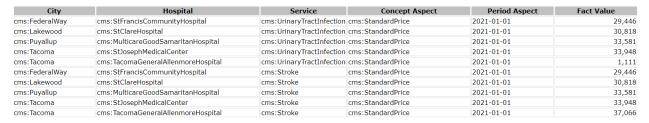
<sup>&</sup>lt;sup>3</sup> Hospital Sticker Shock, Washington Health Alliance, <a href="https://wahealthalliance.org/wp-content/uploads/2014/10/hospital-sticker-shock-report-standard.pdf">https://wahealthalliance.org/wp-content/uploads/2014/10/hospital-sticker-shock-report-standard.pdf</a>

<sup>&</sup>lt;sup>4</sup> Prototype Information, Fact Table, <a href="http://xbrlsite.azurewebsites.net/2021/cma/evidence-package/contents/index.html#NetworkFacts-StandardPrices-cms">http://xbrlsite.azurewebsites.net/2021/cma/evidence-package/contents/index.html#NetworkFacts-StandardPrices-cms</a> Hypercube.html

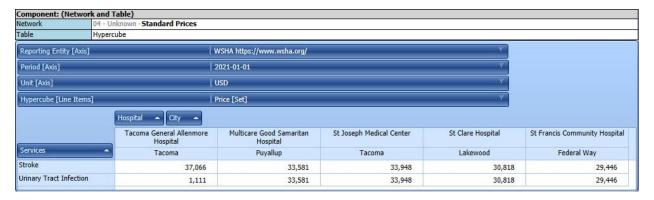
<sup>&</sup>lt;sup>5</sup> Model, http://xbrlsite.azurewebsites.net/2021/cma/evidence-package/contents/index.html#NetworkStructure-StandardPrices-cms\_Hypercube.html



That model was used to create facts that are then reported in an XBRL instance. A human readable version of the XBRL instance with no formatting other than creating a tabular fact table is provided<sup>6</sup>:



Those same facts can be rendered in a better format for humans within off-the-shelf software applications for working with XBRL: (effectively something like a pivot table)

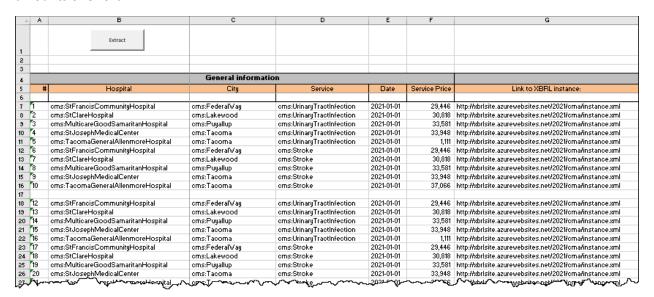


Below is the same information pivoted:

<sup>&</sup>lt;sup>6</sup> Inline XBRL, <a href="http://xbrlsite.azurewebsites.net/2021/cma/instance-generated.html">http://xbrlsite.azurewebsites.net/2021/cma/instance-generated.html</a>



Information can be extracted from the raw XBRL instance or the Inline XBRL instance with similar amounts of effort<sup>7</sup>:



The Excel code was crated by in VBA by a CPA with only minimal programming skills. Clearly those with more programming skills can provide additional functionality. The Excel application, for this prototype, extracts information from the same file 6 times; but it just as well could have extracted information from 6,000 separate files and reorganized the information as deemed necessary.

All the files for this prototype are provided<sup>8</sup>.

The XBRL technical format is powerful, flexible, standard, and could very easily meet the needs for the Hospital Price Transparency Rule.

<sup>&</sup>lt;sup>7</sup> Excel-based Information Extraction tool, <a href="http://xbrlsite.azurewebsites.net/2021/cma/Extraction-cms.zip">http://xbrlsite.azurewebsites.net/2021/cma/Extraction-cms.zip</a>

<sup>&</sup>lt;sup>8</sup> All files for prototype, <a href="http://xbrlsite.azurewebsites.net/2021/cma/">http://xbrlsite.azurewebsites.net/2021/cma/</a>