

## Study of Professional Episode Attribution Thresholds

### Descriptive comments to accompanying exhibits

Page 2: The data table addresses the following question: What happens to the amount of data left for analysis when a single aspect of an attribution rule is altered? That aspect is the minimum portion of total professional dollars in the episode required to be delivered by the attributed clinician. Each column in the table, from 0% to 100% in increments of 10%, represents a separate application of the attribution rule. A host of descriptive statistics appear in each column to characterize the retained data; that is, the episodic and attributed data that would be available for clinician analysis.

Page 3: One important finding is that very little data is lost as the threshold changes from 0% to 30%, whether we consider episode volume, number of attributed clinicians, or total dollars. In this large sample of commercial claims, more than 88% of all episodes featured only one clinician eligible to be the attributed clinician (see the 100% column in the data table). This seems to suggest that the episode grouping tool is effective at breaking apart a whole patient's constellation of conditions and diseases into discrete, individually-attributable events.

Page 4: This chart, derived from figures in the data table, attempts to show both the scale and composition of retained dollars under various attribution scenarios. The declining height of each stacked column (left-to-right) indicates the rate of data loss in dollars as the minimum threshold is increased. The percentages within each stacked column segment give the share of service dollars associated with the attributed clinician, other clinicians, and all providers. Again, the percentage splits and total height are relatively stable across the 0% to 30% threshold range. Note that some episodes have no professional involvement, and are impossible to attribute (leftmost column).

Page 5: This chart presents essentially the same information from the prior chart, but in "per episode" terms.

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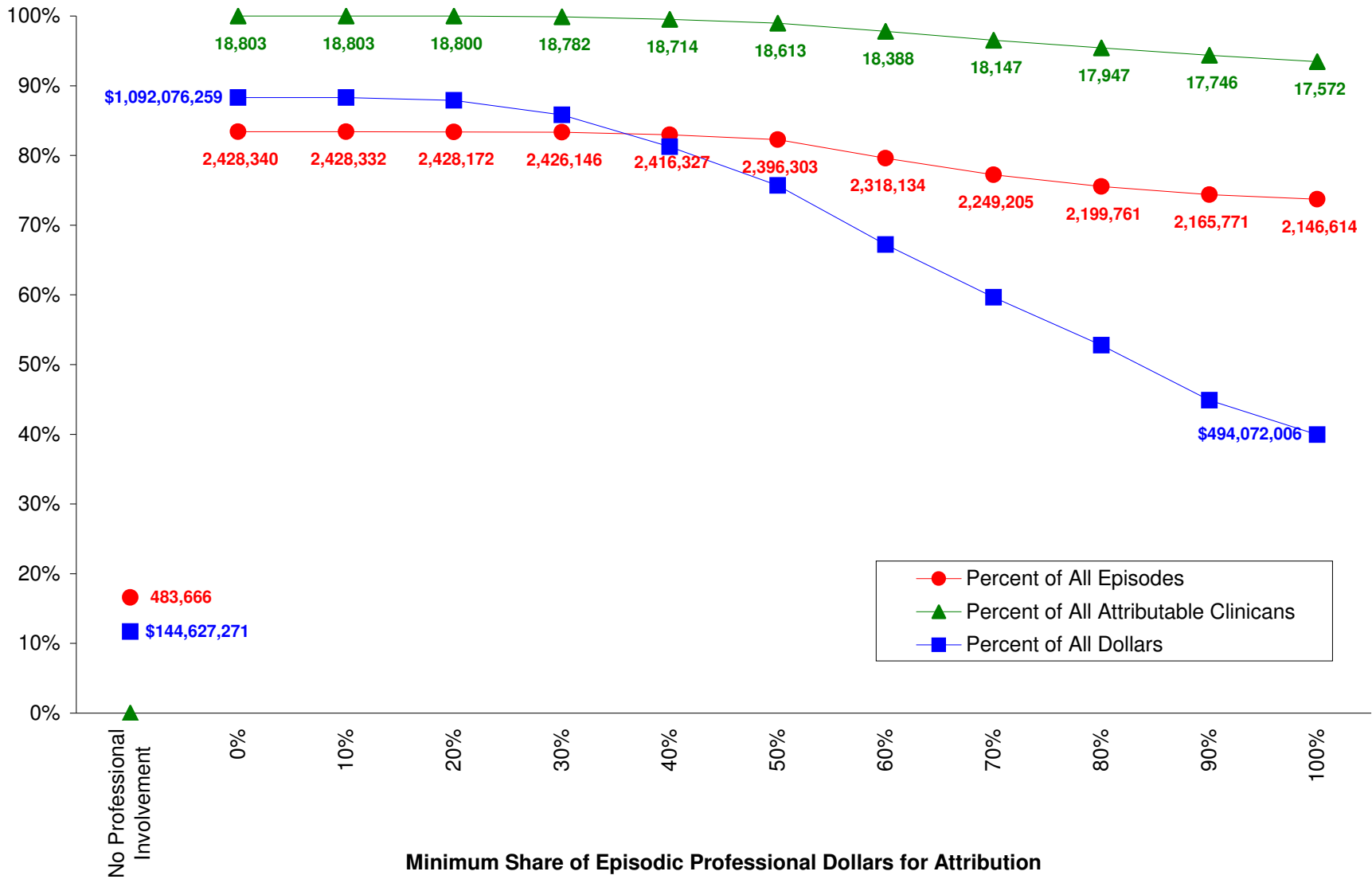
Attribution Rule: Assign each episode exclusively to the clinician dominating total professional dollars, subject to a minimum threshold.  
 Note: episodes with "ties" between clinicians, and those without any clinicians exceeding the minimum threshold are deemed "unattributable".

All dollars are allowed (paid plus patient cost-sharing)  
 Commercial book-of-business for 2-year period ending September 2002  
 All complete episodes examined, including "outlier" episodes

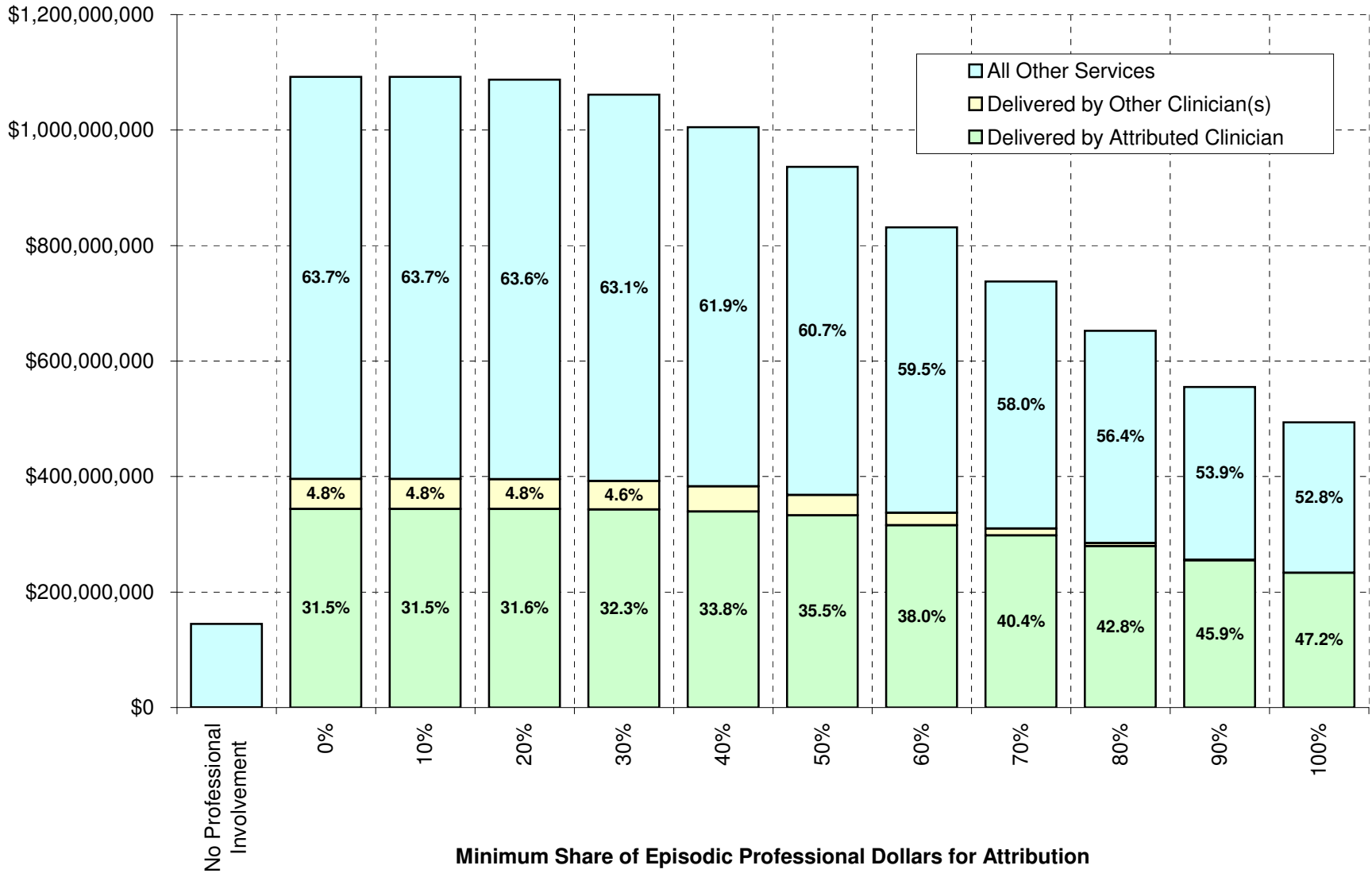
**Minimum Required Portion of Total Professional Dollars for Episode Attribution to a Single Clinician**

	No Professional Involvement	Minimum Required Portion of Total Professional Dollars for Episode Attribution to a Single Clinician										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Number of Episodes	483,666	2,428,340	2,428,332	2,428,172	2,426,146	2,416,327	2,396,303	2,318,134	2,249,205	2,199,761	2,165,771	2,146,614
Percent of All Episodes	16.6%	83.4%	83.4%	83.4%	83.3%	83.0%	82.3%	79.6%	77.2%	75.5%	74.4%	73.7%
Percent of All Attributable Episodes	NA	100.0%	100.0%	100.0%	99.9%	99.5%	98.7%	95.5%	92.6%	90.6%	89.2%	88.4%
Number of Attributed Clinicians	-	18,803	18,803	18,800	18,782	18,714	18,613	18,388	18,147	17,947	17,746	17,572
Percent of All Attributable Clinicians	0.0%	100.0%	100.0%	100.0%	99.9%	99.5%	99.0%	97.8%	96.5%	95.4%	94.4%	93.5%
Total Dollars	\$144,627,271	\$1,092,076,259	\$1,091,959,059	\$1,087,168,666	\$1,061,333,709	\$1,004,957,183	\$936,251,484	\$831,408,799	\$737,800,226	\$652,479,960	\$555,274,480	\$494,072,006
Percent of All Dollars	11.7%	88.3%	88.3%	87.9%	85.8%	81.3%	75.7%	67.2%	59.7%	52.8%	44.9%	40.0%
Percent of All Attributable Dollars	NA	100.0%	100.0%	99.6%	97.2%	92.0%	85.7%	76.1%	67.6%	59.7%	50.8%	45.2%
Breakdown of Dollars:												
Delivered by Attributed Clinician	\$0	\$343,701,704	\$343,699,079	\$343,622,588	\$342,758,215	\$339,497,546	\$332,700,631	\$315,736,430	\$298,136,585	\$279,326,943	\$254,806,201	\$233,333,184
Delivered by Other Clinician(s)	\$0	\$52,177,258	\$52,147,704	\$51,764,495	\$49,328,311	\$43,433,925	\$35,237,860	\$21,318,177	\$11,750,246	\$5,467,683	\$1,139,487	\$0
All Other Services	\$144,627,271	\$696,197,297	\$696,112,275	\$691,781,583	\$669,247,183	\$622,025,711	\$568,312,993	\$494,354,192	\$427,913,395	\$367,685,334	\$299,328,791	\$260,738,822
Percent Breakdown of Dollars:												
Delivered by Attributed Clinician	0.0%	31.5%	31.5%	31.6%	32.3%	33.8%	35.5%	38.0%	40.4%	42.8%	45.9%	47.2%
Delivered by Other Clinician(s)	0.0%	4.8%	4.8%	4.8%	4.6%	4.3%	3.8%	2.6%	1.6%	0.8%	0.2%	0.0%
All Other Services	100.0%	63.7%	63.7%	63.6%	63.1%	61.9%	60.7%	59.5%	58.0%	56.4%	53.9%	52.8%
Dollars per Episode												
Attributed Episodes	\$299	\$450	\$450	\$448	\$437	\$416	\$391	\$359	\$328	\$297	\$256	\$230
Clinician-Delivered Services	\$0	\$163	\$163	\$163	\$162	\$158	\$154	\$145	\$138	\$129	\$118	\$109
All Other Services	\$299	\$287	\$287	\$285	\$276	\$257	\$237	\$213	\$190	\$167	\$138	\$121
Percent Breakdown of Dollars/Episode:												
Attributed Episode Count	-	2,428,340	2,428,332	2,428,172	2,426,146	2,416,327	2,396,303	2,318,134	2,249,205	2,199,761	2,165,771	2,146,614
Clinician-Delivered Services	0.0%	36.3%	36.3%	36.4%	36.9%	38.1%	39.3%	40.5%	42.0%	43.6%	46.1%	47.2%
All Other Services	100.0%	63.7%	63.7%	63.6%	63.1%	61.9%	60.7%	59.5%	58.0%	56.4%	53.9%	52.8%
Dollars per Episode												
Unattributed Episodes	NA	NA	\$14,650	\$29,940	\$12,752	\$5,742	\$3,431	\$1,341	\$1,358	\$1,726	\$2,860	\$3,195
Clinician-Delivered Services	NA	NA	\$4,022	\$2,873	\$1,629	\$932	\$749	\$395	\$394	\$507	\$849	\$1,180
All Other Services	NA	NA	\$10,628	\$27,067	\$11,123	\$4,809	\$2,682	\$946	\$964	\$1,218	\$2,011	\$2,014
Percent Breakdown of Dollars/Episode:												
Unattributed Episode Count	NA	NA	8	160	2,026	9,819	20,024	78,169	68,929	49,444	33,990	19,157
Clinician-Delivered Services	NA	NA	27.5%	9.6%	12.8%	16.2%	21.8%	29.5%	29.0%	29.4%	29.7%	36.9%
All Other Services	NA	NA	72.5%	90.4%	87.2%	83.8%	78.2%	70.5%	71.0%	70.6%	70.3%	63.1%

### Comparative Data Retention under Varying Attribution Threshold Scenarios



### Comparative Service Composition under Varying Attribution Threshold Scenarios (Total Dollars Across Episodes)



### Comparative Service Composition under Varying Attribution Threshold Scenarios (Dollars Per Episode)

