Section IX
Trend Rate Assumptions

The projection model uses utilization and cost trends to project the modeled services forward from the base year of FY 2002. Currently, these trend assumptions extend through FY 2025. The estimated trend rates vary by health care service category, and are the result of historical trend rate analysis and discussions with VA's and CACI/Milliman's experts. The historical trend data was reported from 1985 through 2003, allowing for long-term trend pattern observations. This historical trend data is also used to project utilization and costs for Milliman's *Health Cost Guidelines*™ (HCGs). In addition, the Data Resources Inc. (DRI) published trend rates for 1997 through 2004 were also considered. The DRI trend rates for calendar year 2001 - 2004 are four-quarter moving average percent changes in the CMS prospective payment system (PPS) hospital input price index using DRI-WEFA forecast assumptions. They reflect the changes in the cost components for hospitals.

Medical trend assumptions will vary significantly depending on factors that are often unique to each situation. These factors tend to be dynamic, requiring continuous analysis and subjective evaluation. As a result, the historical trend data was analyzed by a workgroup of experts from both Milliman USA and VA. The success and contributions of this workgroup will increase as communication and understanding of the role of the trend factors within the model is enhanced. To this end, the following discussion identifies key factors in establishing trend assumptions.

There are many considerations that should be evaluated when establishing medical trend assumptions. Trends must be estimated based upon knowledge of historical trend patterns and identification of factors that may affect future trends. In many instances, these factors require a subjective evaluation of their potential impact. Out-year testing of the trend assumptions used in the model is discussed later in this section. Key trend considerations include the following:

Trend Behavior: Trends in claim costs change in direction and magnitude over time, frequently in a cyclical pattern. These trend patterns may be similar to those exhibited by the Medical Care Services component of the Consumer Price Index (CPI). While the trend experience in a particular situation may vary significantly from that of the overall health care environment, in most situations trend patterns generally tend to behave in a manner similar to aggregate medical

care trends. As a national health care system, VA could experience trends similar to the overall health care environment.

Experience Analysis: It can be helpful to measure actual experience trends by relating claims to units of exposure, such as enrollment. However, the veteran enrollment population has experienced significant growth as well as Priority Level mix changes over the past several years. This situation, as well as historical health care access changes could make it difficult to utilize national VA experience for trend estimation.

Secular Trend: Within the HCGs secular trend is defined as the percentage change in average claim costs resulting from only those factors that affect a static population with a fixed set of benefits. This type of trend is what the trend factors implemented in the VA Enrollee Health Care Projection Model are meant to account for. It is worth noting that the actual measured trend for a population that is not static, such as the VA enrollee population, may also reflect changes in benefits or mix of business, age differences, or other factors that do not apply equally to other populations and are not considered to be components of secular trend. This is why the model incorporates specific adjustments for age/gender, benefit coverage, area adjustments, morbidity, reliance, and degree of health care management. When making considerations for secular trends, it is important to make sure that any factors that are incorporated are not already accounted for in these other adjustments.

The two major components of secular trend are (1) changes in the utilization of services, and (2) changes in the average cost per service. Secular trend assumptions may be established separately by type of service (as is done for VA modeling) or on an aggregate basis for an overall plan of benefits. When defining utilization trends, it is important to specify the units of service so that utilization can be measured on a consistent basis with the average cost per service. These steps are taken in the utilization trend sources considered for the HCGs and presented to VA. Some factors that may affect utilization patterns include:

- Evolutionary changes in medical care practice.
- Epidemics or catastrophes may cause sharp temporary increases in utilization.
- Utilization may tend to follow seasonal patterns.
- Trends in malpractice suits or changes in institutional policy may affect patterns of defensive medical practice.

The major factor that affects average cost is inflation. For health care services, appropriate pieces of the CPI are very useful in assessing historical inflation trends. Other factors affecting health care average costs include:

- Medical practice patterns may lead to changes in the mix or intensity of services, such as an increased number of tests per average hospital stay or shifts toward more specialized physician care. In addition, changes in practice regarding assignment of procedure codes may produce a change in the mix of services.
- Charge levels of institutions frequently reflect trends in operating costs, including nursing wage levels or energy costs.
- The increased use of expensive modern technology, newly developed drugs, or organ transplants leads to a higher volume of high-cost services, perhaps without any corresponding reduction in other services.

The trend considerations and information available is helpful for analyzing historical trends and also in evaluating possible future trend patterns. While this information can prove useful in providing a proper framework for establishing trend assumptions, it must be emphasized that no purely objective approach to establishing trend assumptions is possible. Experience, judgment and evaluation of risks, combined with analytical techniques, should be part of the process of establishing trend assumptions.

The attached trend exhibit (Exhibit IX-1) contains the historical trend data, the trend assumptions used for FY03 and Preliminary FY04 ELDA, and, finally, the trend assumptions for Final FY04 ELDA are presented. All of the trend rates are annual trend rates. For example, a utilization trend rate of 3% for FY 2004 means that utilization is expected to increase 3% in FY 2003 over FY 2002 levels. The historical trend data was supplied to VA experts during discussions between VA and CACI/Milliman in order to provide a starting point for setting the current trend rate assumptions. The trend assumptions for fiscal years between the dictated years are linearly extrapolated between the fiscal years with defined trend rates. The majority of the trend assumption changes for the Final FY04 ELDA were made to FY 2005. These changes are a result of changes to the historical trend rate measures used to establish the future trend patterns. In general, there are very few changes to the trend assumptions since not much occurred in the health care industry over the past year to cause much deviation from the 20-year assumptions developed for last year's ELDA effort.

In general, the cost and intensity trends are considered together, rather than as separate components. These composite trends are located at the bottom of the trend exhibit- Exhibit IX-1. It should be noted that the historical intensity trend factors reflect changes in provider discounts and may not be applicable when establishing trend rates for VA. The aggregated intensity trends reflect both changes in the complexity of care provided as well as changes in provider discounts. For example, regulatory changes in Medicare reimbursements (DRGs and RBRVS fee schedule) can significantly affect short-term trends and long-term tendencies in the cost and use of medical services in the both the over and under age 65 populations. This is often evidenced by large intensity trend changes, or changes that move a direction known to be opposite of complexity of care trends. To the extent that VA is not affected by provider discount changes, this should be considered when analyzing historical intensity trends for VA projections.

The proposed trend rates for the Final FY04 ELDA were run through the VA Enrollee Health Care Projection Model, holding the FY 2002 enrollment and DoCM constant to test the reasonableness of the proposed trend rates. The attached Exhibit IX-2 "Trend Reasonableness Checks" displays the results of this analysis. Since there were very few changes to the FY 2003 trend rate assumptions, the model produced reasonable per member per month (PMPM) relationships by major category of care.

After removing the impacts of Special VA Services and LTC, the PMPM relationships look reasonable from 2002 to 2022. LTC and the trends associated with Home Health services were removed from the analysis since the levels of these services and their unit costs are dictated by VA policy. It is expected that some inpatient care will be moved to an outpatient and/or home setting in the future and that some ambulatory services will be replaced with prescription-based therapies. This can be seen in the PMPM distributions by major category of care (excluding Special VA Services and LTC). The PMPM percentage of care that is expected to be attributed to inpatient acute care drops from 39% to 28% over the 20-year period ending with FY 2022. On the other hand, the percentage of care attributed to prescription drugs increases from 17% to 27% over the same period. Ambulatory and Other services represent about the same proportion of the health care dollar over the 20-year period. All in all, these proposed trend rates produced very reasonable results and thus were used in the final FY04 ELDA projection model. The remainder of this section provides a detailed discussion of each trend rate and the decisions resulting from the trend rate discussions with VA.

IP Cost & Intensity Trend Rates (1 & 5)

The historical measure that is most appropriate to review for establishing IP cost trends for VA is the DRI. As indicated above, this measures the changes in underlying hospital costs. It is also appropriate to add an allowance for technology advances. Studies have shown that technology advances might add between 0.5% and 2.0% per year to hospital cost increases. A factor of 1.1% was added to the DRI forecasted trend rate for 2004 of 3.4% to produce an estimate of 4.5%. The assumed trend rates for the other projection years are not changed from those developed for the last ELDA.

Physician Cost & Intensity Trends (2 & 6)

The most recent historical trend rates were revised and do not indicate the slightly higher trend rate that was assumed for 2005 during last year's ELDA modeling. This year a 3.75% rate was assumed for the cost trend, which is very consistent with the last 9 years or so of CPI trends. This combined with an intensity trend rate of 0.5% (same as last year) gives an annual trend rate assumption of 4.27% for physician costs.

Prescription Drugs (3 & 7)

Historical drug cost trends were in the double digits for the late 80's and early 90's. Since then they have been mostly in the high single digit range. The last 5 years have produced near 10% annual trend rates, with a slight decline each year. These cost trends are before the effects of leverage for fixed copays. The higher the copay, the higher the leverage. These can easily add 2% to 5% or more to the paid cost per script. The 2002 historical trend rates were also increased over last year's estimate for 2002. Consequently, the 6.86% combined cost and intensity trend rate assumption for 2005 estimated last year was increased to 7.64% to fit more in line with recent trends. Specifically, the cost trend rate was increased from 3.75% to 4.00% and the intensity trend rate was increased from 3.00% to 3.50%.

OP Hospital & Other Cost & Intensity Trends (4 & 6)

Once again, the DRI is a useful forecasting measure since it measures hospital cost increases. The technology component, however, is greater for OP hospital than it is for IP. It is more

appropriate to add 2% to 3% for technology trends on the outpatient side. Therefore, a cost trend rate of 6.25% for 2005 was assumed (3.4% DRI plus 2.85% for technology).

Physician (surgery) Utilization Trends

Surgical physician historical utilization trends were higher than measured last year. The historical annual trends have hovered around the 3.0% mark for several years. In light of these changes, the 2005 assumed trend rate was increased from 2.0% to 2.5%.

Physician (office visits and other services - non-surgical) Utilization Trends

Physician historical utilization trends were higher than measured last year. The historical annual trends have hovered around the 3.0% mark for several years. Over the last 19 years the average annual trend rate was around 1.0%. The actual annual trend rates varied from -3.0% to +4.5%. The last five years have seen annual trend rates from 2.0% to 4.5%. If the last five years of trend are ignored, then the average annual trend rate for the previous 14 years was around 0.0%. In light of these recent changes, the 2005 assumed trend rate was increased from 0.0% to 1.0%, the 2010 assumed trend rate was increased from 0.0% to 0.5% and the 2015 through 2025 assumed rates left at 0.0%.

Exhibit IX-1

Annual Trend Rates for FY04 Preliminary and Final VA Model

			Historical Trends Used for HCG Update																			Used For FY03 ELDA & Preliminary FY04 ELDA					Proposed For Final FY04 ELDA						Comments
			1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015	2020	2025	2004	2005	2010	2015	2020	2025	
Services Receiving Trend		Cost Trend Factor Source																															
		DRI Trend (informational)													2.40%	2.30%	2.90%	2.80%	4.40%	3.70%	3.90%												3.4% provided for 2004
LTC & Maternity Per Diems	1	Hosp IP Room CPI	7.40%	5.40%	6.60%	7.80%	11.20%	10.90%	10.60%	9.20%	8.60%	7.10%	5.50%	4.80%	3.50%	2.20%	3.20%	4.50%	6.10%	7.00%	7.50%	4.00%	3.50%	3.50%	3.50%	3.50%	4.50%	4.50%	3.50%	3.50%	3.50%	3.50%	DRI plus 1% for technology trends
Phys. Mat. Unit Costs	2	Physician Surg IP CPI	6.00%	6.70%	7.50%	7.20%	7.40%	7.10%	7.00%	5.90%	6.10%	5.00%	4.40%	4.20%	3.30%	2.90%	3.30%	3.20%	3.80%	3.00%	3.80%	4.25%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	2002 & 2003 trends revised since previous ELDA
see below	3	Drug CPI	9.70%	8.90%	8.30%	8.00%	8.00%	9.60%	10.00%	9.40%	5.10%	3.40%	2.70%	2.60%	3.20%	2.40%	5.20%	5.40%	4.40%	5.80%	3.90%	3.75%	2.50%	2.00%	2.00%	2.00%	4.00%	4.00%	2.50%	2.00%	2.00%	2.00%	2002 & 2003 trends revised since previous ELDA
see below	4	OP Services CPI	7.80%	5.80%	6.50%	7.50%	9.80%	11.70%	11.00%	10.20%	9.90%	7.00%	5.50%	5.00%	4.80%	3.90%	4.60%	6.30%	7.10%	7.70%	8.10%	5.25%	4.50%	4.00%	3.75%	3.75%	6.25%	6.25%	4.50%	4.00%	3.75%	3.75%	DRI plus 2 to 3% for technology trends
		Intensity Trend Factor Source																															
see below	5	IP Int/Day (Anc only)	-3.90%	4.10%	6.50%	6.00%	-0.40%	-1.80%	0.50%	0.70%	-1.20%	-3.90%	-8.80%	-11.10%	-9.60%	-7.70%	-2.80%	-3.90%	-2.50%	-1.90%	-4.40%	0.00%	0.50%	0.50%	0.50%	0.50%	0.00%	0.00%	0.50%	0.50%	0.50%	0.50%	Consider IP Cost and Intensity Trends Combined
see below	6	OP Int/Visit	5.00%	4.30%	1.80%	2.80%	2.70%	-0.80%	1.20%	0.20%	-3.20%	-3.40%	-3.90%	-1.90%	-2.30%	0.50%	0.90%	1.00%	2.60%	2.50%	0.50%	0.50%	0.25%	0.25%	0.25%	0.25%	0.50%	0.50%	0.25%	0.25%	0.25%	0.25%	Consider OP Cost and Intensity Trends Combined
see below	7	Drugs (Int)	3.00%	2.30%	3.90%	3.90%	4.50%	4.40%	2.50%	2.90%	1.30%	1.20%	1.10%	5.00%	4.30%	6.10%	2.00%	5.10%	5.30%	3.40%	5.10%	3.00%	2.50%	2.00%	2.00%	2.00%	3.75%	3.50%	2.50%	2.00%	2.00%	2.00%	2002 & 2003 trends revised since previous ELDA
		Utilization Trend Factor Source																															
IP Admits		Admissions (w/o Mat)	-6.10%	-3.60%	-2.40%	-1.90%	-3.00%	-2.00%	-3.90%	-2.80%	-3.20%	-0.80%	-0.10%	-1.50%	-1.40%	-0.90%	0.20%	0.00%	-0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
IP Days		Days/1000 (w/o Maternity)	-9.30%	-3.90%	-1.90%	-1.90%	-4.10%	-2.90%	-5.30%	-5.20%	-4.30%	-3.20%	-3.50%	-2.50%	-3.20%	-1.70%	0.80%	0.90%	1.20%	1.70%	0.90%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	0.00%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	
Maternity Days		Newborn Days	-1.40%	-3.30%	-1.80%	0.50%	0.20%	-3.40%	-5.90%	-3.90%	-7.20%	-9.40%	-8.40%	-3.70%	0.75%	0.95%	1.25%	1.30%	1.50%	1.60%	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Ambulatory Surgery & Anesthesia		Physician Est OP Surg	20.30%	23.60%	16.90%	11.50%	6.00%	5.40%	5.20%	4.90%	3.40%	5.20%	6.40%	3.50%	5.60%	4.80%	3.50%	2.30%	3.50%	3.00%	3.20%	2.00%	2.00%	1.50%	1.00%	1.00%	2.75%	2.50%	2.00%	1.50%	1.00%	1.00%	1999 - 2003 trends revised since previous ELDA
Office Visits and Misc Serv.		Physician IMS Office Visits	1.30%	3.30%	-1.70%	3.70%	0.40%	2.40%	-1.50%	-3.00%	2.40%	-2.30%	1.40%	-2.70%	0.90%	-2.60%	4.50%	2.90%	2.00%	2.50%	3.80%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	1.00%	0.50%	0.00%	0.00%	0.00%	1999 - 2003 trends revised since previous ELDA
Ambulatory Rad/Path & Other		Physician All Other OP Visits	4.50%	8.40%	8.80%	6.20%	4.90%	4.70%	6.30%	7.60%	6.10%	6.20%	11.30%	5.60%	7.80%	5.20%	2.50%	1.10%	2.50%	2.50%	2.60%	2.00%	1.50%	1.00%	1.00%	1.00%	2.00%	2.00%	1.50%	1.00%	1.00%	1.00%	
Rx Util		Drugs IMS NPA (Util)	0.30%	-0.10%	1.10%	1.40%	0.10%	-0.50%	-0.30%	1.10%	1.30%	2.10%	2.80%	3.40%	3.80%	3.10%	8.20%	5.80%	4.20%	3.00%	4.00%	3.00%	2.50%	2.00%	2.00%	2.00%	3.50%	3.00%	2.50%	2.00%	2.00%	2.00%	
Ambulatory ER		ER Visits	-0.90%	4.50%	3.00%	3.50%	1.90%	1.50%	0.10%	1.60%	1.60%	-1.10%	1.30%	-0.80%	-1.00%	-0.50%	0.90%	2.40%	6.20%	4.80%	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
PDN/HH/Amb/DME		Total OP Visits	1.40%	6.60%	6.10%	5.70%	3.40%	3.90%	4.10%	5.60%	4.90%	4.80%	8.90%	4.50%	5.90%	4.70%	4.70%	3.80%	8.30%	6.80%	2.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	
		Intensity and CostTrends																															
IP Per Diems		Trends 1 & 5	3.21%	9.72%	13.53%	14.27%	10.76%	8.90%	11.15%	9.96%	7.30%	2.92%	-3.78%	-6.83%	-6.44%	-5.67%	0.31%	0.42%	3.45%	4.97%	2.77%	4.00%	4.02%	4.02%	4.02%	4.02%	4.50%	4.50%	4.02%	4.02%	4.02%	4.02%	
Ambulatory Physician		Trends 2 & 6	11.30%	11.29%	9.43%	10.20%	10.30%	6.24%	8.28%	6.11%	2.70%	1.43%	0.33%	2.22%	0.92%	3.41%	4.23%	4.23%	6.50%	5.58%	4.32%	4.77%	4.01%	4.01%	4.01%	4.01%	4.27%	4.27%	4.01%	4.01%	4.01%	4.01%	
Rx Costs		Trends 3 & 7	12.99%	11.40%	12.52%	12.21%	12.86%	14.42%	12.75%	12.57%	6.47%	4.64%	3.83%	7.73%	7.64%	8.63%	7.30%	10.78%	9.93%	9.40%	9.20%	6.86%	5.06%	4.04%	4.04%	4.04%	7.90%	7.64%	5.06%	4.04%	4.04%	4.04%	
OP Fac/Gls/PDN/HH/Amb/DME Costs		Trends 4 & 6	13.19%	10.35%	8.42%	10.51%	12.76%	10.81%	12.33%	10.42%	6.38%	3.36%	1.39%	3.01%	2.39%	4.42%	5.54%	7.36%	9.88%	10.39%	8.64%	5.78%	4.76%	4.26%	4.01%	4.01%	6.78%	6.78%	4.76%	4.26%	4.01%	4.01%	

Exhibit IX–2

VA Enrollee Health Care Projection Model
FY04 Final ELDA Trend Factor Reasonableness Analysis

	Utilization			PMPM			Implied Annual
	2002	2012	2022	2002	2012	2022	PMPM Trend
Inpatient	620.6	604.1	574.7	$94.60	$137.61	$194.07	3.7%
LTC	1,949.9	1,431.0	1,427.9	$35.39	$31.41	$35.46	0.0%
Non-Acute IP	434.1	434.1	434.1	$10.86	$16.60	$23.40	3.9%
Ambulatory	17,230.0	19,717.2	20,788.1	$101.61	$186.45	$294.84	5.5%
Rx	29,760.5	38,592.4	47,182.4	$42.23	$104.56	$191.07	7.8%
PDN/HH	1,000.8	1,509.7	1,509.7	$3.42	$6.00	$8.79	4.8%
Other	180.1	223.1	272.0	$3.75	$8.34	$15.28	7.3%
Total	51,176.0	62,511.7	72,188.7	$291.85	$490.97	$762.91	4.9%

	PMPM Distribution			Implied Annual
	2002	2012	2022	Util. Trend
Inpatient	32.4%	28.0%	25.4%	-0.4%
LTC	12.1%	6.4%	4.6%	-1.5%
Non-Acute IP	3.7%	3.4%	3.1%	0.0%
Ambulatory	34.8%	38.0%	38.6%	0.9%
Rx	14.5%	21.3%	25.0%	2.3%
PDN/HH	1.2%	1.2%	1.2%	2.1%
Other	1.3%	1.7%	2.0%	2.1%
Total	100.0%	100.0%	100.0%	1.7%

	PMPM Distribution		
	2002	2012	2022
Inpatient	38.5%	31.1%	27.6%
Ambulatory	41.4%	42.1%	41.9%
Rx	17.2%	23.6%	27.1%
PDN/HH	1.4%	1.4%	1.2%
Other	1.5%	1.9%	2.2%
Total	100.0%	100.0%	100.0%

* Dictated by VA modeling and staff.