

**Trends in IVIG/SCIG  
Utilization by Primary  
Immune Deficiency (PID)  
Patients by Site of  
Service:  
2003-2010**

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# Trends in IVIG/SCIG Utilization by Primary Immune Deficiency (PID) Patients by Site of Service: 2003-2010

## Overview

The Plasma Protein Therapeutics Association (PPTA) engaged The Moran Company (TMC) to examine the trend in payments for intravenous and subcutaneous immune globulin (IVIG/SCIG) utilization by primary immune deficiency (PID) patients. This report presents our analysis and five main findings.

## Patient Selection

PID patients were identified from all Medicare 5% Physician, Outpatient, Inpatient, HHA, Hospice, DME and SNF Standard Analytical files using the list of ICD-9-CM diagnosis codes provided by PPTA (Appendix A). All Medicare fee-for-service (FFS) patients with at least one diagnosis of PID between 2001 and 2010 were included in our analysis. All IVIG/SCIG services (Appendix B) for PID patients were extracted to measure IVIG/SCIG utilization and payments. Additionally, we performed some data cleaning to remove spurious data from the analysis (Appendix C).

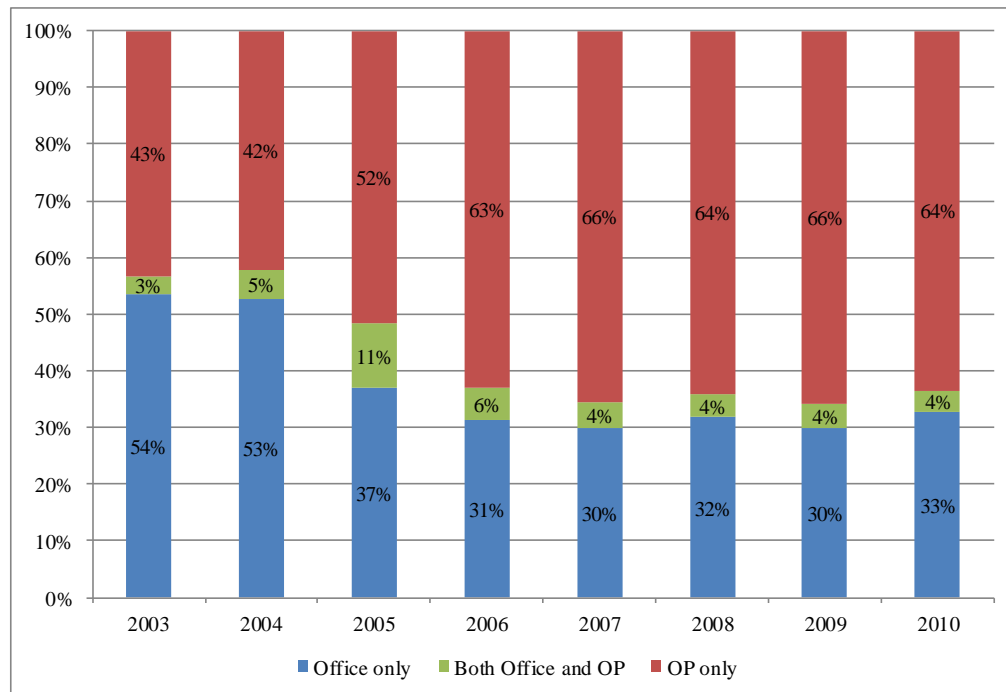
## Highlights of Our Findings

- In 2005, concurrent with the implementation of reimbursement changes for IVIG in Medicare Part B, the dominant site of service shifted from the physician office to outpatient hospital setting.
- Between 2003 and 2005, outpatient hospital IVIG payments grew sharply, while physician office payments declined. Growth in total IVIG payments in both settings stabilized in later years.
- After an initial spike in outpatient payment rates relative to office payment rates, both settings have shown similar growth in payments per gram of IVIG and payments per PID patient.
- Payments for pre-administration services and SCIG are negligible in physician office and outpatient settings.
- Most of the growth in utilization and payments in the DME setting is attributable to growth in SCIG use.

**Finding #1: In 2005 the dominant site of service shifted from the physician office to outpatient hospital setting, and then remained stable in years 2006-2010**

In 2005, patients shifted sharply from the physician office setting to the outpatient hospital setting. Before 2005, roughly 55% of PID patients received all their IVIG in the office setting. From 2006 onward, roughly 65% of PID patients received all their IVIG in the outpatient settings. See Figure 1.

**Figure 1.** Site of service that PID patients are receiving IVIG administrations



**Finding #2: Between 2003 and 2005, outpatient IVIG payments grew rapidly, while physician office payments declined. Growth in total IVIG payments in both settings stabilized in later years.**

Total outpatient hospital payments for IVIG grew 531% (average growth of 30% per year) between 2003 and 2010 (Figure 2a), in contrast to a relatively modest office payment growth of 36% (average growth of 5% per year). Most of this growth in outpatient hospital payments occurred between 2003 and 2005. Physician office IVIG payments declined in the same time period. This finding is consistent with the shift in care setting among beneficiaries observed in Figure 1. Beginning in 2006 (Figure 2b), the difference between the cumulative IVIG payment growth in the office (106%, averaging 20% per year) and outpatient hospital setting (101%, averaging 19% per year) is negligible.

We note that the shift in payments and preferred site of care coincided with 2004 and 2005 changes to Medicare reimbursement policy for Part B drugs billed in the physician office:

- In 2003, physician office Part B drug payments were 95% of average wholesale price (AWP).
- In 2004, physician office Part B drug payments were 85% of AWP.
- From 2005 onward, physician office Part B drug payments were 106% of average sales price (ASP).

**Finding #3: After an initial spike in outpatient payment rates relative to office payment rates, both settings have shown similar growth in payments per gram of IVIG and payments per PID patient.**

Figure 3 shows a marked increase in IVIG payment rates per gram and per beneficiary in the outpatient hospital setting with a corresponding decrease in payment rates in the physician office between 2004 and 2005, corresponding with statutory payment requirements in those settings for those years. As expected, outpatient hospital payment rates reduced in 2006 to the level of office payment rates. Beginning 2006, the rate of growth in payments per gram and per beneficiary is almost exactly the same in both settings. Overall, after the initial spike, payment rates per gram of IVIG are consistently about \$1 (about 2%) higher in the physician office than the outpatient setting, and payment rates per beneficiary are similar. This tracks with the reimbursement history across these settings.

Note that, despite lower rates of payment per gram and per beneficiary, the total number of beneficiaries receiving IVIG in the outpatient setting is higher and has increased at a much faster rate over time than in the physician office, especially after 2005 (Figure 3). This means that, as well as the reimbursement changes between 2003 and 2005, the rapid increase in outpatient payments was largely driven by growth in PID patients receiving IVIG in outpatient hospitals (which is also consistent with the pattern in Figure 1).

**Finding #4: Payments for pre-administration services and SCIG are negligible in physician office and outpatient settings.**

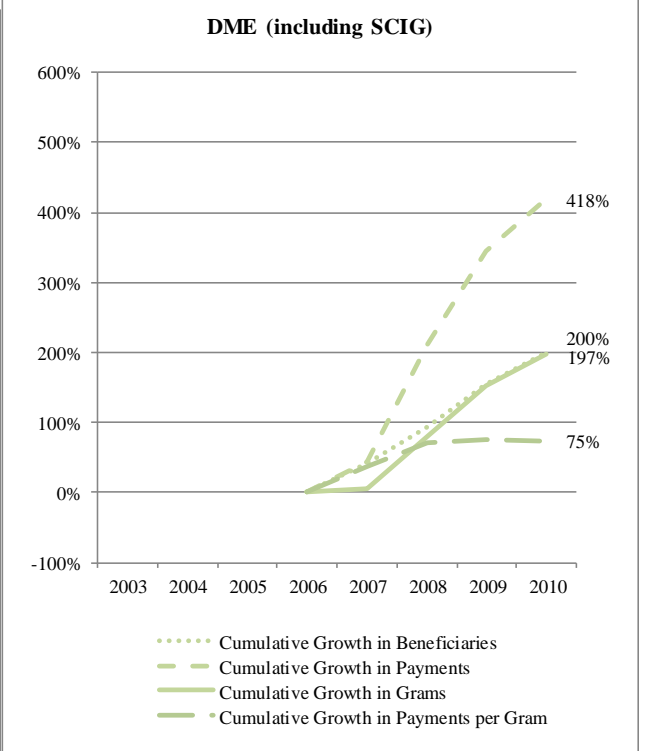
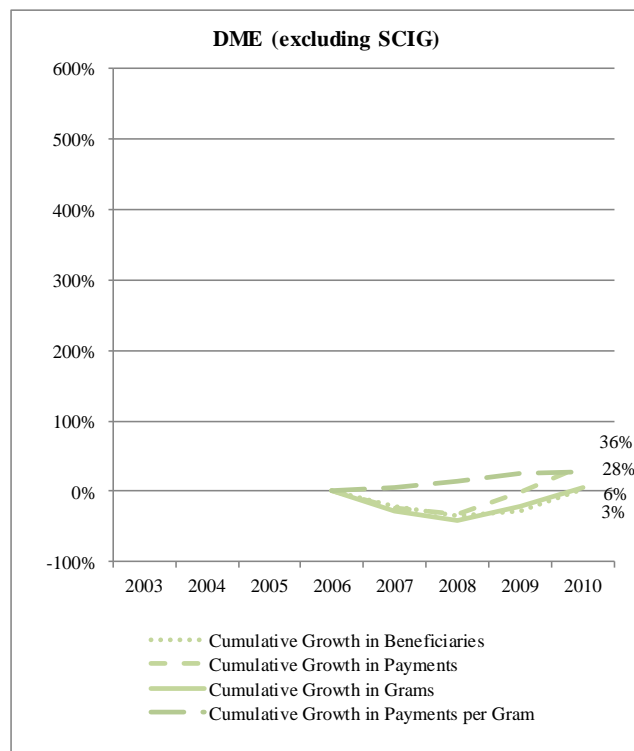
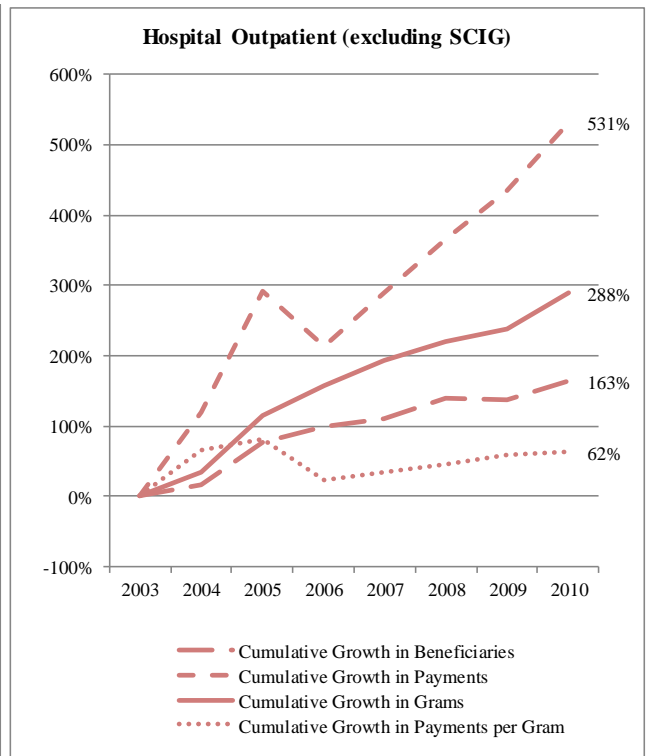
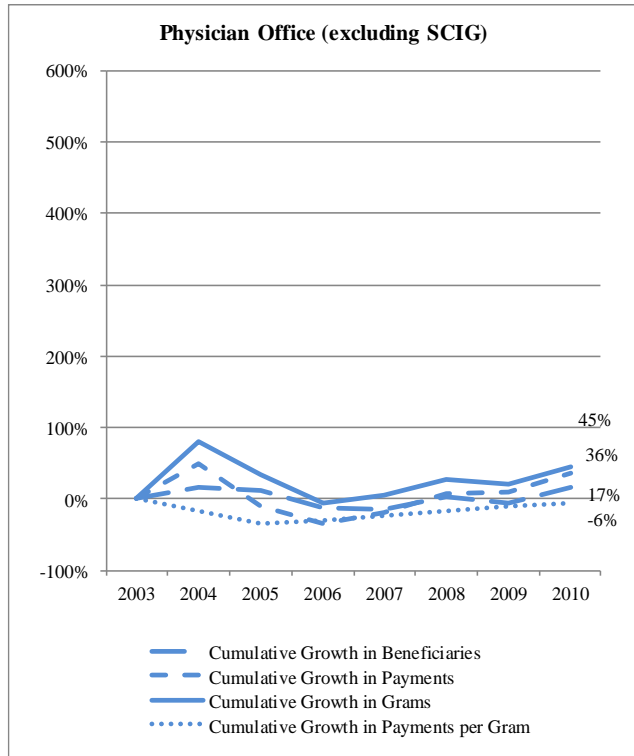
Figure 4 shows the distribution of payments by setting for IVIG, SCIG and pre-administration services. While the use of SCIG is dominant in the DME setting, its impact on physician office and outpatient payments is insignificant. Pre-administration services do not affect total payments significantly in any setting.

**Finding #5: Most of the growth in utilization and payments in DME setting is attributable to growth in SCIG use.**

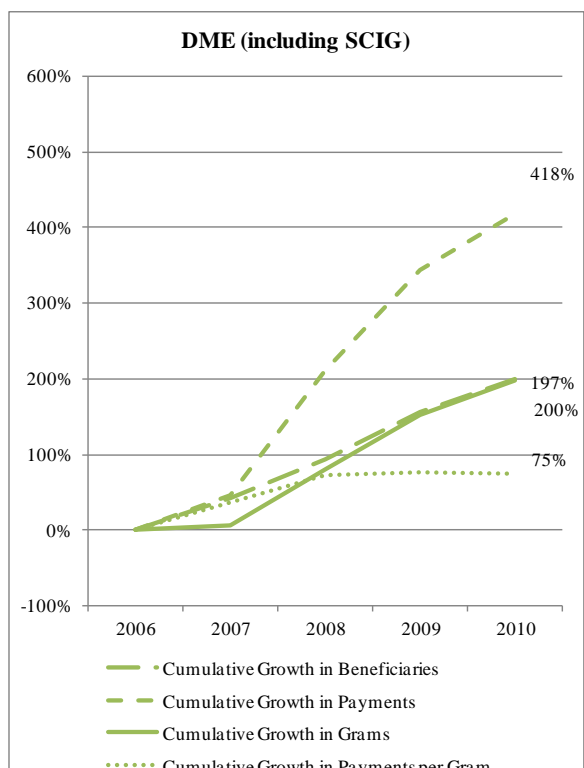
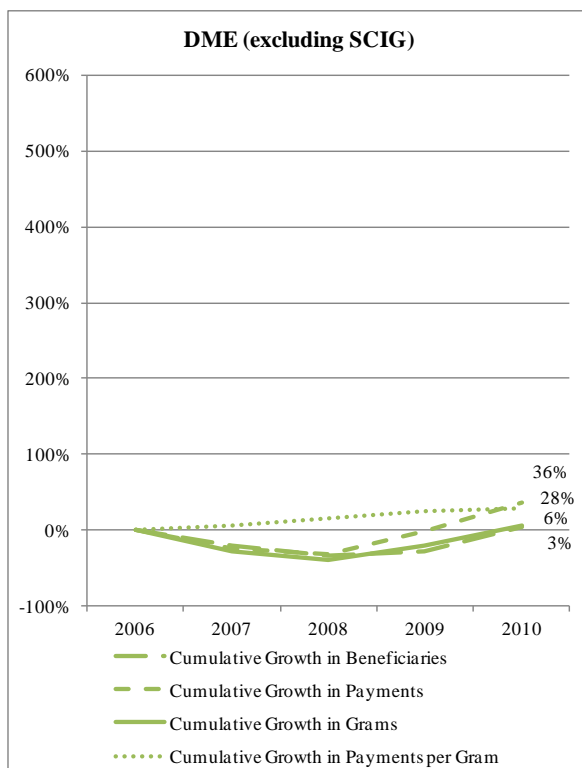
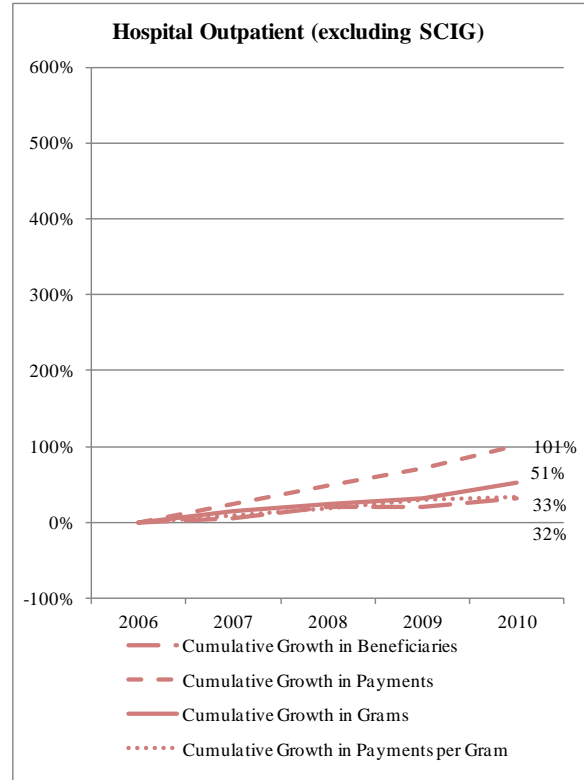
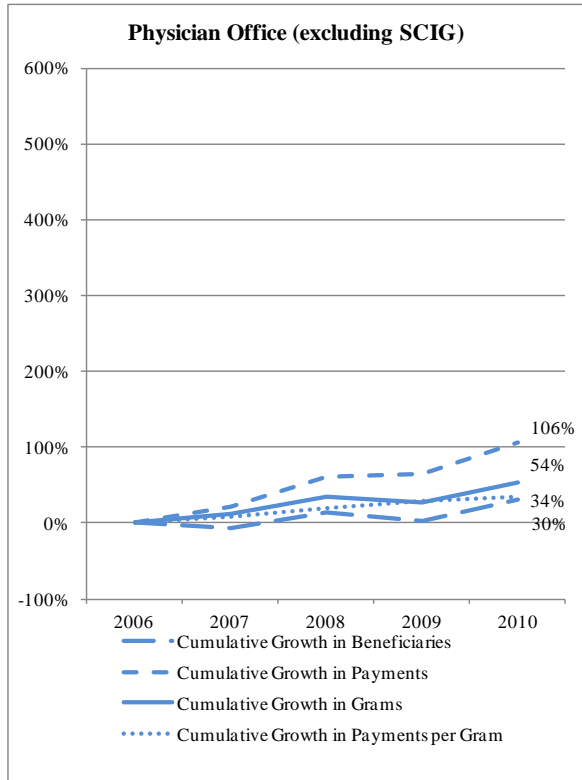
Overall IVIG/SCIG payments in DME grew 418% (average growth of 51% per year) between 2006 and 2010 (Figure 2b). A large proportion of this growth can be accounted for by the introduction of SCIG in 2007 and consequent increases in total payments for SCIG (Figure 4). When only IVIG payments are considered, the growth is relatively modest (36%; averaging 8% per year).

Utilization of DME services also increased, with most of the growth occurring due to increased use of SCIG. IVIG use decreased significantly after the launch of SCIG, and has since then remained secondary to SCIG in the DME setting (Figure 5).

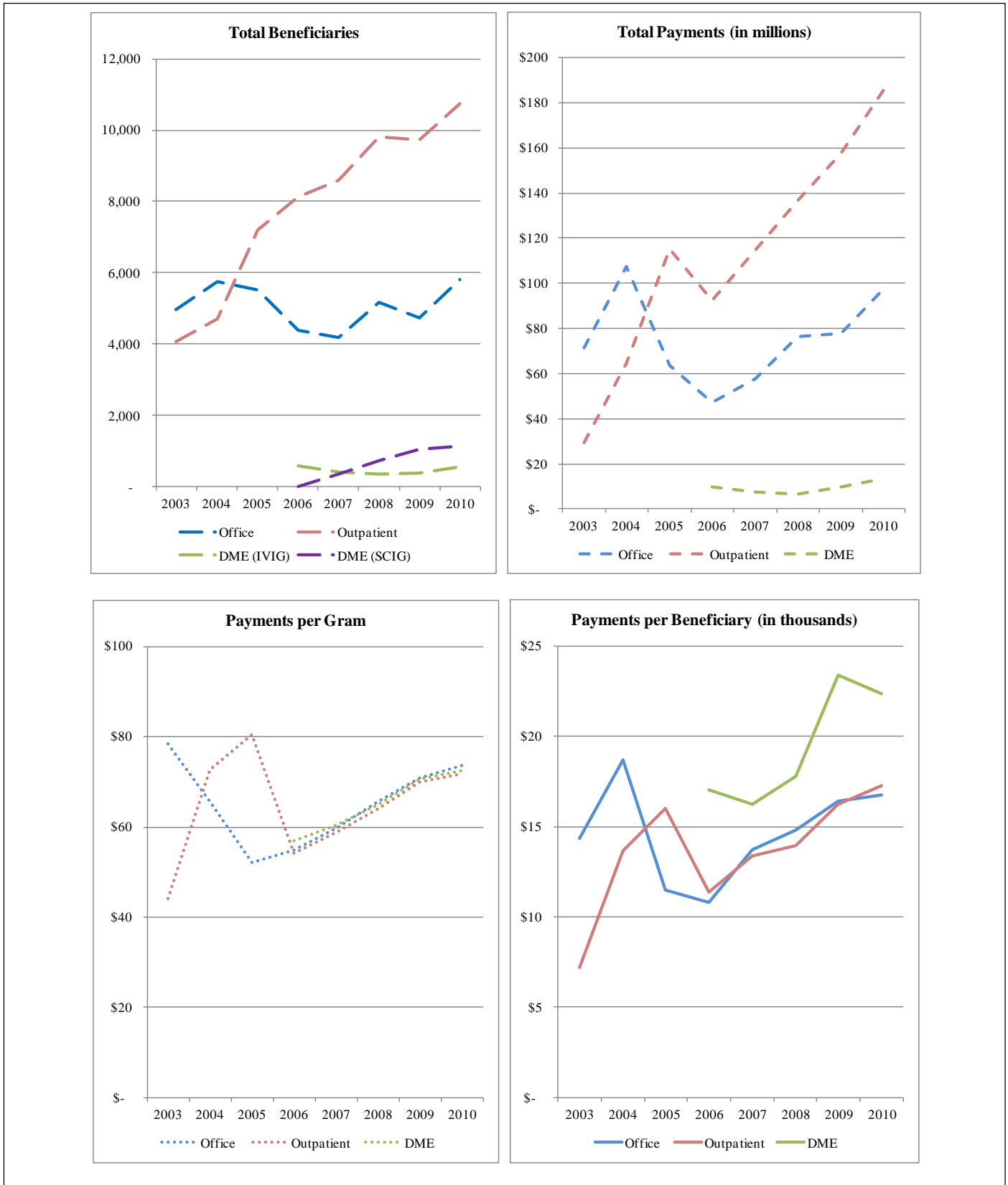
**Figure 2a.** Cumulative 2003-2010 growth in beneficiaries, payments, grams, and payments per gram of IVIG, by setting



**Figure 2b.** Cumulative 2006-2010 growth in beneficiaries, payments, grams, and payments per gram of IVIG, by setting

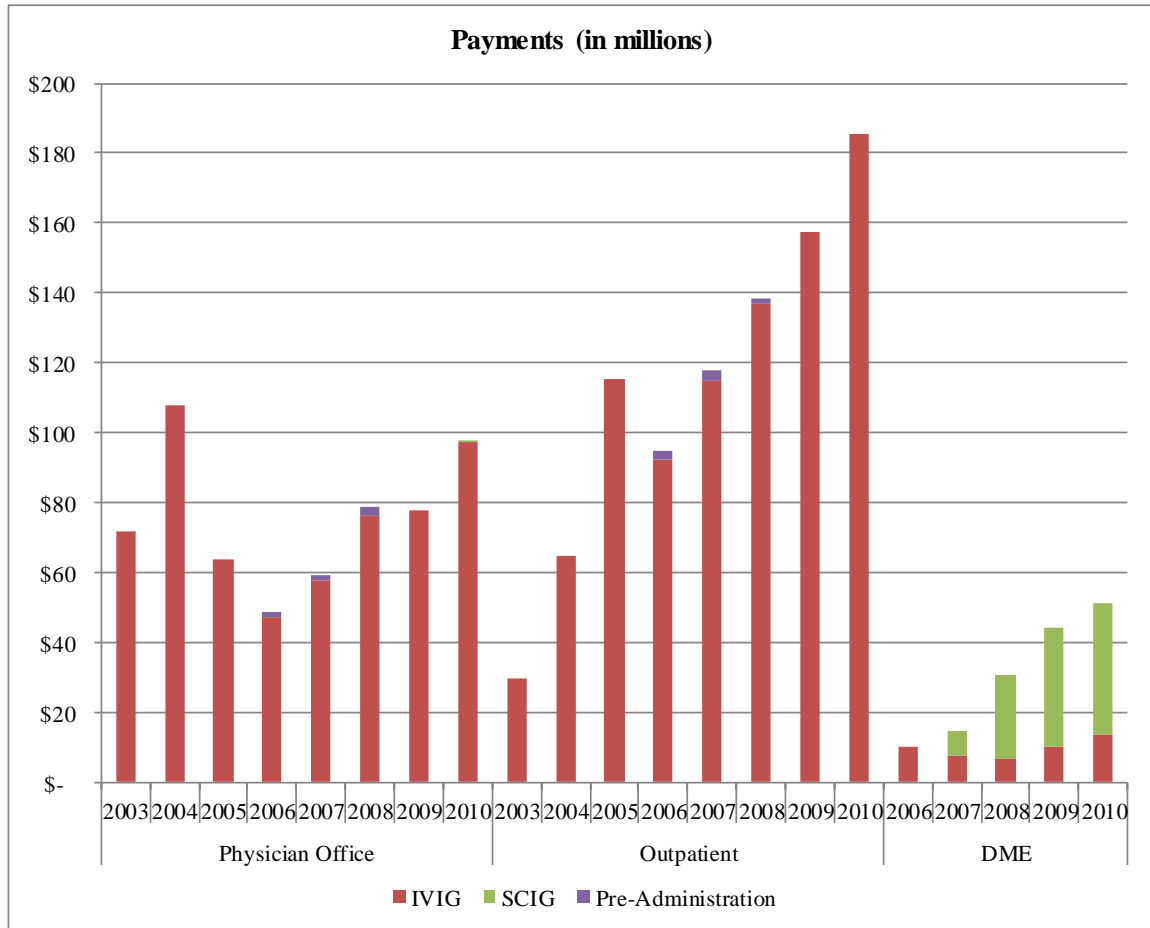


**Figure 3.** IVIG total payments and average payments per gram and per beneficiary, 2003-2010, by setting

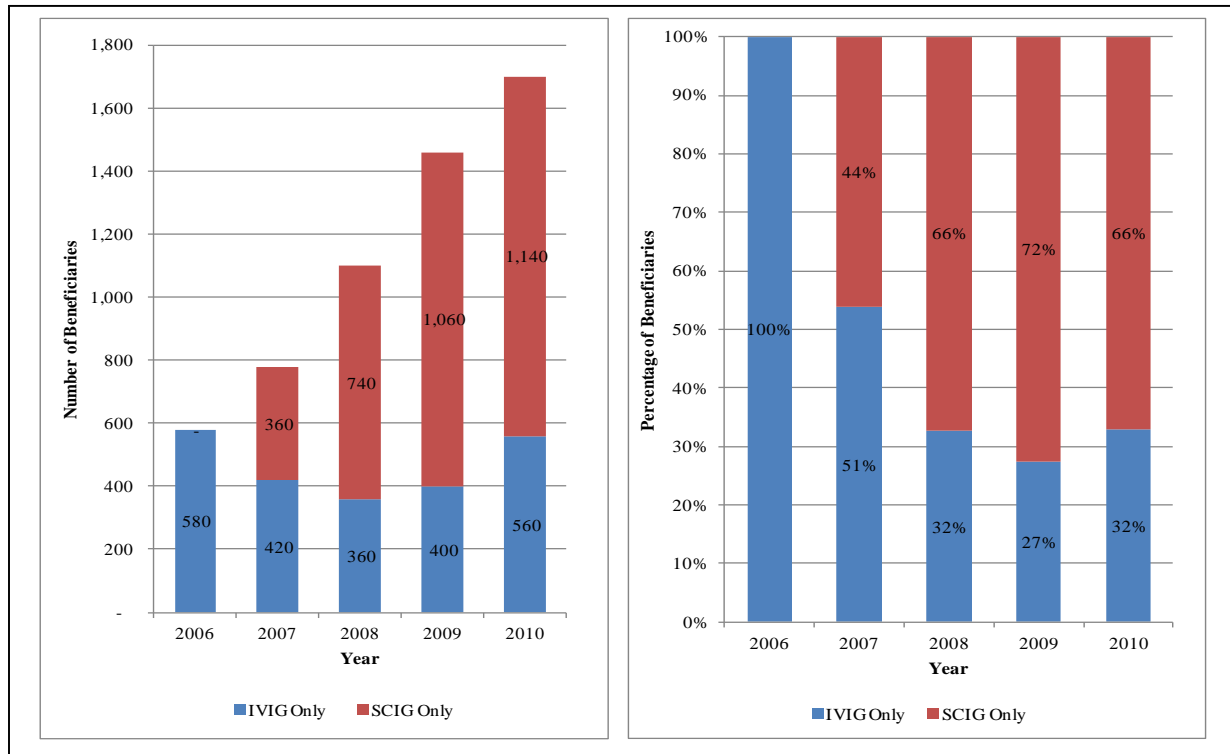




**Figure 4.** Annual distribution of payments for IVIG, SCIG and Pre-administration services, 2003-2010, by setting



**Figure 5. Utilization Patterns for IVIG and SCIG in DME<sup>1</sup>**



<sup>1</sup> Note there were a few patients receiving both IVIG and SCIG; however under our data use agreements we are unable to display such small counts.

## APPENDIX A - PID Diagnosis Codes

|        |  |
|--------|--|
| 279    | Disorders involving the immune mechanism                     |
| 279    | Deficiency of humoral immunity                               |
| 279    | Hypogammaglobulinemia, unspecified                           |
| 279.01 | Selective IgA immunodeficiency                               |
| 279.02 | Selective IgM immunodeficiency                               |
| 279.03 | Other selective immunoglobulin deficiencies                  |
| 279.04 | Congenital hypogammaglobulinemia                             |
| 279.05 | Immunodeficiency with increased IgM                          |
| 279.06 | Common variable immunodeficiency                             |
| 279.09 | Other deficiency of humoral immunity                         |
| 279.1  | Deficiency of cell-mediated immunity                         |
| 279.1  | Immunodeficiency with predominant T-cell defect, unspecified |
| 279.11 | Digeorge's syndrome  |
| 279.12 | Wiskott-aldrich syndrome                                     |
| 279.13 | Nezelof's syndrome   |
| 279.19 | Other deficiency of cell-mediated immunity                   |
| 279.2  | Combined immunity deficiency                                 |
| 279.3  | Unspecified immunity deficiency                              |
| 279.8  | Other specified disorders involving the immune mechanism     |
| 279.9  | Unspecified disorder of immune mechanism                     |

**APPENDIX B - IVIG/SCIG HCPCS Codes**

| <b>HCPCS</b> | <b>Product Description</b>                                  | <b>Type</b>        |
|--------------|---|--------------------|
| C9270        | Gammaplex IVIG liquid 500 mg                                | IVIG               |
| G0332        | Pre-administration services for IVIG 2006-2008              | Pre-administration |
| J1459        | Privigen  | IVIG               |
| J1557        | Gammaplex IVIG liquid 500 mg                                | IVIG               |
| J1559        | Hizentra  | SCIG               |
| J1561        | Gamunex since 2008  | IVIG               |
| J1562        | Vivaglobin since 2007                                       | SCIG               |
| J1563        | Lyophilized (powder) 2004-2005; 1 g IVIG code in 2003.      | IVIG               |
| J1564        | Non-lyophilized (liquid) 2004-2005; 10 mg IVIG code in 2003 | IVIG               |
| J1566        | Lyophilized (powder)  | IVIG               |
| J1567        | Non-lyophilized (liquid)                                    | IVIG               |
| J1568        | Octagam   | IVIG               |
| J1569        | Gammagard SD  | IVIG               |
| J1572        | Flebogamma  | IVIG               |
| Q4087        | Octagam   | IVIG               |
| Q4088        | Gammagard SD  | IVIG               |
| Q4091        | Flebogamma  | IVIG               |
| Q4092        | Gamunex   | IVIG               |
| Q4097        | Privigen  | IVIG               |
| Q9941        | lyophilized (powder) (1g)                                   | IVIG               |
| Q9942        | lyophilized (powder) (10 mg)                                | IVIG               |
| Q9943        | Non-lyophilized (liquid) (1g)                               | IVIG               |
| Q9944        | Non-lyophilized (liquid) (10 mg)                            | IVIG               |

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## **Appendix C – Data cleaning**

In 2005 and 2006, beneficiaries in Florida were responsible for an exceptionally large portion (40%) of all IVIG/SCIG payments to PID patients in the physician office, and exhibits unusual patterns in all other settings. (In all other years, Florida was 10% or less.) Thus, we have excluded beneficiaries in Florida from all analyses, to focus on the main underlying trends in reimbursement and utilization.

Additionally, there were IVIG/SCIG lines on carrier, outpatient and DME claims with implausibly high rates of payment per unit – many multiples of ASP – and rates of payment low enough to suggest denial of payment. We excluded any lines that were 15% higher or lower than median payment per unit (measured separately for each HCPCS code, in each year, in each setting).