Assessing the Impact of Changes in Reimbursement Regulations and Product Availability On Access to Intravenous Gammaglobulin Treatment Among Primary Immune Deficiency Patients

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November 28, 2006

This survey was conducted with the cooperation of the American Academy of Asthma, Allergy and Immunology, and funded in part by an educational grant from Baxter Healthcare Corporation, Octapharma, Talecris Biotherapeutics, and ZLB Behring.
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Summary of 2006 Primary Immune Deficiency Patient Survey

The Immune Deficiency Foundation (IDF) conducted a national survey of patients with primary immune deficiency diseases (PIDD) in order to determine the extent to which Medicare patients and other PIDD patients have experienced differences in treatment since January 2005 (when new Medicare reimbursement rates went into effect); whether these differences in treatment were related to insurance coverage; and whether treatment differences had adverse effects on patient health. The survey was conducted by mail during August-October, 2006, using a sample of PIDD patients from the IDF database. A total of 1,009 usable responses were received from patients with primary immune deficiency diseases – a response rate of 35%. Most of the analysis presented in this report is based upon comparisons of 255 Medicare patients and 391 private insurance patients who are currently being treated with intravenous immunoglobulin (IVIG). The key findings from the survey are:

- While most individuals with PIDD who ever received IVIG treatments are still getting such treatments, among those who stopped, product availability and insurance problems were much more often mentioned by Medicare patients than by private insurance patients as reasons for discontinuing treatment.

- Compared to before 2005, fewer Medicare patients are receiving their treatments now at private physician offices, and more are getting their IVIG at home, at hospital clinics, or other outpatient facilities. When asked why, the most common answer cited by over half, was insurance related.

- Substantial numbers of patients – well over one-third of those on Medicare and more than one-quarter of other patients -- had their treatments postponed and/or reduced in frequency, most often because of IVIG unavailability. However, inadequate insurance reimbursement was cited as a reason more often by Medicare patients.

- Dosage reductions were less common, but the incidence of being infused with fewer grams of IVIG was nearly three times as high for Medicare patients as for others.

- Approximately half of all patients are using a different brand of IVIG compared to before the beginning of 2005. The primary reason is unavailability of their former brand. This impact didn’t discriminate between Medicare and non-Medicare patients.

- Over twice as many Medicare patients – 27% of Medicare patients vs. 12% of others – encountered more problems getting treatments since the new Medicare reimbursement policy went into effect.

- More than one-quarter of Medicare patients (26%) reported suffering health consequences as a result of difficulties getting or paying for IVIG. They were more than two and one-half times as likely as patients with private insurance to report having had their health negatively impacted.

- The likelihood and number of health problems experienced by PIDD patients is correlated with their difficulties in obtaining IVIG treatment.

Overall, this survey supports the conclusion that a significant minority of Medicare PIDD beneficiaries dependent on IVIG have been adversely impacted by reimbursement changes that became effective in January 2005. Furthermore, the survey shows that Medicare patients have suffered proportionately more difficulties obtaining IVIG infusions and more health problems than patients with private insurance since the reimbursement rule revision took effect.
Assessing the Impact of Changes in Reimbursement Regulations and Product Availability On Access to Intravenous Gammaglobulin Treatment Among Primary Immune Deficiency Patients

Background and Objectives

It has been estimated that at least 50,000 people in the United States have a primary immune deficiency disease (PIDD) – a class of disorders in which there is an intrinsic defect in the human immune system (rather than immune disorders that are secondary to infection, chemotherapy, or some other external agent). Most individuals with a PIDD receive treatment through intravenous infusions of gammaglobulin (IVIG), an effective replacement therapy for the antibody deficiency forms of the disease. At least seven out of ten PIDD patients have diagnoses for which IVIG is the only effective treatment for their condition. For them, it is a life-saving therapy.

Most patients receiving IVIG require infusions every three or four weeks, and treatments are expensive. Over the past 18 months, mounting evidence suggests two growing trends – (1) that the gammaglobulin needed for infusions has been difficult to obtain, causing some patients to miss treatments or be treated less often, to receive reduced dosage, a less preferred brand of the product, be forced to a different treatment location – in general, to receive less than optimal care for their condition; and (2) that some patients have been negatively impacted, either directly or indirectly, by changes in Medicare insurance reimbursement for IVIG treatments (reductions in payment rates). These reductions were first applied to treatments in private doctors’ offices (January 2005) and then extended to IVIG treatments in hospital outpatient facilities (January 2006). As a result of age or disability, about 20% of PIDD patients are on Medicare.

Because of these changes, Medicare patients will likely be affected first and most extensively. However, because private insurance companies often follow the government in setting their rates, non-Medicare patients will probably also be impacted. There are already indications that private insurers are matching Medicare rates or adjusting their rates downward. At least one company (BlueCross BlueShield) has dropped their reimbursement rates in several states for IVIG treatments.

So far, information about problems affecting treatments has come from patient- and physician-initiated reports. Although the volume of such reports has been impressive, suggesting that a serious problem exists, the voluntary nature of the complaints does not permit estimation of the overall magnitude of the problem or problems. In response to the need for more systematic quantification of the extent of IVIG unavailability and insurance under-reimbursement – and consequent effect on patients’ health, the Immune Deficiency Foundation undertook three parallel surveys in August of 2006. Three populations were surveyed, PIDD patients, immunologists who treat PIDD patients, and hospital pharmacies dispensing IVIG for patient infusions. The data reported on here is from the patient survey. Subsequent reports will present results from the physician and pharmacist surveys.

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1 During the first half of 2006, from January through June, the volume of calls and e-mails received by IDF has increased by more than 40%.
Survey Methodology

Sample

The survey sample was drawn from the Immune Deficiency Foundation’s patient database. Although it’s impossible to draw a strictly random sample of this very low-incidence population, no other organization maintains a list of PIDD patients as large as the IDF’s, so the sample should be as representative as can practically be obtained. Three thousand names were randomly selected as the starting sample plus a supplemental group of 135 patients presumed to be on Medicare (according to the database information). The purpose of the supplemental sample was to increase the number of Medicare respondents for analysis and to improve the reliability of those estimates and of the comparisons between Medicare patients and private insurance patients.

Questionnaire, Mailings, and Response Rates

The survey questionnaire, consisting of 35 questions formatted on four pages, was carefully developed with input from survey specialists and PIDD subject matter experts. It represents a mix of closed-ended and pre-coded open-ended questions. (A copy of the questionnaire and cover letter are appended at the end of the report.) The Foundation mailed the scanable questionnaire form to the sample on August 8, along with a cover letter explaining the purpose of the survey and requesting participation. The questionnaire was mailed out with instructions that it be completed by either the patient or, for children or those unable to fill it out themselves, by the patient’s caregiver. To improve the response rate, two additional mailings were sent to remaining non-responders. No further returned questionnaires were accepted for the final data file and analysis after October 24.

The survey generated a total of 1,047 completed questionnaires. An additional 181 survey envelopes which could not be forwarded were returned because of bad addresses, and 24 more were returned because the addressee was deceased. Subtracting the bad addresses and deceased from the starting sample of 3,135 produces a survey response rate of 1,047 / 2,930 = 36%. Of the 1,047 usable respondents, 38 were not PIDD patients and were removed from the analysis, leaving a total of 1,009 patients comprising the final sample. This produced an adjusted response rate of 1,009 / (2,930-38) = 35%.
Samples and Analysis

The following breakdown shows the respondent sample by insurance coverage and whether or not they are currently being treated with IVIG:

<table>
<thead>
<tr>
<th>Type of insurance</th>
<th>Current Users of IVIG</th>
<th>Current Non-Users</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>391</td>
<td>211</td>
<td>602</td>
</tr>
<tr>
<td>Medicare</td>
<td>255</td>
<td>81</td>
<td>336</td>
</tr>
<tr>
<td>Medicaid</td>
<td>37</td>
<td>15</td>
<td>52</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>686</strong></td>
<td><strong>323</strong></td>
<td><strong>1,009</strong></td>
</tr>
</tbody>
</table>

PIDD patients classified for analysis as “Medicare” include all respondents with some form of Medicare coverage including Medicare with Supplement. The “Private Insurance” patient segment includes all other patients with some form of private insurance (but excludes those with Medicaid coverage). Some patients in the Medicare group also have private insurance coverage, as described in the next section, but it is assumed to be secondary to their Medicare coverage. This binary distinction between the “Medicare” and “Private Insurance” groups is based on the belief that medical treatment of patients with Medicare coverage will be primarily affected by their Medicare status regardless of any supplementary insurance they might have.

The report focuses on comparing these two primary segments, especially on their recent IVIG treatment experience and outcomes. Of the 336 PIDD respondents with Medicare insurance, 255 of them are currently being treated with IVIG; of the 602 respondents with private insurance, 391 of them are currently being treated with IVIG. Another 55 Medicare patients and 115 privately insured patients had formerly been treated, but their IVIG treatments were discontinued.2 Most of the analysis presented focuses on the 255 Medicare and 391 private insurance subgroups of current IVIG users.

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2 These former IVIG users are included in the Current Non-Users column in the box above. Current Non-Users includes both former IVIG users as well as those who were never treated with IVIG.
Respondent Sample Profile

This initial section presents background and condition-related characteristics of Medicare patients and patients with private insurance as their main coverage.

Health Insurance

Respondents with private insurance were made up mostly of those with private insurance or COBRA (94%). The rest of this primary segment is characterized by “Other” insurance or multiple forms of coverage excluding Medicare and Medicaid (Figure 1).

Figure 1: Private Insurance Patients

Q5. Which of the following types of health insurance is the patient covered by? Base: Private Insurance N = 602

Source: IDF 2006 Patient Survey
Examining those with Medicare coverage (Figure 2), 89% had supplemental coverage in addition to Medicare. This supplemental coverage would include Medigap policies purchased in the individual insurance market, employer-based supplemental coverage, or coverage through a Medicare Advantage managed care plan. It would also include Medicaid coverage, as well as Veterans Administration and CHAMPUS (retired military) benefits. Eleven percent of Medicare patients had Medicare coverage only.

**Figure 2: Medicare Insurance Patients**

- Medicare only: 11%
- Medicare plus other: 89%

Q5. Which of the following types of health insurance is the patient covered by? Base: Medicare-insured N = 336

Source: IDF 2006 Patient Survey
Not surprisingly, many (53%) of PIDD patients in the Medicare group are 60 and older. Ten percent of those in the Private Insurance segment are 60 years or older (Figure 3). At the other end of the age spectrum, only 2% of Medicare patients and 18% of those with private insurance are younger than 18. Although it is not unreasonable to expect that this age difference might explain differences in treatment experience and outcomes between Medicare insured and the private insured, later analysis of current users shows that treatment differences persist after age is statistically controlled – when the comparisons are made within both the older and younger age groups.

Q3: What is the patient's age?
Base: Current IVIG users answering the age question

Source: IDF 2006 Patient Survey
**Type of PIDD**

A majority of the patients in each group were diagnosed with the most prevalent variety of PIDD - Common Variable Immunodeficiency (CVID): 67% of patients with Medicare coverage and 63% of the patients with private insurance. The next most common type of PIDD are Agammaglobulinemia (XLA), which was the condition characterizing 9% of Medicare patients and 18% with private insurance, and Immunoglobulin G Subclass Deficiency (IgG Subclass Deficiency), characterizing 10% and 9% of the two groups, respectively (Figure 4). Except for a higher incidence of XLA among privately insured patients, the two groups have similar condition profiles.

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**Figure 4: Type of PIDD**

- **Common Variable Immunodeficiency (CVID):**
  - Medicare N=255: 67%
  - Private Insurance N=391: 63%
- **Agammaglobulinemia (XLA):**
  - Medicare N=255: 9%
  - Private Insurance N=391: 18%
- **IgG Subclass Deficiency:**
  - Medicare N=255: 10%
  - Private Insurance N=391: 9%
- **Other:**
  - Medicare N=255: 7%
  - Private Insurance N=391: 8%
- **Not Sure:**
  - Medicare N=255: 7%
  - Private Insurance N=391: 2%

Q4. What type of primary immune deficiency has the patient been diagnosed with?

Base: Current IVIG users  * Significant at .05 level

Source: IDF 2006 Patient Survey
Current Treatment Frequency, Dosage, and Brand of IVIG

Current users of IVIG most often receive IVIG treatment every four weeks (61% of Medicare patients and 55% of private insurance patients), another 24% of Medicare patients and 27% of privately insured patients reported receiving treatments every three weeks. Relatively few patients receive treatments at other intervals (Figure 5).

Figure 5: Frequency of IVIG Treatment

Q20. How often does the patient receive IVIG treatment?
Base Current IVIG Users
Source: IDF 2006 Patient Survey
Grams of IVIG Per Treatment

PIDD patients are most likely to receive 20-39 grams of IVIG per infusion. The modal amount is 30 to 39 grams of IVIG per treatment (25% of Medicare patients and 33% of patients using private insurance), and 23% of Medicare patients and 24% of privately insured users, respectively, receive 20 to 29 grams per treatment (Figure 6).

Figure 6: Grams of IVIG Per Treatment

Q23. About how many grams of IVIG per treatment does the patient now normally receive?
Base Current IVIG users  * Significant at .05 level
Source: IDF 2006 Patient Survey
Patients Who Never Received IVIG and Those Who Discontinued IVIG Treatment

Patients Never Treated With IVIG

As noted earlier, 81 patients on Medicare and 211 patients covered by private insurance are currently not receiving IVIG treatment. Among these segments not currently receiving treatments, 26 on Medicare (32%) and 96 with private insurance (45%) reported never having been treated with IVIG.

The most common reason for never receiving IVIG treatment was that a doctor had never prescribed it (42% of Medicare patients and 67% of private insurance users). Another 19% and 11%, respectively, said that IVIG was not appropriate for their condition. Nineteen percent of Medicare patients and 9% of privately insured patients had not used IVIG because they were treated with subcutaneous immune globulin (Sub-Q) instead. Fifteen percent and 14% of the two groups, respectively, cited safety or side effects. A miscellany of other reasons, each one mentioned by fewer than 10%, were cited by patients who never received treatments. (No figure).

Patients Who Discontinued Treatment

Most survey respondents who were ever treated with IVIG are still being treated. This applies to those with private insurance, patients with Medicare-only coverage, and those with Medicare plus some other coverage. However, among those whose treatments were discontinued, 6-9% (depending on their insurance status) stopped receiving IVIG infusions since the beginning of 2005. Nine to thirteen percent stopped receiving treatments in 2004 or earlier (Figure 7).

Figure 7: Discontinuing IVIG

Q6. Is the patient currently being treated with intravenous immune globulin (IVIG) for this condition?  
Q7. Has the patient ever been treated with IVIG?  
Q9. When did the patient stop being treated for IVIG?  
Base: Patients ever treated with IVIG  
Source: IDF 2006 Patient Survey
Among patients who stopped receiving IVIG, product availability and insurance problems clearly exhibit a greater impact on Medicare patients: Over three times as many Medicare patients said that the reason they stopped was IVIG unavailability (Figure 8). Four times as many Medicare patients cited insurance problems as the reason for stopping. High expense is also cited more often by Medicare patients as a reason for discontinuing treatment (though that difference is not statistically significant). On the other hand, being no longer prescribed by their doctor, switching to Sub-Q, and safety or side effects were more often cited by those with private insurance for discontinuation of treatment, though only the first difference is large enough to be statistically significant given the modest sample size. A wide range of other reasons were also cited, none of which garnered more than a very small number of mentions.

Figure 8: Reasons for Discontinuing IVIG

<table>
<thead>
<tr>
<th>Reason</th>
<th>Medicare N=49</th>
<th>Private Insurance N=105</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVIG Unavailable*</td>
<td>16%</td>
<td>32%</td>
</tr>
<tr>
<td>Lack of Insurance*</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Switched to Sub-Q*</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>No Longer Prescribed*</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>Too Expensive</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Safety Side Effects</td>
<td>29%</td>
<td>21%</td>
</tr>
<tr>
<td>Levels Normal</td>
<td>16%</td>
<td>14%</td>
</tr>
<tr>
<td>Problem with Veins</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Other Reasons</td>
<td>16%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Q10. Why were the treatments stopped? Base Not currently using IVIG:
* Significant at .05 level

Source: IDF 2006 Patient Survey
Recent Treatment Experiences of Current IVIG Users

This section compares IVIG treatment experiences of Medicare and private insurance patients currently receiving IVIG treatment. These include changes in location of treatment, postponed treatments, increased intervals between infusions, reductions in dosage, changes in brand of IVIG and reported side effects, and overall difficulty obtaining treatments in 2005-2006.

Changes in Location of Treatment

Medicare patients are more likely than the privately insured to have changed their site of IVIG treatment since the beginning of 2005: Thirty-two percent of patients on Medicare compared to 19% of patients using private insurance are receiving IVIG infusions at a different location now than before 2005 (Figure 9).

Figure 9: Different Treatment Location

Q12. Is the patient now getting IVIG treatments at the same location as in December 2004 (or the same place they were given most recently before that time)? Base Current IVIG Users *

The difference is significant at the .05 level.

Source: IDF 2006 Patient Survey
Medicare patients are much less likely than private insurance patients to receive their IVIG infusions at home and more likely to receive them as hospital outpatients and in hospital clinics (Figure 10). This is even truer now in 2006 than in 2004. The most noticeable change in the past two years, however, is the sharp drop in the percent of Medicare-insured receiving their infusions in doctors' offices, which was reduced by more than half. In contrast, the number of privately insured persons getting IVIG treatments in doctors' offices remained virtually stable. Although the number of in-patient infusions for both groups is small, the Medicare-insured are also more likely to receive their treatments as in-patients.

**Figure 10: IVIG Treatment Location - 2006 and 2004**

Q11. Immediately prior to 2005, where the IVIG treatments usually given? Q13. Where is the patient getting treatments now? Base: Current IVIG users

* Significant change at the 05 level

Source: IDF 2006 Patient Survey
What explains patient changes in the location of their treatments? Medicare patients had to change the location of their treatments because of inadequate insurance reimbursement nearly five times as much as patients with private insurance: 54% vs. 11% (Figure 11). And, they were almost twice as likely to cite IVIG unavailability as a reason for the site change. On the other hand, privately insured patients were more likely to mention convenience as the reason for their site change.

Figure 11: Reasons for Change in IVIG Treatment Location

<table>
<thead>
<tr>
<th>Reason</th>
<th>Medicare N=90</th>
<th>Private Insurance N=88</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location closed</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Convenience</td>
<td>9%</td>
<td>27%</td>
</tr>
<tr>
<td>Unhappy with service</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Doctors recommendation</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Reimbursement</td>
<td>54%</td>
<td>11%</td>
</tr>
<tr>
<td>IVIG Unavailable</td>
<td>27%</td>
<td>14%</td>
</tr>
<tr>
<td>Moved</td>
<td>7%</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>29%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Q15. What was your understanding of the reason for the change? Base: Currently Using IVIG and now getting IVIG at different location than December 2004  *Significant at .05 level
Source: IDF 2006 Patient Survey
Postponed Treatments

More Medicare than private insurance patients had to have their treatments postponed since the beginning of 2005 (Figure 12). They were also more likely to have had their treatments postponed multiple times. More than 4 in 10 Medicare patients (41%) reported postponed treatments, and one-quarter of all Medicare-insured suffered multiple IVIG treatment postponements. The corresponding proportions for private insurance patients are 28% and 16%.

Figure 12: Number of Times IVIG Treatment Postponed

![Bar chart showing the number of times IVIG treatments were postponed]

Q16. Since the beginning of 2005, how many times have your IVIG treatments been postponed? (Also includes Q31 mentions) Base: Current IVIG Users * Significant at .05 level
Source: IDF 2006 Patient Survey
Medicare patients were almost twice as likely as other patients to cite a reduction in their insurance reimbursement – 28% vs. 15% as a reason for postponed treatments (Figure 13). They were also somewhat more likely than patients with private insurance to attribute it to the unavailability of IVIG.

Figure 13: Reasons for Postponement of Treatment

Q17. Why was treatment postponed? Base: Current IVIG Users Whose Treatment Was Postponed Since the Beginning of 2005. * Significant at .05 level

Source: IDF 2006 Patient Survey
Increased Interval Between Infusions

Eighteen percent of Medicare patients and 12% of privately insured patients indicated that the time interval between infusions had increased since the beginning of 2005 (Figure 14).

Figure 14: Patients Experiencing Increased Intervals Between Treatments

<table>
<thead>
<tr>
<th></th>
<th>Medicare N=255</th>
<th>Private Insurance N=391</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes*</td>
<td>18%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Q18. Has the time interval between IVIG infusions increased since the beginning of 2005? (Also includes Q31 mentions)  Base Current IVIG users  * Significant at .05 level

Source: IDF 2006 Patient Survey

Even though relatively few patients reported experiencing longer periods between treatments, the reasons given by the two segments differed: While private insurance patients were more likely to say the expanded interval between IVIG infusions was doctor recommended (66% compared to 46%), Medicare patients, much more often than the privately insured, attributed this to the unavailability of IVIG (30% compared to 5%) and/or issues with their health insurance (19% compared to 5%). (No figure shown.)
Reduction in Dosage

Medicare patients also experienced IVIG dosage reductions more often than private insurance PIDD patients - more than twice as often, in fact (Figure 15). Since the start of 2005, 13% with Medicare coverage, compared to 5% with private insurance, had their number of grams of IVIG reduced.

![Figure 15: Patients Receiving Reduced Dosage](image)

Q21. Has the number of grams the patient receives been REDUCED since the beginning of 2005 for any reason? (Also includes Q31 mentions) Base Current IVIG users * Significant at .05 level

Source: IDF 2006 Patient Survey

Although the numbers of patients receiving reduced dosages are small, the reasons cited for the reduction again differ for the two insurance groups: Those with private insurance mainly cited doctor recommendation as the reason (74% compared to 40% of Medicare patients), Medicare patients were also more likely to mark IVIG unavailability as the reason (40% compared to 16% of the patients with private insurance). (No figure.)
Change in IVIG Brand and Side Effects

Medicare and private insurance patients do not differ significantly on their likelihood of having changed brands (Figure 16). Approximately half of each group reported experiencing a change since the beginning of 2005.

**Figure 16: Patients Changing Product/Brand**

<table>
<thead>
<tr>
<th>Medicare N=255</th>
<th>Private Insurance N=391</th>
</tr>
</thead>
<tbody>
<tr>
<td>49%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Q25. Has the product/brand the patient receives been changed since the beginning of 2005? (Also includes Q31 mentions) Base Current IVIG users
Source: IDF 2006 Patient Survey

The most common reason for changing brands was unavailability of the former brand: 57% of Medicare patients and 67% of privately insured patients cited unavailability of their former product as the reason for the brand change (no figure).
Among Medicare patients who changed brands, 19% experienced more side effects with the new IVIG they received, as did 15% of those with private insurance (Figure 17). Twenty-three percent of Medicare patients and 19% of the privately insured reported experiencing fewer side effects. Thus, the groups appear to be equally affected by the brand or product change, on net. Slightly more patients in each insurance segment appear to have benefited from the switch (not in figure).

**Figure 17: Side Effects Due to Change in Brand**

Among the 48 Medicare and 56 private insurance patients reporting having experienced more side effects after the change, the most common ones for the respective groups were:

- headaches: 77% (Medicare group) and 79% (private insurance group)
- chills: 38% and 36%
- nausea: 35% and 38%
- fevers: 31% and 30%
- shortness of breath: 21% and 18%
- high blood pressure: 19% and 16%
- vomiting: 15% and 11%
- rashes: 10% and 5%.

These numbers suggest that the groups suffered a generally similar incidence of side effects from the IVIG product change.
Were IVIG Treatments Easier or Harder to Obtain Since the Start of 2005?

At the end of the section of the survey on treatment experiences, patients were asked a summary question about whether they had experienced greater or fewer difficulties overall in getting IVIG since the beginning of 2005. A far larger percentage of Medicare patients encountered more trouble overall getting IVIG treatments. Twenty-seven percent of Medicare patients reported greater difficulties since the start of 2005 compared with 12% of privately insured patients (Figure 18).

![Figure 18: Change in Difficulty Obtaining Treatments Since Beginning of 2005](image)

Q30. Overall, has the patient had less trouble getting IVIG treatments since the beginning of 2005, or has this not changed? Base: Current IVIG users  * Significant at .05 level

**Source:** IDF 2006 Patient Survey

**Interim Summary: Patient Experiences With IVIG Treatments**

The foregoing data imply that PIDD patients on Medicare had a higher incidence of negative treatment experiences in 2005 and 2006 than privately insured patients. Secondly, among patients encountering problems with their IVIG treatment, those with Medicare coverage more often attributed the problems to inadequate insurance reimbursement or other insurance issues. They were also more likely to mention product unavailability. Over twice as many Medicare patients as private insurance patients reported more problems overall in obtaining IVIG treatments since January 1, 2005.

More Medicare patients than private insurance patients changed their location of treatment since the beginning of 2005. While they were much more likely than the privately insured to get their treatments in a doctor’s office before January 1, 2005, after the change in reimbursement policy, Medicare IVIG users experienced a sharp drop in doctor’s office infusions and became less likely to receive infusion in that location, as compared to the privately insured. During this
period, the privately insured IVIG user experienced little change in doctor’s office as a site for infusion. With the change, Medicare patients were shifted to hospital settings for their infusions.

The same pattern applies to experiencing multiple postponed treatments, an increased interval between treatments, and dosage reduction since January 1, 2005. Each of these problems affected Medicare patients more than private insurance patients, and all were more apt to have insurance-related causes among Medicare patients than among other patients. IVIG brand changing affected both groups of patients about the same.

**Negative Health Effects Experienced by Primary Immune Deficiency Patients**

**Incidence and Types of Health Problems**

More than two and one-half times as many Medicare patients as private insurance patients (26% vs. 10%) reported negative health consequences as a result of difficulties getting or paying for IVIG treatment since the beginning of 2005 (Figure 19).

![Figure 19: Experienced Negative Health Effects](image-url)

Q32. Since the beginning of 2005, has the patient experienced negative health effects as a result of problems getting or paying for IVIG? Base: Current IVIG users  * Significant at .05 level  
Source: IDF 2006 Patient Survey
As shown in Figure 20, Medicare patients were more likely than others to suffer many different kinds of negative health effects since the beginning of 2005 as a result of problems getting or paying for IVIG. These include infections, bronchitis, new or additional side effects, and pneumonia. They were also more likely to experience health problems serious enough to require hospitalization (although hospitalization was not common in either group).

Figure 20: Main Types of Health Problems

Q33. What kinds of health problems, if any, has the patient experienced since the beginning of 2005 as a result of problems getting IVIG? Base Current IVIG users * Significant at .05 level

Source: IDF 2006 Patient Survey
One might surmise that the different health consequences of Medicare and private insurance patients could be due to Medicare patients being older, on average. However, it is not the case that the older patients in the Medicare group explain the disparities. When the analysis is restricted to patients less than 60, the differences not only persist, they become even more pronounced (Figure 21A). Thus, the treatment and health differences found between Medicare and private patients with primary immune deficiency disease who are being treated with IVIG reflect an insurance difference, not an age difference.

**Figure 21A: Main Types of Health Problems**
(patients under 60)

Q33. What kinds of health problems, if any, has the patient experienced since the beginning of 2005 as a result of problems getting IVIG? Base Current IVIG users  * Significant at .05 level

Source: IDF 2006 Patient Survey
Medicare patients 60 and older are also more likely than privately insured 60+ patients to experience unwanted health effects (Figure 21B), although fewer of the differences are statistically significant, in part, because of the relatively small number of patients in that age group who are not on Medicare. Taken together, Figures 21A and 21B indicate that the insurance difference which is manifest in Figure 20 is still apparent when age is statistically controlled – that patients on Medicare are more likely to suffer negative health effects regardless of age.

![Figure 21B: Main Types of Health Problems (patients 60 years of age and older)](chart)

Q33. What kinds of health problems, if any, has the patient experienced since the beginning of 2005 as a result of problems getting IVIG? Base Current IVIG users  * Significant at .05 level

Source: Immune Deficiency Foundation
The Relationship Between IVIG Treatment Problems and Health Problems

Thus far, the report has documented treatment disparities between Medicare and private insurance patients as well as disparities in the incidence of health problems reported. But, are the two connected – are the more negative treatment experiences of Medicare patients causing their higher rate of health problems?

Correlation analysis provides evidence that they are related: The correlation between the number of treatment problems and the number of reported health problems is quite strong (Pearson’s $r = 0.47$), indicating that they are quite closely related empirically – the greater the number of treatment difficulties, the greater the number of health problems. In fact, each treatment problem studied – IVIG location change, number of treatment postponements, experiencing a longer period between treatments, dosage reduction, and brand change – is individually correlated significantly with reported number of health problems ($r$ ranges from 0.19 to 0.40).

Another way to analyze the relationship between negative treatment experiences and health problems is to determine whether the treatment experiences are correlated with having had ANY health problem. Once again, the correlations are all in the expected direction and statistically significant, providing further evidence that patient health problems are associated with difficulties obtaining IVIG treatment.

Although correlation of two factors does not prove that a casual relationship exists – it does offer prima facie evidence, in this case, that problems encountered in obtaining IVIG treatments produce negative health effects. Therefore, the higher rate of treatment problems experienced by Medicare patients is very likely an important factor leading to their higher incidence of health problems.
Treatment Experiences and Health Impacts Among Medicare-only Patients

Thus far, all Medicare patients – whether Medicare insurance only or Medicare with supplemental insurance – have been combined for comparisons with private insurance patients. This brief concluding section on treatment experiences and health outcomes examines PIDD patients with Medicare-only coverage (no supplement) to determine if they have been affected more or the same as Medicare patients with additional coverage. Because the number of Medicare patients with no supplemental coverage is very small, analysis in this section must be regarded as tentative.

Figure 22 displays the treatment experiences and reported health problems of these two groups. Medicare-only patients were significantly more likely than those with Medicare and supplemental coverage to encounter treatment postponements. They also appear more likely to have experienced increased intervals between treatments. On the other hand, Medicare-plus patients reported a higher incidence of brand changes (significant at the .10 level).

Although a larger proportion of Medicare-only patients than Medicare-plus patients had more trouble overall obtaining treatments since the beginning of 2005 (32% vs. 26%), and also to report having had health problems because of difficulties getting IVIG (32% vs. 25%), those contrasts are not large enough to be statistically significant, given the sample size.

Figure 22: Medicare-Only vs. Medicare Plus
Other Insurance

Source: IDF 2006 Patient Survey

Confidence in Ability to Obtain IVIG

While most PIDD patients currently receiving treatments are at least somewhat confident that the amount of IVIG they are receiving is best for maintaining their health, only 54% of Medicare patients and 61% of private insurance patients feel “very confident” about it (Figure 23). Significantly more Medicare patients (15%) express concerns about the amount of IVIG they are getting compared to private insurance patients (4%).
Q34. How confident are you that the amount of IVIG the patient currently receives is best for maintaining the patient's health? Base: Current IVIG users  * Significant at .05 level

Source: IDF 2006 Patient Survey
Patients receiving treatments were also asked to indicate how confident they are that they will be able to receive the right amount of IVIG, if needed, to keep them healthy in the future. Again, Medicare patients are less confident, with 32% saying they were not too or not at all confident compared to 22% of privately insured patients (Figure 24).

Figure 24: Confidence in Obtaining Future Dosage

Q35. How confident are you that the patient will be able to receive the right amount of IVIG, if needed, to keep him/her healthy in the future? Base Current IVIG users

Source: IDF 2006 Patient Survey

Conclusion

The data from this survey suggest a substantial minority of patients is experiencing limited product choice and increased product cost regardless of insurance status. This would reflect an issue of availability. However, the more serious problems of postponed infusions, increased intervals between infusions and reduced dosage fall disproportionately on Medicare patients. The significant difference in these treatment experiences by insurance status, along with higher rates of negative health outcomes is clearly a reimbursement problem. Although the analysis should not be construed as minimizing limits in product choice and cost that are introduced by product availability, the health consequences for older and disabled patients on Medicare is a reimbursement problem. Government policy-makers need to tackle this issue immediately, as there are no alternative treatments for PIDD patients.
[Appendix A: Copy of Survey Questionnaire]
1. Are you a patient with primary immune deficiency disease (PID) or a parent/caregiver of a child in the household with PID?

Mark all that apply
- Patient → SKIP TO Q3
- Parent/caregiver
- Both → SKIP TO Q3
- Neither → PLEASE STOP HERE.

[IF BOTH PATIENT AND PARENT/CAREGIVER ANSWER QUESTIONS ABOUT YOURSELF]

2. What is your relationship to the patient?
- Father
- Mother
- Brother/sister
- Husband/wife
- Other

3. What is the patient's age?
- Under 18
- 18 to 29
- 30 to 39
- 40 to 49
- 50 to 59
- 60 to 69
- 70 or older

4. What specific type of primary immune deficiency has the patient been diagnosed with?
- Agammaglobulinemia (XLA)
- Ataxia Telangiectasia (A-T)
- Chronic Granulomatous Disease (CGD)
- Common Variable Immunodeficiency (CVID)
- Complement Deficiency
- DiGeorge Syndrome (22q11 deletion, or DGS)
- Hereditary Angiodema (C1INH deficiency, or HAE)
- Hyper IgM Syndrome
- IgG Subclass Deficiency
- Selective IgA Deficiency
- Severe Combined Immunodeficiency (SCID)
- Severe Congenital Neutropenia (SCN)
- Specific Antibody Deficiency
- Wiskott-Aldrich Syndrome (WAS)
- Other
- Not Sure

5. Which of the following types of health insurance is the patient covered by?

Mark all that apply
- Medicare
- Medicare with supplement
- Medicaid/Medi-Cal
- Private health insurance company (Blue Cross, Aetna, United Healthcare, etc.)
- No health care coverage
- Cobra
- Other

6. Is the patient currently being treated with intravenous immune globulin (IVIG) for this condition?
- Yes → SKIP TO Q11
- No

7. Has the patient ever been treated with IVIG?
- Yes → SKIP TO Q9
- No

8. Is there any reason why the patient has never been treated with IVIG?

Mark all that apply
- No - IVIG treatment was never prescribed by the doctor
- Lack of insurance coverage/inadequate coverage
- Cost
- Safety/Side effects
- Treated with subcutaneous immune globulin instead
- Other reason

IF YOU OR THE PATIENT HAS NEVER BEEN TREATED WITH IVIG, STOP. PLEASE REMEMBER TO RETURN THIS SURVEY FORM, AND THANK YOU FOR PARTICIPATING IN THE SURVEY.
<table>
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| 9. When did the patient stop being treated for IVIG? (If treatment stopped more than once, answer about the last time.) | ○ This year (2006)  
○ 2005  
○ 2004 or earlier |
| 10. Why were the treatments stopped?                                    | Mark all that apply  
○ IVIG treatments no longer prescribed by the doctor as medically indicated  
○ Lack of insurance coverage/Not enough coverage  
○ Too expensive (despite good insurance coverage)  
○ IVIG not available or hard to get  
○ Safety/Side effects  
○ Switched to subcutaneous immune globulin (Sub-Q)  
○ Other reason ___________________________  
○ No reason given |
| 13. Where is the patient getting treatments now?                        | Mark all that apply  
○ At home  
○ Doctor's private office  
○ Hospital inpatient  
○ Hospital outpatient admission  
○ Hospital infusion clinic  
○ Private infusion suite  
○ Other place  
○ Don't/don'ts get treatments now |
| 14. When did the location change occur? (If location changed more than once, answer about the most recent change.) | ○ Since the beginning of 2006  
○ 2005  
○ 2004 or earlier |
| 15. What was your understanding of the reason for the change?            | Mark all that apply  
○ Former location closed  
○ Chose to move from former location for convenience  
○ Unhappy with service at former location  
○ Doctor recommended a different location (better for patient's condition)  
○ Insurance reimbursement was reduced/Inadequate insurance  
○ Unavailability of IVIG at former location  
○ Other reason ___________________________ |
| 16. Since the beginning of 2006, how many times have your IVIG treatments been postponed? | ○ None → SKIP TO Q18  
○ Two or three times  
○ Once  
○ Four or more times |
| 17. Why was treatment postponed?                                        | Mark all that apply  
○ Doctor recommended it  
○ Insurance reimbursement was reduced/Insurance wouldn’t cover all of the treatments  
○ High cost of co-pays and/or other out-of-pocket expenses  
○ IVIG was not available or not readily available  
○ Other reason  
○ Not sure |

**IF THE PATIENT IS NOT A CURRENT IVIG USER, STOP. PLEASE REMEMBER TO RETURN THIS SURVEY FORM. THANK YOU FOR PARTICIPATING IN THE SURVEY.**

11. Immediately prior to 2005, where were the IVIG treatments usually given?  
Mark all that apply  
○ At home  
○ Doctor's private office  
○ Hospital inpatient  
○ Hospital outpatient admission  
○ Hospital infusion clinic  
○ Private infusion suite  
○ Other place  
○ No infusions prior to 2005 → SKIP TO Q13

12. Is the patient now getting IVIG treatments at the same location as in December, 2004 (or the same place as they were given most recently before that time)?  
○ Yes → SKIP TO Q16  
○ No
18. Has the time interval between IVIG infusions INCREASED since the beginning of 2005?
- Yes
- No → SKIP TO Q20

19. Why was the interval between infusions increased?
Mark all that apply
- Doctor recommended it
- Insurance reimbursement was reduced/insurance wouldn't cover all of the treatments
- High cost of co-pays and/or other out-of-pocket expenses
- IVIG was not available or not readily available
- Other reason
- Not sure

20. How often does the patient receive IVIG treatment?
- Every two weeks or more often
- Every three weeks
- Every four weeks
- Every five weeks
- Every six weeks or less often

21. Has the number of grams the patient receives been REDUCED since the beginning of 2006 for any reason?
- Yes
- No → SKIP TO Q23

22. Why was the amount of IVIG reduced?
Mark all that apply
- Doctor's recommendation
- Insurance reimbursement was reduced/inadequate insurance coverage
- High cost of co-pays and/or other out-of-pocket expenses
- IVIG was not available or not readily available
- Other reason
- Not sure

23. About how many grams of IVIG per treatment does the patient now normally receive?
- Less than 10 grams
- 10 to 19 grams
- 20 to 29 grams
- 30 to 39 grams
- 40 to 49 grams
- 50 to 74 grams
- 75 grams or more
- Don't know

24. Which brand of IVIG is the patient currently receiving?
- Carmine (ZLB)
- Fiebogamma (Grifols)
- Gammagard (Baxter)
- Gammagard Liquid (Baxter)
- Gamunex (Bayer/Talecris)
- Ivegami (Baxter)
- Octagam (Octapharma)
- Panglobulin (Red Cross)
- Polygami (Red Cross/Baxter)
- Venoglobulin (Alpha)
- Don't know

25. Has the product/brand the patient receives been changed since the beginning of 2005?
- Yes
- No → SKIP TO Q30

26. Was the patient changed to a product that had fewer side effects, more side effects, or didn't make any difference?
- Fewer side effects → SKIP TO Q30
- More side effects
- No difference → SKIP TO Q30

27. Which, if any, of the following side effects did the patient experience with the new product?
Mark all that apply
- Chills
- Fainting
- Fever
- Headaches
- High blood pressure
- Hives
- Nausea
- Shortness of breath
- Rash
- Vomiting
- Other problem(s)
28. When was the patient changed to a product that has more side effects?
- Since the beginning of 2006
- 2005
- Before 2005

29. What reason was the patient given for the change?
*Mark all that apply*
- The former product became unavailable or hard to get
- The insurance reimbursement was reduced
- Insurance did not cover former product
- High cost of co-pays and/or of other out-of-pocket expenses
- The doctor recommended trying it because the former product was not working well
- Other reason ____________________________
- No reason given

30. Overall, has the patient had less trouble or more trouble getting IVIG treatments since the beginning of 2005, or has this not changed?
- More trouble
- Less trouble
- No change

31. Which of the following problems, if any, has the patient experienced since the beginning of 2005?
*Mark all that apply*
- Treatments had to be postponed
- Had to switch to another brand
- Time between treatments had to be increased
- The amount received had to be decreased
- Had to pay more for IVIG
- Other ____________________________
- None of these

32. Since the beginning of 2006, has the patient experienced any negative health effects as a result of problems in getting or paying for IVIG?
- Yes
- No → SKIP TO Q34

33. What kinds of health problems, if any, has the patient experienced since the beginning of 2005 as a result of problems in getting IVIG?
*Mark all that apply*
- Had to be hospitalized because did not receive enough IVIG
- Experienced more infections
- Required increased use of antibiotics
- Experienced additional/new side effects
- Had pneumonia
- Had bronchitis
- Other problem(s) ____________________________

34. How confident are you that the amount of IVIG the patient currently receives is best for maintaining the patient's health?
- Very confident
- Somewhat confident
- Not too confident
- Not at all confident

35. How confident are you that the patient will be able to receive the right amount of IVIG, if needed, to keep him/her healthy in the future?
- Very confident
- Somewhat confident
- Not too confident
- Not at all confident

Thank you for participating in this important survey!
Don't forget to return this form in the enclosed envelope to

Immune Deficiency Foundation
40 W. Chesapeake Avenue, Suite 308
Towsontown, MD 21204

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]
[Appendix B: Copy of Letter Sent Inviting Sample to Participate in the Survey]
August 2006

Dear Friend:

The Immune Deficiency Foundation (IDF) requests your participation in our 2006 Survey of Persons with Primary Immune Deficiency Disorders. The findings of this survey will help the IDF to determine the current population distribution, treatments, health outcomes, and barriers to care for primary immune deficiency diseases in the United States. This information is vital to our mission of improving the diagnosis and treatment of these diseases.

Our first national survey of primary immune deficiency diseases, conducted in 1996, has helped patients, families, health care providers and policy-makers to better understand these diseases. A copy of the report from that study is available on our website at www.primaryimmune.org. Since there has been a lot of change in the past ten years, we are conducting this new survey to obtain current information about these diseases in the United States.

If there is someone with a primary immune deficiency in your household, we hope that the patient (or parent/caregiver if the patient is a child) will complete the enclosed questionnaire and return it in the enclosed business reply envelope. If there is more than one patient in the household, please select the oldest patient in the household for this survey. Your participation is completely voluntary, but extremely important to us. If there are any questions that you prefer not to answer, that is fine.

The Immune Deficiency Foundation will keep your name and other identifying information, as well as your individual responses, confidential. If you have any questions about the survey, you can call IDF at our toll free number (1-800-296-4433). Thank you for your help on this important project.

Sincerely,

Marcia Boyle
President
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