Dr. Irwin first presented basic trending transplant facts:

- The transplant claim cost last year amounted to 2.6 billion dollars.
- Approximately 76 people receive an organ transplant each day in the United States.
- In 2011, approximately 46,000 people received a transplant; comprised of 28,535 solid organs and 17,500 stem cell transplants (10,000 autologous and 7,500 allogeneic).

In 2010, approximately 45,700 transplants were performed in the United States at an estimated $22.8 billion dollars in health-related transplant costs. Since 2007, while the total number of solid organ transplants remains stable, bone marrow transplant [“BMT”] has increased by approximately 3 percent.

Solid organ transplants have not increased since 2006 mainly due to the fact that donor supply is limiting due to lower incidents of motor vehicle accidents. Stem cell transplants are increasing for several reasons: the NMDP is in the third year of a multiyear System Capacity Initiative that has as its goal the doubling of allogeneic stem cell transplants by the year 2020, transplantable patients are older (average patient age was 55, now is 57), and the perceived need for more stem cell transplants.

There is a nationwide initiative to increase the number of transplants in the United States for which its objectives include: improve reality for more than 114,000 candidates on the transplant waiting list as of April 22, 2012, increase donor awareness and the number of transplant donors, increase the number of viable organs recovered from each donor.

In a chart Dr. Irwin offered Milliman 2011, the estimated first year billed charges (hospital, professional and drugs) for the following transplants were:

- Intestines with other organs: $1,343,200
- Kidney & Heart: $1,296,500
- Heart & Lung: $1,248,400
- Intestines only: $1,208,800
- Double Lung: $797,300
- Bone Marrow (Allogeneic) $805,400
- Bone Marrow (Autologous) $363,800
- Pancreas only $289,400

Since 2005, Milliman estimated billed charges for transplants have risen by 10.25 percent per year. At this rate, by 2013, the average transplant will cost $573,550.

Solid organ acquisition fees are determined by a CMS-guided formula of direct and indirect costs incurred for managing the transplant program, all pre-transplant administrative expenses including coordinators and physician time, in addition to the actual cost of the organ. Dr. Irwin points out that the Department of Health and Human Services and the Office of Inspector General reported evidence of provider overestimation and miscalculation.

**Trends**

**Increase in Allogeneic Stem Cell Transplants**

The increase in allogeneic stem cell transplants is likely attributable to increased use of cord blood and the use of nonmyeloablative regimens in older patients.

**Increase in Cord and Double Cord in Stem Cell Transplant**

Cord blood is a promising, additional source of stem cells for a hematopoietic stem cell transplant. The advantages of using cord blood as a source are: it’s versatile, less reliance on a perfect match and reduced risk of contamination and development of Graft Versus Host Disease. There has been increased awareness and proliferation of registries, improved cord blood harvesting and handling practices, promising double cord blood work, and ex-vivo expansion of cord blood units.

**Use of Stem Cell Transplants for Immunological-Based Diseases**

Current research is pursuing the use of Stem Cell Transplants to treat immunological-based diseases such as lupus, scleroderma, rheumatoid arthritis, Crohn’s disease, and multiple sclerosis.

**Ventricular Assist Devices (VAD)**

These are surgically implantable mechanical devices that assists the heart in pumping blood to the rest of the body. It consists of a pump, control system, and an energy supply. Originally, this devise was used as a “bridge-to-transplant” to support failing hearts until a donor heart was available. It’s now being used as a “bridge-to-recovery” and “bridge-to-bridge”. There has been a significant increase in the use of VADs since 2001; with a sharp increase since 2007.
Dr. Irwin concluded this session noting that transplants are rare, complex medical procedures that are very expensive. Industry trends are constant – there is a need to stay on top of both clinical and economic issues that affect the industry. It is important to work with a transplant network that has the infrastructure and the resources to mitigate the significant risk that organizations have relative to this treatment.