

# THE ECONOMICS OF INNOVATION IN UPPER LIMB PROSTHETICS

Karl Lindborg, CPO

*Intersect OPS LLC*

## ABSTRACT

Upper limb external powered prosthetic technology in recent years has experienced advancements that have produced significant increases in costs to clinics, payers, and end-users. In the United States, for new technology to be considered, the technology must fit into a coding structure called the HCPCS L-Code system. If an established L-code has not been established or the l-code does not describe the new technology, an NOS (not otherwise specified) code might be utilized. Depending on the payer source, an NOS code might not be allowed and/or the desired reimbursement of the NOS code will be reduced significantly. Usefulness of these new technological advancements must also be provided to justify its use over more conventional technology. Both usefulness and cost of a specific technology are intimately tied to the overall economic value of the prosthesis. Because the way healthcare is provided and paid for in the United States, new technology and innovation is often first introduced in the United States. This paper intends to share the author's direct experience working within private clinics, federal institutions as well as manufacturers and payers. The goal is to provide insight on the challenges faced by payers, prosthetic providers, and end-users regarding the economics of innovation in the prosthetic and orthotics industry. Researcher, therapists and MD's and prosthetist should all benefit from this overview. Examples of the coding structure, increases in time for prosthetists to provide and maintain and justify new technology will be shared along with how payers handle innovation and payments.

## INCREASES IN COST, TIME, AND SERVICE

Upper limb innovation and advancement has created an increase in costs to payers with the use of NOS codes which have resulted in doubling, tripling, and even quadrupling costs over traditional myoelectric systems. With this comes an increased co-pay to the end-user. Add to this the increased setup and servicing time by the treating provider along with the increased time commitment to the end-user. When comparing the delivery time required for an upper limb prosthetic system to that of a lower limb prosthesis, is not uncommon for the delivery time of an upper limb prosthesis to take up to two times longer for effectively deliver. Additionally, the time and expense required for proper occupational therapy to effectively train the user with the new technology must be considered. As technology advances, it is not uncommon for the technology to exceed the bandwidth of most clinicians providing and training this new technology. Because payment for a prosthetic device in the United States is all inclusive for the prosthetist providing the prosthesis, evaluation time, fitting time, and follow-up (for the first 90 days after delivery) are included in the payment of the prosthesis. Follow-up care after the initial 90 days is billable for a prosthetic office visit based on 15-minute increments. Payment will also be dependent upon whether the prosthetic provider has a contract with a particular payer.

## OUTCOME MEASURES AND PROSTHETIC OPTIONS PROVIDED

While lower limb prosthetic evaluations have a variety of objective outcome measures to evaluate pre-prosthetic and post-prosthetic function which help to determine the current and anticipated functional level of the end-user, upper limb prosthetic outcome measure assessments are not as available or are less effective in predicting prosthetic effectiveness. Upper limb pre-prosthetic outcome measures rely primarily upon subjective reporting of the end-user. Post-prosthetic objective outcome measures are not as effective in predicting anticipated functional level of an upper limb end-user, and while they are available, they seem to be less effective in predicting when the end-user can progress to a more advanced technology. In addition, who conducts these upper limb outcome measures is critical. Often it is a tight collaboration between the occupational therapist and the prescribing MD as to when advancement to more complex technology is appropriate. Add to this, the challenge of an insurance company's upper limb prosthetic policy on the specific technology is allowed or not allowed, when it can be provided, and the timeframe a specific technology has to be utilized before another is considered. The chances of getting approval for advanced technology that does not

have an established L-code or has not been proven to be significantly effective over conventional technology can be very challenging.

### **ECONOMICS, PAYERS, AND L-CODES**

In the United States, there are numerous insurance plans or payer sources available for the financial coverage of prosthetic devices. The Centers for Medicare & Medicaid Services (CMS) which developed the Healthcare Common Procedure Coding System (HCPCS) L-code system establishes specific codes and corresponding fee schedules for a combination of codes that make up an entire prosthesis. Specific to lower limb prosthetic codes, there are local coverage determinations (LCD's) which specify what codes can and cannot be utilized together along with set prices that determine final payment for a particular lower limb prosthesis. These LCD regulations alert the prosthetic provider to the proper and improper combination of established codes for a complete lower limb prosthesis. It is a method to manage the total costs of a lower limb prosthesis. Specific to upper limb prosthetics and the HCPCS L-code system, there are no LCD regulations that alert the prosthetic provider of proper and improper coding combinations for the delivery of a complete upper limb prosthesis. This is both a blessing and a curse. Not knowing what CMS will allow for payment can create delays for delivery of an upper limb prosthesis. CMS through the establishment of their Pricing Data Analysis and Coding (PDAC) system, has started to provide Correct Coding bulletins that have stipulated what codes can and cannot be utilized with upper limb multiarticulate hands and partial hands. While not a formal LCD, the Correct Coding bulletins have created challenges for upper limb innovation.

CMS is a federal insurance program that provides payment to individual 65 and older or to individual who qualify for a state funded Medicaid plan for low-income individuals. The Veteran Administration (VA) is the other Federal program established for military and veterans of the military. The VA has their own set of regulations that are based on the L-code system. Other insurance programs, known as 3<sup>rd</sup> party payers, provide prosthetic payment based on the type of prosthetic plan available from a particular insurance company. 3<sup>rd</sup> party payers also have specific upper limb prosthetic policies stipulating what is and is not allowed. Co-pays by the prosthetic end-user may or may not be a part of the insurance plan. Work related injuries are another category of insurance known as Workers Compensation which cover prosthetic needs of an injured worker. Because workers compensation often involves an attorney and there is liability for the injury, the process for prosthetic approval involves a legal proceeding. In these cases, advanced technology might be approved over that of any other type of insurance.

### **CONCLUSION**

While advanced technologies and new innovation have benefits that may increase the usefulness of a particular upper limb prosthetic device to the end-user, not everyone who needs an upper limb prosthesis will benefit from new innovation. If there is a possibility an end-user could benefit from new innovation, obtaining it may be cost prohibitive. Access is dependent upon several factors including the type of insurance the end-user has, whether the loss of limb was the result of a work-related accident and how willing a provider is to try and obtain the technology. Continued research studies utilizing validated outcome measures must also show significant improvement to justify the total cost of the prosthetic limb being provided over more conventional technology. The uprising of Go-Fund-Me campaigns to raise thousands of dollars to offset the cost to the end-user of advanced upper limb technology is evidence of how the economics prosthetic innovation is at play. New policies and regulations from payers stipulating what codes and technology will or will not be allowed for upper limb technology is also evidence of the economics at play in upper limb prosthetics.

### **REFERENCES**

- [1] Pricing Data Analysis and Coding (PDAC)F, <https://med.noridianmedicare.com/web/jddme/policies/pdac>
- [2] CMS National Coverage Policy, <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=35490>
- [3] Department of Veteran Affairs Rehabilitation and Prosthetic Services, <https://www.rehab.va.gov/psas/index.asp>
- [4] Special Issue: Health Economics in Prosthetics & Orthotics, Vol. 4 No. 2 (2021): CANADIAN PROSTHETICS & ORTHOTICS JOURNAL
- [5] Personal experience working in a private clinic, Department of Veteran Affairs, 3<sup>rd</sup> Party Payer, Manufacturer, and Catastrophic Care Management