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Interacting with Other Disciplines

PEER-REVIEWED EXCELLENCE IN NURSE LIFE CARE PLANNING SINCE 2006

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From the Editor

Stephen Axtell
JNLCP Editor
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Life Care Planning is an industry spearheaded by the planners who take the time, effort, and liability on themselves to make the lives of some of the most vulnerable better. But the best planning comes from an effective and diverse team of experts. This issue was designed to help to cultivate that team. It is my hope that the information provided here establishes and curates professional relationships that will be mutually beneficial for decades to come.

You may notice that the AANLCP Crash Cart is not where you expect to see it. Rest assured that the AANLCP Crash Cart is still available for usage. You can find it here, on the Membership dashboard https://member.aanlcp.org/new-crash-cart/

For those who are looking to find our Education Scholarship, the form is here: https://member.aanlcp.org/education-scholarship/

We have two features that are not in line with our theme. One is an article on serotonin syndrome that I found to be very informative on the subject and the other is a position statement on the use of AI in Nursing from the American Nurses Association, which has been reprinted here with permission. AI is a subject that all professionals will need to reckon with, as all new forms of technology must be. I encourage you to take some time to consider it.

I hope that this fall proves to be a fruitful one for you,

Information for Authors

Information for Authors

AANLCP® invites interested nurses and allied professionals to submit article queries or manuscripts that educate and inform the Nurse Life Care Planner about current clinical practice methods, professional development, and the promotion of Nurse Life Care Planning. Submitted material must be original. Manuscripts and queries may be addressed to the Editor. Authors should use the following guidelines for articles to be considered for publication. Please note capitalization of Nurse Life Care Plan, Planning, etc.

Text

- Manuscript length: 1500 – 3000 words
- Use Word© format (.doc, .docx) or Pages (.pages)
- Submit only original manuscript not under consideration by other publications
- Put the title and page number in a header on each page (using the Header feature in Word)
- Place author name, contact information, and article title on a separate title page
- Use APA style (Publication Manual of the American Psychological Assoc. current edition)

Art, Figures, Links

- All photos, figures, and artwork must be in JPG or PDF format (JPG preferred for photos).
- Line art must have a minimum resolution of 1000 dpi, halftone art (photos) a minimum of 300 dpi, and combination art (line/tone) a minimum of 500 dpi.
- Each table, figure, photo, or art must be submitted as a separate file, labeled to match its reference in text, with credits if needed (e.g., Table 1, Common nursing diagnoses in SCI; Figure 3, Time to endpoints by intervention, American Cancer Society, 2019). Graphic elements embedded in a word processing document cannot be used.
- Live links are encouraged. Please include the full URL for each.

Editing and Permissions

- The author must accompany the submission with written release from:
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- All authors must disclose any relationship with facilities, institutions, organizations, or companies mentioned in their work.
- All accepted manuscripts are subject to editing, which may involve only minor changes of grammar, punctuation, paragraphing, etc. However, some editing may involve condensing or restructuring the narrative. Authors will be notified of extensive editing. Authors will approve the final revision for submission. The author, not the Journal, is responsible for the views and conclusions of a published manuscript.
- Submit your article as an email attachment, with document title articlename.doc, e.g., wheelchairs.doc

All manuscripts published become the property of the Journal. Submission indicates that the author accepts these terms. Queries may be addressed to the care of the Editor at: journal@aanlcp.org

Manuscript Review Process

Submitted articles are peer reviewed by Nurse Life Care Planners with diverse backgrounds in life care planning, case management, rehabilitation, and nursing. Acceptance is based on manuscript content, originality, suitability for the intended audience, relevance to Nurse Life Care Planning, and quality of the submitted material. If you would like to review articles for this journal, please contact the Editor.

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A Message from the President

Dear Members, Colleagues and Fellow Nurse Life Care Planners,

Every year, Gallup asks U.S. adults to rate the honesty and ethics of a number of professions, and for 18 years in a row, Americans overwhelmingly rate nurses as the most honest and ethical. Nurses beat out many other honest and ethical professionals, including engineers, doctors, pharmacists, police officers, psychiatrists, and even clergy for the top spot. What an exciting time to be a nurse and member of the American Association of Nurse Life Care Planners.

The AANLCP has just completed the 2023 Virtual Fall Conference. The educational presentations included extremely useful content on pediatric life care planning and costing and coding. Thank you to our Education Committee and many volunteers who utilized their time and talents for the benefit of our members. If you were unable to attend, please note that the recorded sessions are now available at www.AANLCP.org.

The Executive Board is excited to announce we are nearing the publication of the newest edition of *A Core Curriculum for Nurse Life Care Planners* and hope to have it available in the next few months! *A Core Curriculum for Nurse Life Care Planners* offers a valuable resource for nurses and serves as a foundation for a successful nurse life care planning practice. This is a great tool to utilize when preparing for the credentialing examination and a good reference for working nurse life care planners. We are truly grateful to the committees, workgroups, and individuals who spent countless hours researching, writing, and getting this edition to publication.

It goes without saying, nursing innovation continues to evolve. Nurse innovators are more crucial now than ever as our nation and the world enters a new era of healthcare challenges. These healthcare challenges will obviously impact the role of the nurse life care planner, therefore, periodic review of Nursing Life Care Planning: Scope and Standards of Practice is essential. The Executive Board has recently solicited experienced Nurse Life Care Planners to collaborate and complete the next edition of Nursing Life Care Planning: Scope and Standards of Practice. We appreciate all the volunteers who have made this a priority and look forward to its completion in 2024.

The Educational Scholarship provides an opportunity for an active member of the AANLCP to pursue further education in nurse life care planning by attending the AANLCP's Annual Educational Conference. Applications are now being accepted. To be considered for this scholarship, please complete the AANLCP Educational Scholarship application which can be accessed at https://aanlcp.org/education-scholarhip/

The AANLCP in-person annual conference will be held April 5-7, 2024 in Peachtree City, Georgia at the Crowne Plaza Atlanta SW Peachtree City Hotel and Conference Center. The Conference Center is located approximately 25 miles south of the Hartsfield-Jackson Atlanta International Airport (ATL). The Conference Center provides a serene escape located on 38 beautiful acres surrounded by trees, a lake, and 90 miles of multi-use paths (walking, jogging, bicycle, and golf carts). It has a lovely on-site restaurant that overlooks a lake and a variety of restaurants nearby to accommodate every budget and palate. The Conference Center has many amenities, such as free on-site parking, free Wi-Fi, tennis courts, an indoor heated pool, and a fitness center. We invite you to come to the 2024 AANLCP Conference to unwind, have fun, learn, collaborate, and begin, expand, or network your services to other life care planners and professionals. You can register at www.AAANLCP.org We hope to see you there!

Be sure to follow AANLCP on Instagram, LinkedIn, and Facebook to stay updated on the Association's educational offerings and industry news.

Sincerely,

Misty L. Coffman

Misty Coffman, RN, MSCC, CNLCP
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1 University of Pennsylvania School of Nursing. Nurse Innovators More Crucial Now Than Ever Before. www.nursing.upenn/edu/innovation/ Date accessed: September 19, 2023.

POSITION STATEMENT

ANA
AMERICAN NURSES ASSOCIATION

The Ethical Use of Artificial Intelligence in Nursing Practice

Effective Date: 2022
Status: Position Statement
Written by: ANA Center for Ethics and Human Rights
Adopted by: ANA Board of Directors

Purpose

The purpose of this position statement is to provide nurses with ethical guidance on the use of artificial intelligence (AI) in health care. AI is a broad category that involves using algorithms to drive the behavior of agents such as software programs, machines, robotics, games, and other hardware devices (Clipper, Batcheller, Thomaz, & Rozga, 2018). AI in health care encompasses a wide range of existing, emerging, and future technologies intended to assist nurses in caring for their patients. Data, including big data, is an important aspect of AI because its ethical use influences how AI functions and thus how it affects patients. As new AI technologies continue to emerge, nurses must have guidance on the ethical, caring, compassionate, and safe use of AI in health care. This position statement provides practical examples of AI in nursing and addresses ethical considerations by using a systematic approach based on core tenets in the literature to analyze the appropriateness of AI's application in practice.

Statement of ANA Position

Nursing values and ethics, described in the Code of Ethics for Nurses with Interpretive Statements, place caring and compassion as central elements in the nurse-patient relationship. ANA believes the appropriate use of AI in nursing practice supports and enhances the core values and ethical obligations of the profession. AI that appears to impede or diminish these core values and obligations must be avoided or incorporated only in such way that these values and obligations are protected. Nurses must ensure that advanced technologies do not compromise the nature of human interactions and relationships central to the nursing profession. It is crucial that nurses anticipate and evaluate the impact of AI on health care through a proactive approach that emphasizes agency, caring, and influence over how technology is developed and applied (Archibald & Barnard, 2018). Nurses must be informed about AI so they can provide appropriate education to patients and families to dispel myths and alleviate fears and thereby support the use of AI for optimal health outcomes.

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Recommendations

According to the Code of Ethics for Nurses with Interpretive Statements (ANA, 2015), advanced technologies, including AI, do not replace nursing skills or judgment. The Code of Ethics for Nurses Interpretive Statement 4.2 clarifies that "nurses in all roles are accountable for decisions made and actions taken in the course of nursing practice. Systems and technologies that assist in clinical practice are adjunct to, not replacements for, the nurse's knowledge and skill" (ANA, 2015, p. 15). AI does not replace a nurse's decision-making, judgment, critical thinking, or assessment skills. Interpretative Statement 1.1 holds that "nurses consider the needs and respect the values of each person in every professional relationship and setting; they provide leadership in the development and implementation of changes in public and health policies that support this duty" (ANA, 2015, p. 1). Nurses are responsible for being informed about and ensuring the appropriate use of AI to optimize the health and well-being of those in their care. The code specifically references concepts related to AI in the following excerpts:

- "Systems and technologies that assist in clinical practice are adjunct to, not replacements for, the nurse's knowledge and skill. Therefore, nurses are accountable for their practice even in instances of system or technology failure" (ANA, 2015, p. 16).
- "Advances in technology, genetics, and environmental science require robust responses from nurses working together with other health professionals for creative solutions and innovative approaches that are ethical, respectful of human rights, and equitable in reducing health disparities. Nurses collaborate with others to change unjust structures and processes that affect both individuals and communities. Structural, social, and institutional inequalities and disparities exacerbate the incidence and burden of illness, trauma, suffering, and premature death" (ANA, 2015, p. 32).
- "Because of rapidly evolving communication technology and the porous nature of social media, nurses must maintain vigilance regarding postings, images, recordings, or commentary that intentionally or unintentionally breaches their obligation to maintain and protect patients' rights to privacy and confidentiality" (ANA, 2015, p. 9).

Background

What Is AI and How Is It Applied in Nursing Practice?

AI is a broad category that involves using algorithms to drive the behavior of different agents such as software programs, machines, robotics, games, and other hardware devices (Clipper, Batcheller, Thomaz, & Rozga, 2018). AI is particularly useful in health care with respect to assisting or taking over mechanical tasks such as feeding, attending to patient hygiene, fetching, and dispensing or titrating medication, as well as conducting diagnostics. In such cases, nurses must safeguard patients so that efficiency gains are directed at activities that support or enhance caring for patients' physical, emotional, and cognitive needs. Nurses should also consider how technology shapes the nurse-patient relationsip with respect to patient expectations and perceptions of caring. For example, while AI might replace a nurse's need to feed or administer medication, it could also diminish the frequency of physical touch and nurturing behaviors. The absence of touch and nurturing can in turn diminish the patient's perception of a caring relationship. It is critical for nurses to support AI technology that creates, maintains, and/or enhances caring interactions with patients. AI integration may manifest as prompts in the electronic health record or the implementation of nomograms as decision-support tools. Decision-making at the systems and population health levels is informed by acquired population data and can negatively impact nursing processes and intuition. Population- and system-level data mined from domains with significant systemic racism and bias will likely carry this same bias into implementation, which is contrary to ethical nursing practice.

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The integration of AI in health care requires the consideration of intention, moral agency, and fundamental beliefs about nursing care in the 21st century. This consideration extends to related definitions of AI including the American Medical Association's (AMA, 2018; AMA Council on Long Range Planning and Development, 2018) reference to augmented intelligence. AI does not replace good nursing care or the care provided by other members of the interprofessional team. AI augments, supports, and streamlines expert clinical practice. An exploration of AI requires moral/ethical consideration of four key aspects of AI: methodological elements; justice, fairness, and equity; data and informatics; and regulatory principles.

Each nurse will interact with AI in specific ways depending on their scope of practice, role, responsibilities, and area of practice. This impacts and informs individual and population care decisions and navigation within complex health care systems.

Methodological Considerations

Ethical concerns about AI exist because the technology not only may impact an individual patient's end result but also may affect its use in health care throughout the development, design, and testing processes, and in its integration and ongoing use. The methodology used in development, design, and testing has critical importance in the ethical application and use of AI.

- Development, design, and testing (Jobin et al., 2020)
    - The performance of AI is only as good as the data used to develop and design it and the testing that verifies it.
- Reliability
    - Recognition of a pattern does not necessarily mean it is meaningful. Reproducibility and external validity must be significant (Morley & Floridi, 2020).
- Integration
    - Responsibility to ensure appropriate use and outcome requires traceability to ensure ongoing evaluation.

Application/Examples

- Nurses involved in the development of AI have a responsibility to be knowledgeable about the data being used and provide transparency throughout the process.
- Nurses who participate in research or evidence-based practice initiatives have a responsibility to use scientific rigor in ensuring reliability.
- Nurses integrating AI into their practice have a responsibility to ensure the validity of the AI, the appropriate application and use of AI, transparency in the process, and ongoing evaluation for reliability.

Justice, Fairness, and Equity Considerations

Justice, fairness, and equity are interrelated concepts in the AI literature (AMA, 2018). AI has the potential to improve health for many but without proper oversight can also perpetuate and cause injustices and inequities.

- Justice encompasses respect for diversity, inclusion, and equity. Promoting justice requires identification and mitigation of bias, balance between individual and collective interests, recognition of and intervention to address exacerbation of health disparities, prevention of the financial exploitation of data, and elimination of exploitation of vulnerable populations.
- Fairness is defined as minimizing or preventing unwanted bias and discrimination (Berendt, 2019; Rogers et al., 2020). This applies to:
    - Fair access to AI

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  - Fairness-aware data mining procedures that take the broadest view and consider neutrality and independence
  - Fair access to redress and remedy (Kamishima et al., 2012; Rogers et al., 2020).
  - Unfair outcomes resulting from profiling algorithms or those rooted in prioritizing that affect minorities disproportionately and can lead to discrimination and transformative effects on society (Middelstadt et al., 2016)
- Justice and fairness require transparency to promote responsibility and accountability (Jobin et al., 2019; Rogers et al., 2020).

Application/Examples

- As nurses, we need to recognize and call out disparities in AI programming and outputs and consider those disparities in our creation of guidelines and protocols based on AI data.
- Nurses routinely work to eliminate health disparities and must intentionally engage in work that promotes diversity, equity, and inclusion in emerging technology and their associated systems—we cannot forget the people we serve.
- Mitigating bias occurs at the individual level but must be extrapolated to encompass the larger reach of technologies associated with AI.

Data and Informatics Considerations

Consumer/patient applications have taken a data-driven approach. Social media platforms, including online health communities, have become popular destinations where patients can connect and exchange support. Due to the relative ease of accessing publicly available data, many researchers mine social media as a way to get a better understanding of consumer/patient experiences (Lau et al., 2019). Big data refers to large volumes of data that are from varied data sources and received at ever-increasing rates (termed velocity)—often referred to as the three Vs (Oracle, 2021).

- Social media collects varied data in massive amounts; this data is attractive to "traditional" researchers at academic institutions but is also attractive to assorted commercial entities such as advertisers (Staccini et al., 2020).
- Patient users may expect that their data are protected because the data are health-related. This misconception could be compounded if a health care provider recommends or encourages patients to use a device to log and track symptoms or health behaviors (Staccini et al., 2020).

Application/Examples

- Nurses must understand the specific devices and applications that they encourage their patients to utilize for health improvement and help their patients protect their personal data.
- Nurses may educate patients on instances where patients are asked to provide private health and demographic information. Health literacy affects an individual's ability to provide consent to end-user permissions through a notice-and-consent approach. The end-user agreement is often challenging to understand and written in legal jargon. The consent for use is not always transparent about who can use the data and for what purpose. This is problematic, and nurses can help bridge the gap through education.
- Nurses need to consider the complexities inherent in completing forms and providing other information in myriad health care situations. Many health record/health information systems utilize complex software and algorithms that are considered trade secrets and are protected under intellectual property laws. This makes expectations of transparency unrealistic.
- Nurse informaticists need to intentionally engage in system design that protects patients. Nurse informaticists must be aware of firewalls and other barriers when evaluating a system. Even if the software and algorithms are disclosed for the purposes of transparency, many are so intricate and convoluted that the average person may not be able to understand whether

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the system is protecting the privacy of the end user according to the agreement. This situation makes it difficult to evaluate the ethical considerations of a health record/health information system or site.

Regulatory Considerations

It is essential for nurses to be part of the interdisciplinary effort to advocate for an AI governance framework and develop regulatory guidelines that hold AI and advanced technology developers morally accountable. Producing ethical AI helps to achieve the nurse's duty to minimize or avoid harm (Baig et al., 2020; Morely & Floridi, 2020).

- Consistent, ongoing, and rigorous nursing research in the area of AI can slow the ever-growing gap between fast-paced technological advancement and outpaced regulatory measures (Baig et al., 2020; Morely & Floridi, 2020).
- "Any ethical analysis of an AI system by healthcare governing bodies must consider how potential ethical harms arise at different levels of analysis and at different stages of an algorithm's lifecycle" (Morely & Floridi, 2020, p. 255). Nurse researchers, nurse informaticists, and nurse ethicists can be valuable contributors to these governing bodies (Baig et al., 2020; Morely & Floridi, 2020).

Application/Examples

- Nurses should be a part of the drafting and implementation of policy, legislation, and accountability systems for ethical design and practical use of AI and advanced technologies.
- Nurses must continue to contribute research to develop best practices, identify negative implications, and prove the benefits of AI.
- Nurse leaders implementing AI in health care organizations must put forth measures that ensure responsibility and accountability for the safe and sustainable use of AI and advanced technologies.

Summary

Integration of AI in practice must not alter the goals of patient care. Compassion, trust, and caring are foundational principles in the nurse-patient relationship. The continually evolving of advanced digital technologies such as AI must be adopted or integrated into nursing practice within these nursing and ethical care elements so that nursing practice remains relevant in the changing landscape (Fronczek, 2019).

Nurses within their respective domains need to be aware of how AI impacts their nursing processes and their patient outcomes. Within public health, research, and informatic nursing, an awareness of how population data or big data can easily overshadow minority health needs and perpetuate disparities is necessary. Each nurse must consider how AI is integrated into their practice and be cognizant of ways it can help and hurt both individual and population health outcomes.

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ANA acknowledges Ethics Advisory Board members Ian Wolfe, PhD, MA, RN, HEC-C , Jennifer Bartlett, PhD, RN-BC, CNE, CHSE, and Elizabeth Swanson, DNP, MPH, APRN-BC; Center for Ethics and Human Rights Senior Policy and Ethics Advisor Kara Curry, MA, RN, HEC-C, Center for Ethics and Human Rights Director Liz Stokes, PhD, JD, RN, and Center for Ethics and Human Rights intern Amitabha Palmer, PhD who contributed to the drafting of this document on behalf of the ANA Ethics Advisory Board.

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Rasa Fumagalli is an Illinois-licensed attorney and the Director of MSP Complianceervices for Synergy Settlement Services. Rasa and her team provide plaintiff attorneys with initial consultations to address any Medicare Secondary Payer compliance issues that may arise in connection with their clients' personal injury or workers' compensation cases. Prior to joining Synergy Settlement Services, Rasa worked as a workers' compensation insurance defense attorney in the Chicago area. She has spent the last fourteen years focusing her practice on Medicare Secondary Payer compliance issues. Rasa has extensive experience in working with parties to effectuate settlements while addressing Medicare's interests in a reasonable manner. Rasa's knowledge, experience and passion for navigating the intricacies of the Medicare Secondary Payer Act, supporting regulations and CMS allow her to provide valuable and pragmatic guidance in all stages of settlement discussions. Rasa and her husband live in the Chicago area.

Marc P. Orlando, M.D.

Marc P. Orlando is an American Board of Physical Medicine and Rehabilitation certified physician and member of the Medical Advisory Board of the Mayfield Spine Surgery Center where he shifted his attentions after finishing a term as Medical Director of Spine Care at the Trihealth Orthopedic and Spine institute. He has acted as Physician consultant for hospitals and rehabilitation centers in Ohio.

His specialties include: interventional spinal treatments and therapies, such as transforaminal epidural steroid injections, facet injections, nerve blocks, radiofrequency ablation, spinal cord stimulation; treatment of low back pain, complex regional pain syndrome (CRPS), sacroiliac joint pain, herniated disc, spinal stenosis; nerve block and radiofrequency ablation for hip, knee or sacroiliac joint pain; trigger point and major joint injections.

David Rosenbaum, PhD

David Rosenbaum, PhD, is Professor Emeritus of Economics at the University of Nebraska-Lincoln. He has been practicing forensic economics for close to 30 years. He handles cases throughout the Midwest, testifying for plaintiff and defense counsel in state and federal court.

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Dr. Miknevich is involved in education/mentorship on a local and national level, serving as a National Medical Advisory Board Physician for Ossur Americus, participate in amputee related research, had the opportunity to provide input on policy development.

Dale Berry, CP, FAAOP, LP

Dale Berry, CP, FAAOP, LP has practiced prosthetics in Canada, Europe, the Middle East, Haiti and in the U.S.A. Dale is a board-certified prosthetist, a Fellow of the American Academy of Orthotists and Prosthetist and licensed in multiple states. Dale's clinical experiences include 20 years as Vice President of Clinical Operations of the nation's largest provider of prosthetics with over 800 clinics. Dale was also selected to serve as Chairman of the National Academy Microprocessor Forum at Walter Reed Army Medical Center, Team Leader to establish a prosthetic clinic in Kabul Afghanistan to treat landmine victims and Clinical Coordinator to establish a prosthetic clinic at the Albert Schweitzer hospital in Haiti to treat individuals injured with amputation from the 2010 Port-au-Prince earthquake. With over 40 years of experience, Dale has provided care to individuals in numerous countries and settings and is well versed in adapting and applying new technology and techniques to meet the ever-changing demands of patients, referrals and the O&P industry. Dale currently is the owner of Prosthetic Xpert Consultation.

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Life Care Plans and the Medicare Secondary Payer Act

By: by Rasa Fumagalli JD, MSCC, CMSP-F

Keywords: Medicare, Personal Injury, Social Security

Catastrophic injuries constitute a substantial portion of a Nurse Life Care Planner's workload.These injuries often hinder the possibility of a return to work, prompting victims to seek Social Security disability benefits (SSDI).Once SSDI benefits start, individuals become eligible for Medicare after a 24-month waiting period.In some cases, injury victims might already be enrolled in Medicare prior to becoming disabled.Understanding an injury victim's Medicare status at the time of settlement is crucial, given the potential ramifications of the Medicare Secondary Payer Act and its associated regulations on settlements.This article explores the disconnects between a Medicare Set-Aside and a Life Care Plan, offering Nurse Life Care Planners guidance on dealing with Medicare Secondary Payer compliance issues.

Background on the Medicare Secondary Payer Act

The Medicare Secondary Payer (MSP) Act prohibits Medicare from making payments when there is an expectation that another entity will cover the expenses.Specifically, Medicare will not make payments when they can reasonably expect payment from sources like workers' compensation plans, automobile or liability insurance policies, or no-fault insurance plans (42 U.S.C §1395 Y(b)(2)(a)).An exception to this rule occurs when payment is not anticipated promptly, or within 120 days of receiving a claim from the primary payer. In such cases, Medicare may make a payment, contingent on reimbursement to the appropriate Medicare Trust Fund.A primary payer's reimbursement obligation to Medicare can be established through a judgment, payment conditional on a recipient's compromise, waiver, or release, or other means (42 C.F.R §411.22).

Components of MSP Compliance

MSP compliance consists of three primary components:

1. Conditional Payments: This component addresses payments made by Medicare under traditional Medicare Parts A or B for injury-related treatment before settlement. The Benefits Coordination & Recovery Center (BCRC) provides information about conditional payments.Once a final conditional payment demand is issued, it must either be disputed or paid.Failure to reimburse the Medicare Trust Fund could lead to Medicare filing a lawsuit for double damages against responsible ones (42 U.S.C §1395 y(b)(2)(B)(iii); 42 U.S.C.§1395y(b)3).Additionally, Medicare Advantage Organization plans that offer Medicare Parts C and/or D benefits may assert liens based on the MSP Act.Injury victims and their representatives should communicate directly with these plans to address and resolve such liens, as the BCRC does not provide this information.

2. Future Medicals: Consideration of Medicare's interest in future medical expenses released in connection with the settlement is crucial.Medicare cannot make payments if the payment has been made under a liability insurance plan, no-fault insurance plan, or workers' compensation insurance plan.Any settlement involving future medical damages carries the risk of Medicare denying post-settlement injury-related treatment.Strategies to mitigate this risk depend on the case's specifics and the injury victim's risk tolerance.Consultation with an MSP compliance expert is recommended in order to ensure that appropriate steps are taken to avoid potential issues with Medicare.

3. Section 111 Mandatory Insurer Reporting: This component serves as an enforcement mechanism for the MSP Act, ensuring that Medicare remains the secondary payer when a Medicare beneficiary receives a settlement, judgment, award, or other payment from liability insurance, no-fault insurance, or workers' compensation.Reporting is carried out by responsible reporting entities (RREs) representing liability insurers, no-fault insurers, and workers' compensation plans and insurers.RREs must report when the plan has an Ongoing Responsibility for Medical (ORM) or the Total Payment Obligation to the Claimant (TPOC) reaches a certain threshold.Currently, the TPOC threshold for settlements involving a Medicare beneficiary is $750.00 in both liability and workers' compensation cases involving physical injury.RREs must also periodically check the system for claimants who become eligible for Medicare benefits while their claims are open.

Comparison of Life Care Plans and Medicare Set Asides

In personal injury cases, planning for the future medical expenses of an injury victim is a critical aspect of seeking just compensation.Two commonly used tools for addressing this issue are the Life Care Plan (LCP) and the Liability Medicare Set-Aside (LMSA).While both LCPs and LMSAs deal with projecting future injury-related care, they approach this task in different ways.

An LCP is a comprehensive report that helps personal injury attorneys quantify the injury victim's future medical expenses.It serves as a roadmap for demanding sufficient compensation to cover potential future injury-related care and medical bills.One significant characteristic of LCPs is that they often include projections for services that are not covered by Medicare.Examples of such services might include long-term custodial care, massage therapy, or transportation expenses.These are essential components of the LCP, as they provide a comprehensive picture of the injury victim's potential future needs.The primary goal of an LCP is to demand 100% coverage of future injury-related medical expenses in a case.

In contrast, a Liability Medicare Set-Aside (LMSA) is a report that identifies the future injury related Medicare covered treatment that is likely to occur in the future.Unlike a Workers' Compensation Medicare Set-Aside that fully funds the future injury related care, an LMSA is oftentimes apportioned based on the parameters of the particular settlement.This approach recognizes that liability settlements often involve compromises and limited recoveries, especially when compared to workers' compensation settlements.In such cases, the LMSA helps strike a balance between Medicare's interests and the injury victim's net settlement.

Conclusion

In personal injury cases, both LCPs and LMSAs may play crucial roles in planning for future medical expenses.In settlements involving Medicare beneficiaries or injury victims soon to be on Medicare, it's essential that the injury victim and attorney consider the potential impact of the Medicare Secondary Payer Act (MSP Act) on the settlement.A Nurse Life Care Planner should notify their clients of this potential issue whenever their cases involve a Medicare beneficiary or an individual who has applied for Social Security disability benefits.Vigilance in this area and a proactive approach will ultimately benefit all parties involved in the settlement process.Synergy Settlement Services is a valuable resource for Medicare Secondary Payer consulting, offering support to attorneys navigating the complexities of personal injury cases involving Medicare beneficiaries.

Initiating Contact with Physicians

By: Marc P. Orlando, MD

Keywords: Physicians, Collaboration, Providers

All of us have that part of our process that we fear or dread before we get to the finish line with a final draft of a life care plan. As a Life Care Planner, you can't let the contacting treatment providers be intimidating for you. As a physician, I advise you to start with the patient/evaluee. After all, the evaluee is your best resource for your professional provider list that you will ultimately need to contact. We feel comfortable interacting, interviewing, examining the clients and understanding their intimate family details and the numerous encounters that they have had along their medical journey. Start with them to see who the contact person is at each of their treating providers' offices. No doubt they have strong opinions on who is helpful and not so responsive when they call or visit an office provider. Often it may be the medical assistant, secretary, office manager or an Advanced Practice Provider (APP) such as a physician's assistant or clinical nurse practitioner. Find out from the client what barriers and what back door approaches have worked to get the best job done. If there is a surgeon or a provider listed, but the APP does most of the work or the documentation, it may be best to address your questions to both, realizing that more likely than not the APP will be the one who is filling out the paperwork and can provide unexpected insights.

It is critical for the Life Care Planner and Physician to be able to engage to determine the current and future needs of the evaluee/patient and we usually only get one shot at making the connection. So be well prepared the first time. Make your letter concise, easy and clear to read with options for contacting you or returning your request (i.e.

email, fax, and contact phone number for you at minimum). A simple one- or two-page letter presented with places for check marks will get me to fill it out every time. A five-page document that asks me to give examples after each question may sit on my desk for a long time. Remember, every office is different. If the provider goes to more than one office, find out what office your client commonly goes to because a letter sitting on a desk that an M.D. or provider rarely or does not go to anymore is sure to not get returned. If you are calling or have the opportunity to hand deliver your request, make sure you pick a day when the provider is in the office (i.e. not on a day when the provider is in surgery).

If you are calling an office, the same rules apply. Most online Google sites have a draft that shows you the busiest and least busy time to call their office. If they do not, Monday A.M. is typically the busiest and worst day to call or to connect with someone. Fridays tend to be just as problematic and may also be difficult to count on getting a response back on Monday. Take into consideration holidays and vacations when choosing to make your phone contact. It is also possible to consider having your client deliver your letter or list of questions when they next proceed to the office for a visit with the provider. Having a request come from the patient often makes the providers feel more obligated in their response. Conversely if the retaining attorney you are working with is going to be contacting the MD or health care professional, asking them to inquire or even share your letter is much more likely to be a smooth introduction with fruitful feedback than the alternative.

Finally, know your provider. Spend five minutes doing a Facebook, Google, or LinkedIn search. Any opportunity to connect by mentioning something you have in common, i.e. same college, hometown, etc., makes the contact much more flattering rather than awkward. Remember, medical professionals that hear anything to do with legal in your introduction will raise red flags and questions marks thinking, "Am I in trouble?" "Am I getting sued?". Try not to use those terms and express you are working on behalf of the patient and with the patient's permission. If you make a good connection, ask if they have a preferred way to get in touch if there is a next time that you might need them. If they are willing to collaborate offer them a chance to see your final work product. Please and thank you go a long way and cannot be said enough.

Collaboration between Life Care Planners and Physicians are often mutually beneficial and serve the needs of life care patients well in concert. The barrier of initial contact is well worth overcoming and less intimidating that it often seems.

Working with an Economist to Value a Life Care Plan

By David Rosenbaum, PhD

Keywords: Economist, Future Cost Determinations, Costing

Life care planners and economists collaborate to estimate the present discounted value of a life care plan. This article briefly explains how an economist estimates future costs and discounts those costs to a present value. Hopefully, it provides some insights to make that collaboration most effective, and also reveals some pitfalls to avoid.

Projecting Future Costs: A life care plan uses costs at the time the plan was written. This ignores the potential impact that inflation will have on future costs. To address inflation, an economist typically uses some cost index to project the cost of each item in the care plan into the future. If, for example, the current cost of replacing a motorized wheelchair is $10,000 and costs are projected to grow at three percent annually for the next five years, then the replacement in five years will cost an estimated $11,600.

There are a number of sources for cost indices, and each disaggregates costs in a different way. The Consumer Price Index, for example, includes an aggregate index for "Medical Care" and 18 subindices for components like "Physicians Services" and "Prescription Drugs". The breakdown of indices is shown in Table 1. While some economists prefer components of the Consumer Price Index, other economists may prefer a different price index and its component parts. Still other economists may use a single aggregated index for almost all of the cost components in a life care plan. Communication between a life care planner and an economist should indicate the aggregation required in a care plan.

Many life care plans develop broad need categories such as "Evaluation and Management" and "Supplies and Equipment." Within each category, the plan then lists the specific items required. That is fine. My point is that it is helpful to an economist if it is relatively easy to associate each item with a particular cost index. This is important because inflation rates vary significantly across components of any aggregate index. As an example, from 2001 to 2020, the general consumer price index grew at an average annual rate of just under two percent. The medical care component within the index grew at a 3.3 percent rate. Within medical care, physicians services grew at an annual rate of 2.2 percent, while inpatient hospital services grew at 5.3 percent annually.

Things to Think About: When developing a report, the life care planner may want to define clearly each item in the plan and keep items separate where possible. Think about medications, for example. Prescription drug costs have been keeping pace with inflation while non-prescription drug costs have not. If a care plan includes medications, it is useful if the plan places them into prescription and non-prescription categories. Then, an economist can use one index to estimate future costs for prescription drugs and another for non-prescription drugs.

Table 1: Medical Components of the Consumer Price Index

Medical Care
Medical Care Commodities
Medical Care Services
Professional Services
Physicians Services
Dental Services
Eyeglasses & Eyecare
Services by other medical professionals
Hospital and Related Services
Hospital Services
Inpatient Hospital Services
Outpatient Hospital Services
Nursing Home and Adult Daycare
Care for invalid and elderly
Health Insurance
Medical Drugs
Prescription drugs
Nonprescription Drugs
Medical equipment and supplies

As another example, suppose a life care plan calls for surgery some time in the future. Listing the item as surgery combines costs for the surgery facility and the physician. An economist might use the broad cost index "Medical Care Services" to estimate that future cost. If the life care planner can break that surgery cost into facility and physician costs, it is possible to use the narrower index of "Hospital Services" for the former and "Physicians Services" for the latter.

A third example is equipment and maintenance. The future cost of a motorized wheelchair might depend on the "Medical Equipment and Supplies" cost index. In contrast, estimating the future cost of the wheelchair's maintenance might depend on the general Consumer Price Index. Keeping these items separate will result in a more accurate estimate of future costs. Going a bit deeper into this example, if a motorized wheelchair is replaced every five years and gets maintenance every year, does that mean there is maintenance in the year it is purchased as well as the intervening four years, or just those intervening four years? A clear indication will help an economist come up with the best estimate of future costs.

An area where life care planners and economists can overlap is valuing household services. A life care planner may determine that an injured person needs help cleaning and cooking and include those costs in a care plan. An economist includes, as part of their report, any loss in ability to perform household services. This can lead to double counting if all or part of that loss of household services is included in both reports. The more detail a life care planner can provide about the household services included in their report, the less likely the economist is to create an overlap in damages.

Frequency: When Will it Happen and for How Long? Life care plans indicate how often and for how long items are needed. Sometimes a life care plan indicates that an item is needed over a range of time – every three to five years, for example. In these situations, the economist has two choices -- calculate costs once assuming three years and again assuming five years, or split the difference and assume the item is needed every four years. Determining the preferred choice is a discussion an economist typically has with the retaining attorney. Other times, a life care plan includes a need that varies in usage over time. This is particularly relevant for things like therapy when the plan might call for one hour per day, three days per week for five weeks and then twice a week for an hour each time the following five weeks, and so on. If a plan aggregates these therapy costs into a lump sum, be clear about how the aggregate number is calculated. If nothing else, it allows another set of eyes to double check the numbers.

For items that occur less than annually, some forensic experts divide the cost per unit by the number of years that unit lasts and include that average cost every year. If a motorized wheelchair lasts five years, for example and costs $10,000, then the annual cost is $2,000. Using this technique, however, can lead to distortions in cost estimates as compared to including $10,000 every five years.

In my experience, the most difficult item to value is something that occurs only once, at some time in the future. An injured person, for example, might eventually need back surgery. The more guidance the life care planner can provide regarding when the item might be needed, the more accurate the economist's estimates.

An element related to frequency is an indication of how long an item will be needed. This gets to life expectancy. If you are professionally qualified to do so, indicate whether, as a result of the injury, the injured person has a normal life expectancy or if their life expectancy is going to be shortened as a result of their injury. If so, by how much? If you are not qualified to evaluate whether a life expectancy is shortened, perhaps the medical records include the opinion of someone qualified to do so, and you can indicate that opinion in your report.

Like cost indices, there are different sources for life expectancy. The life care planner's estimate of a normal life expectancy may be different than an economist's if they use different sources. Most economists are going to use their preferred source for a normal life expectancy. This keeps an economist's work consistent across cases. It also provides consistency in a case where the economist has to produce two

reports, one estimating the present discounted value of a life care plan and the other estimating the present discounted value of lost earning capacity.

Present Discounted Value: Present discounted value (also sometimes called net present value) answers the following question: How much money do I have to invest right now so that if it sits there and draws interest, it equals the amount I need at some future date? Suppose a life care plan has costs of $11,600 five years from now. At five percent interest, an investment of $9,089 right now will grow to $11,600 in five years. That $9,089 is the present discounted value of $11,600 needed five years from now. An economist will make a similar calculation for each year into the future – the present discounted value of an amount needed six years from now, seven years from now, and so on. All of these present discounted values are added together to get the aggregate present discounted value of the life care plan.

Since the present discounted value calculations depend on the year in which a cost occurs and the amount of that cost, there are a couple of things to consider. If a care plan has a range of prices for a particular item or items, then the economist may want to generate estimates based on the lowest values and then the highest values, or just take the averages. Again, it requires the economist to having a conversation with the attorney.

A Final Word: Life care plans describe the current and future needs of an individual and the costs to meet those needs in current-year dollars. Multiplying current-year-dollar annual costs by life expectancy does not estimate the lifetime cost of a care plan. A life care planner may want to make this clear to their retaining attorney, or not even include such a calculation in a report. Those current-year costs have to be inflated and then discounted to develop the present discounted value of a life care plan. A wise attorney will retain both a life care planner and an economist to develop this final result.

An Example: Consider a hypothetical life care plan example. An injured person needs care over the next 20 years, with the elements of the care plan shown in Table 2. The top part of the table indicates a range of costs for each item, and the table shows the minimum, maximum and average cost of each item. It also shows that some costs occur annually and others occur periodically. The second part of the table shows the aggregate value of the life care plan if costs are added over the 20 years with no concern for inflation or discounting. The aggregate cost ranges from $512,700 to $839,000, with an average of $621,850. The bottom section of the table shows the aggregate present value of the plan when costs are inflated over time and discounted to a present value. Now costs range from $400,865 to $657,174, with an average of $657,174. The present discounted value of the plan is about 78 percent of the value derived by simply adding costs over the 20-year period with no account for inflation or discounting.

Table 2: Hypothetical Life Care Plan

Item	How Often	Minimum Cost	Maximum Cost	Average Cost
Primary Care Physician	Every Year	$500	$1,000	$750
Orthopedic Checkup	Every 5 years	$300	$500	$400
Physical Therapy Evaluation	Every 2 Years	$150	$200	$175
PT and Therapy Sessions	Every Year	$2,000	$2,500	$2,250
Medications	Every Year	$800	$600	$700
Motorized Wheelchair	Every 5 years	$10,000	$10,000	$10,000
Maintenance	Every Year	$200	$250	$225
Home Care	Every Year	$20,000	$30,000	$25,000

Sum of Costs over Twenty Years – No inflation or Discounting	
Minimum Cost	$512,700
Maximum Cost	$839,000
Average Cost	$621,850

Present Discounted Value Accounting for Inflation and Discounting	
Minimum Cost	$400,865
Maximum Cost	$657,174
Average Cost	$621,850

(Editor's note: There is often a lot of conversation and concern about the liability that is created by costing and the "last word" in an LCP. Economists excel at adding a layer of depth, complexity, and legitimacy to any economic concerns based on factors that are often overlooked or are difficult to discern. Questions about the nature of costs in a specific region, expected changes in inflation, discounting of values, and other forms of economic insight that add to projections and costings that are common to LCPs to help the Life Care Planner generate a more effective costing plan.)

Working with the Physiatrist in Life Care Planning for the Patient with Limb Loss

By: Mary Ann Miknevich, M.D

Keywords: Physiatrist, Collaboration, Limb Loss

NURSING DIAGNOSES TO CONSIDER
NANDA-I 2021-2023

Disturbed Body Image. Definition: Negative mental picture of one's physical self.

Risk for adult fall. Definition: Adult susceptible to experiencing an event resulting in coming to rest inadvertently on the ground, floor, or other lower, which may compromise health.

Risk for impaired tissue integrity. Definition: Damage to the mucus membrane, cornea, interaugmentary system, muscular facia, muscle, tendon, bone cartilage, joint capsule, and/or ligament.

Physiatrists, based upon their training and expertise in dealing with individuals with a wide variety of disabling conditions, are exceptionally qualified to create a strong medical basis for Life Care Planning.

Physiatry is the medical specialty of Physical Medicine and Rehabilitation. To become certified, a physiatrist must be a medical doctor who has completed specialty residency training in the field of Physical Medicine and Rehabilitation and received board certification by the American Board of Physical Medicine and Rehabilitation (ABPMR) one of 24 medical specialty boards that comprise the American Board of Medical Specialties (ABMS), which is the premier medical specialty certification organization in the United States.

Section 1, chapter 2 of The Life Care Planning and Case Management Handbook, a central text of life care planning, is entitled "The Role of the Physiatrist in Life Care Planning." It states:

"For a Life Care Plan to appropriately provide for all the needs of an individual, the plan must have a strong medical foundation…. Physicians specializing in physical medicine and rehabilitation (physiatrists) are uniquely qualified to provide a strong medical foundation for life care planning based on their training and experience in providing medical and rehabilitative services to individuals with disabilities. Physiatrists are, through their training, experienced in dealing with individuals who have catastrophic functional problems. Additionally, physiatrists are trained to anticipate the long term needs of their patients" [5, 7].

Why Physiatry?

According to the Association of Academic Physiatrists, Physiatry provides integrated, multidisciplinary care aimed at recovery of the whole person by addressing the individual's physical, emotional, medical, vocational, and social needs. **Physiatry is unique among medical specialties in that its area of expertise is the functioning of the whole patient**, as

compared with a focus on an organ system or systems. This holistic approach to the patient, accompanied by its focus on quality of life for the persons served, makes it an ideal specialty to be involved in the life care planning process.

Physiatrists commonly treat patients with neurologic and musculoskeletal conditions, including those with catastrophic illnesses and injuries.

Physiatrists are also adept in providing direction for the multidisciplinary rehabilitation team, coordinating the efforts of all working together to maximize the care provided to each unique patient. They work closely with physical, occupational and speech therapists, rehabilitation nurses, psychologists, case managers and social workers, prosthetists and orthotists and other physicians involved in the patient's care.

Common Conditions Treated by Physiatrists Include:

1. Amputations
2. Brain Injury
3. Cancer
4. Cerebral Palsy
5. Dysphagia
6. Multiple Sclerosis and Other Neurological Conditions
7. Muscular Dystrophy
8. Osteoarthritis
9. Parkinson's Disease
10. Spasticity & Movement Disorders
11. Spinal Cord Injury
12. Spine Pain
13. Sports-Related Injuries
14. Stroke

Although treatment of the many conditions addressed by physiatry is beyond the scope of this article, treatment of the patient with limb loss is an area in which a physiatrist can provide significant meaningful information for the life care plan.

Medical Assessment of the Patient with Limb Loss

1. Surgical Principles
   a. Amputation surgery should be based on sound biomechanical principles.
   b. Maximal level of restoration is equal to the condition of the residual limb and degree of function provided.
   c. Long-term complications and comorbidities can be minimized by utilizing techniques to save the knee whenever possible in lower extremity amputations and saving all possible length when dealing with upper limb amputations.
   d. The best prosthesis cannot compensate for poor surgical technique. (Figure 1)

   e. Avoid skin grafts over weight-bearing areas whenever possible, performing Myodesis (where the muscles and fascia are sutured directly to the bone through drill holes) results in a residual limb that is more structurally stable. It is however contraindicated in severely dysvascular limbs. Myoplasty, (where the opposing muscles are sutured to each other into the periosteum at the ends of the cut bone with minimal tension) generally takes less operating time and may be the procedure of choice in dysvascular cases. Newer techniques, such as targeted muscle reinnervation or Targeted Muscle Re-innervation (TMR) and regenerative peripheral nerve interface (RPNI) procedures, when done at the time of amputation have been shown to significantly reduce the incidence of neuromas and phantom limb pain. Fat grafting techniques are now being performed in cases of adherent scar/poor soft tissue coverage.

Phases of Management of the Person with Limb Loss

Losing a limb or part of the limb, and in some cases multiple limbs, is devastating to the person involved not only physically, but also emotionally. Providing a framework for obtaining needed medical information while addressing the patient's needs, desires, and plans for the future is critical, while tempering this information with the reality of the patient's condition and the limits of current technology. Meeting with the treatment team and providing information to the patient and family and a timeline for the prosthetic fitting and training process is especially important in helping the person with limb loss establish appropriate goals.

Amputee Clinic Model

The team concept of multidisciplinary care was involved during World War II when the Surgeon General of the

Army put amputee centers within the Army hospitals to improve care of amputees. An impetus was given by the Veteran's Administration in 1948 when suction suspension was introduced for the above-knee amputees. Protocols were established in which the amputee clinic team initially comprised the physician, the prosthetist, and the therapist.

Several studies have demonstrated the efficacy of amputee rehabilitation coordinated by physiatry. Stineman at al. Found that lower limb amputees who received inpatient rehabilitation at the Veterans Administration Hospital postoperatively gained, on average, 8 more motor Functional Independence Measure points than those who did not.[6]

My Limb Loss/Limb Difference Clinics are sponsored by the Pennsylvania State Office of Vocational Rehabilitation— An OVR counselor attends all clinics. All certified Prosthetics companies can request to attend. Prosthetists, Resident Physicians, PTs/OTs, Prosthetic Residents, Researchers are welcomed. The patient (and family) are key members of the team and are included in decisions which impact care. The clinics serve as a forum for new information/problem solving. They provide an opportunity for patients to meet others in various stages of prosthetic care, and provide pre-prosthetic, prosthetic and f/u care and learn about research opportunities.

Information Typically Included in the Initial Prosthetist Assessment Includes:

Patient Pre-Prosthetic Assessment

1. Reason for and date of amputation
2. Hospital Course
3. Dates of revisions, complications
4. Prior/current ambulatory status/current mobility equipment being used
5. Prior/current self-care (ADL) status
6. Therapy (PT/OT) interventions to date
7. Cardiopulmonary status
8. Neurological status
8. Peripheral vascular status
10. Diabetic control (if pertinent)
11. Phantom limb sensation/Phantom Limb Pain
12. Edema control measures
13. Psychological impact of limb loss
14. Current Medications
15. Pertinent Family History
16. Review of Systems-including chest pain, shortness of breath
17. Social History
18. Previous work and avocational interests
19. Future work and activity goals
20. Living situation
21. Stairs
22. Slopes/Slants
23. Uneven terrain
24. Tobacco Use
25. Alcohol use
26. Illicits
27. Driving history
28. Plan to return to driving
29. Other transportation needs
30. Vital Signs
31. Mental status
32. Vision limitations
33. Peripheral vascular status, including pulses
34. Surgical incisions/state of healing
35. Skin wounds/lesions
36. Residual limb skin mobility
37. Degree of edema present
38. Induration
39. Tenderness
40. Residual limb shape
41. Presence of redundant tissue
42. Graft and graft-donor sites
43. Passive/Active Range of Motion to assess for contractures
44. Joint stability
45. Sensation in residual limb and remaining limbs
46. Strength in all extremities
47. Sitting/standing balance

Initial Treatment Recommendations are Based on Initial Pre-Prosthetic Assessment

1. Introduce Prosthetic Treatment Team
2. Initiate plan for Pre-prosthetic program, Prosthetic fitting, and follow-up plans for the patient and team
3. Initiate shrinker or rigid removable dressing when appropriate
4. OT for ADL's (Activities of Daily Living)
5. Psychological support
6. Individual counseling if needed
7. Options for peer visitation
8. Support groups (national and local)
9. Plan for appropriate level of care for pre-prosthetic and prosthetic care

Medicare Functional Levels

LEVEL		ACTIVITY
Functional Level 0 (K0):	Non-ambulator	None
Functional Level 1 (K1):	Household ambulator	Fixed Cadence
Functional level 2 (K2):	Limited community ambulator	Fixed Cadence
Functional level 3 (K3):	Community ambulator with ability to walk at various speeds	Variable Cadence
Functional level 4 (K4):	Ambulator who exceeds basic walking skills (active adult, child, athlete)	Variable Cadence

(Figure 2)

10. Establish Medicare K Level (Anticipated Functional level)
11. Discuss and establish initial goals with patient and family
12. Establish plan for Prosthetic Prescription as appropriate

Prosthetic Prescription

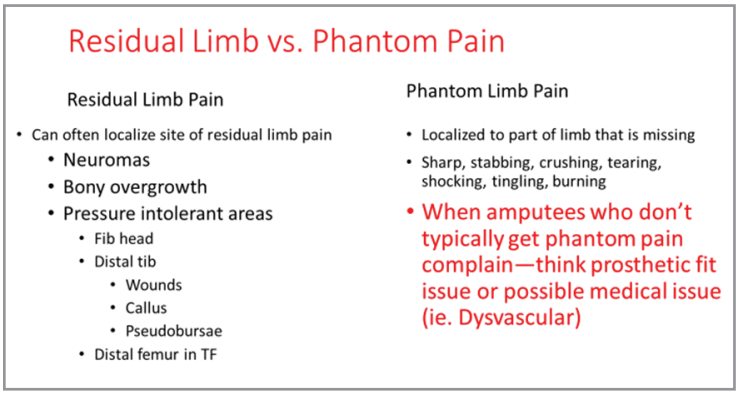
1. Think Function!
2. Decisions based on patient's needs, desires, plans for future--tempered with reality of the patient's condition and limits of technology and funding sources
3. The Physiatrist needs to be up to date on the latest:
   a. New Trends in Cosmesis
   b. Socket interfaces
   c. Socket design
   d. Suspension systems
   e. Foot and ankle designs
   f. Microprocessor Technology
   g. Bionics (Motor Power)
   h. Neural Engineering

Timing of Assessments

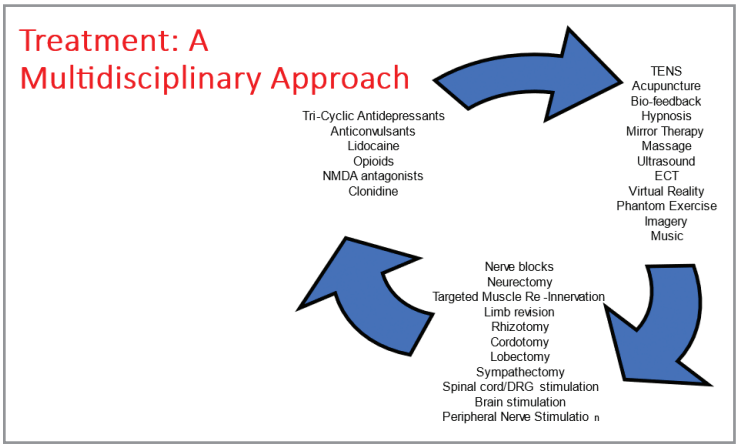
1. Varies by case, but in general:
   a. Pre-operatively (if elective surgery planned)-not always possible
      i. Immediately post-op
      ii. Once staples/sutures out
      iii. Once preparatory/check socket fitted
      iv. After discharge from In-Patient Rehab or at about 1 month if receiving out-patient therapy
      v. 1 to 3 months, depending on individual needs--such as need for medications, limb shrinkage, skin problems
      vi. 3 to 6 months or longer based on individual patient need

It is important when developing a life care plan for a person with limb loss, to recognize that certain conditions can lead to the need for more frequent prosthetic changes, including changes in the type of equipment being prescribed, the physical assistance and mobility needs of the patient, and future needs for additional evaluative services, emergency visits, surgeries, and hospitalizations.

Pain issues in the amputee are a tremendous source of suffering and expense for the person with limb loss. Multimodal pain management techniques are sometimes needed in this population as no one particular intervention works for all patients. Figure 3 shows differentiation of phantom pain versus residual limb pain and possible causes. Figure 4 shows Multidisciplinary Treatment Options for Amputee Related Pain.



(Figure 3)



(Figure 4)

It has been well shown in the medical literature that musculoskeletal compensatory overuse syndromes are common in this population, and are associated with gait deviations, gait asymmetry, and upper limb weight-bearing. This can lead to nerve entrapment syndromes, premature degenerative disease in the weight-bearing joints and spine that lead to requirements for additional care.[4] Overuse syndromes are also seen with upper limb amputees.[1]

The challenges of aging with an amputation lead to even more issues related to care needs. The Amputee Coalition/ Limb Loss Task Force, Roadmap for Preventing Limb Loss in America: Recommendations from the 2012 Limb Loss Task Force. Knoxville, Tennessee; 2012. noted that people with limb loss are at an increased risk for cardiovascular disease, obesity, and joint and bone issues, as well as experience high rates of depression and emotional distress.[3]

Although once again beyond the scope of this article, development of bony overgrowth in the residual limb and neuroma formation can be considerable sources of pain in the person with limb loss. Bony overgrowth/heterotopic bone formation can result in development of wounds and prosthetic fit problems that may require eventual surgical intervention. Neuroma formation and residual limbs is felt to be a major source of not only neuropathic pain but phantom limb pain. Newer surgical procedures such as TMR and RPNI may be needed. Adherent skin and wounds can lead to the need for additional surgical revisions and possibly newer techniques such as fat grafting. This can also be a source of pain and lead to the need for more frequent prosthetic modifications.

Development of contractures can lead to progressive impairment in mobility, abnormal pressures, pain, and skin breakdown. Severe contractures can limit the ability to utilize a prosthesis. Prevention is the best treatment.

Skin conditions in this population are also extremely common and can result in the development of wounds, pain, limited ability to wear the prosthesis and the need for medications and prosthetic changes.[2]

Poorly fitting prosthetic devices, or conversely, the patient with edema problems which are poorly controlled can develop multiple skin issues and pain related conditions resulting in the need for prosthetic modifications or replacements. Common complications can include sinking too far into the socket with distal end bearing and wounds. (Figure 5) Other problems can include lack of distal contact resulting in vacuum bruising or distal limb edema problems or development of pseudobursae. (Figures 6 and 7) These types of problems can lead to infections, skin breakdown, pain and even the need for surgical intervention or limb revision.

(Figure 5)

(Figure 6)

(Figure 7)

Falls are a major and costly complication in this population. [7] Problems with prosthetic alignment can lead to compensatory gait deviations which can cause worsening musculoskeletal pain and increase the risk of falls.

At times, patients are seen utilizing devices and components that are not appropriate for their functional level. Sometimes these devices are too heavy or unstable for a particular patient, leading to falls or difficulty using the device.

Common Complications that Can Cause Long Term Impact for the Person with Limb Loss

1. Pain Issues

a. Phantom Limb sensation/Phantom Limb Pain
b. Residual Limb Pain
c. Emotional Pain
d. Neuropathic Pain
e. Compensatory Overuse Conditions
f. Aging with a Disability

2. Perioperative

a. Neuromas
b. Bony Overgrowth/Heterotopic Bone Formation
c. Wound Healing Issues
d. Wound Dehiscence/Skin Necrosis
e. Adherent Skin

3. Amputee Related Problems

a. Contractures
b. Skin Conditions
   i. Epidermoid Cysts
   ii. Dermatitis
   iii. Contact
   iv. Allergic
   v. Superficial Mycosis
   vi. Folliculitis

Prosthesis Related Problems

a. Distal end bearing
b. Pseudobursa/Adventitial Bursa Formation
c. Distal Limb Edema
d. Vacuum Bruising
e. Abnormal Alignment
f. Incorrect Equipment for Patient's Functional Needs
g. Falls (Can be amputee or prosthesis related)

As a physiatrist who has worked with many catastrophic cases in my career, I have learned over the years what works well for me when working with Life Care Planners.

What Works Well:

a. Establishing a collaborative relationship where information is shared, and ideas discussed (sometimes on multiple occasions) in the formation of a formal Life Care Plan.

b. Meeting formally with the Life Care Planner and the patient/family together whenever possible as this tends to maximize consistency of the information obtained.

c. Making sure that I have access to any appropriate records that are being used in developing the Life Care Plan for a particular patient, including home assessments, photographs of the home and patient.

d. Making sure that I have been able to review any methodology and figures used for determining costs and cost projections prior to being asked to sign off on a plan.

What Does Not Work:

a. Showing up unannounced at my office during a patient visit (sometimes with the patient's attorney) with a list of questions I am expected to answer.

b. Adding care or equipment to a plan that cannot be justified by the patient's examination and records.

c. Minimal communication with the Life Care Planner before being asked to sign off on their plan (often with a short window of time before deadlines are due for the case).

d. A Life Care Planner saying, "just tell me what you think" and then saying "that was what I was thinking" for every question with no opinion of their own.

The Physiatrist can be an invaluable resource in establishing the medical basis for a Life Care Plan, based on their experience and training in providing medical and rehabilitative care to individuals with a variety of disabling conditions and addressing their long-term care needs. Forming collaborative relationships with those involved in developing the future care plan for our patients is essential to providing the best outcomes.

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Coordinate, Communicate, and Corroborate:

Keys to Life Care Planning for Prosthetics.

By Dale Berry, CP, FAAOP

Keywords: L-Codes, Prosthetic Planner, Replacement Frequency

By definition, the life care plan is a dynamic document based upon published standards of practice, comprehensive assessment, data analysis, and research, which provides an organized, concise plan for current and future needs with associated costs for individuals who have experienced catastrophic injury or have chronic health care needs. (IARP, 1998) To accomplish the task, the standard of practice is for the Life Care Planner to provide collaboration with healthcare consumers, healthcare providers, and others, to produce an accurate life care plan. (AANLCP SOP).

A predictable challenge for a Life Care Planner is to have the necessary insight, experience, and knowledge for the wide array of clinical specialties required to treat individuals with an array of injuries and subsequent co-morbidities. For an individual with an amputation, the life care plan requires coordination and corroboration with other medical and rehabilitation professionals to address the impact of amputation and its associated impairment on all life roles. (Meiers, 2013).

Producing an accurate and defendable life care plan for an individual with an amputation necessitates the insight of a clinical specialist familiar with the design and fabrication of a prosthesis. In addition to clinical skills, it is also imperative that the prosthetic consultant be familiar and experienced with the intricacies and nuances of documenting and validating assumptions, observations and opinions related to prosthetic life care projections, which can be subjected to withstand the scrutiny of meeting a "reasonable degree of scientific certainty".(Department of Justice)

Coordination: Clinical Provider vs Clinical Planner

Understanding the clinical history and accumulation of clinical records serves as a fundamental source of information for a life care plan, which by default involves interaction with the individual's clinical provider. Although the clinical provider may be highly qualified to provide clinical treatment for the individual, it does not by default establish the clinical provider to be qualified or suitable as a consultant to assist in prosthetic life cost projections. Of primary focus, the prosthetic provider arguably has a financial interest in the outcome of a pending litigation. An individual with an amputation of an arm or a leg is a potential lifelong client for the prosthetic provider. This scenario therefore creates a perceived self-interest for the prosthetic provider to potentially escalate prosthetic services and costs in the life care plan. In addition, the focus and expertise of the prosthetic provider is to provide care to the individual, which is not the focus or priority of a life care plan, which is to calculate future costs related to future prosthetic services and devices.

Securing the consultation services of a clinical specialist Prosthetic Planner that is not treating the patient provides for

a truly independent assessment of future prosthetic services and expenses. In addition, the specific skillset of a prosthetic provider is significantly different from that of a prosthetic planner.

Communicate: Patient Assessment and Records Review.

The individual's prosthetic records routinely contain the necessary details and specific information to create an accurate, relevant, and defensible report. In order to design and fit an individual with a prosthesis, the prosthetic records will contain age, weight, relevant anatomical measurements, functional level as well a detailed listing of prosthetic components, and specific billing codes to clearly identify the style and retail cost of the prosthesis. In the event the prosthetic records do not provide all the necessary information and additional insight is required, a virtual Telehealth Prosthetic Assessment can be performed via secure internet connection to acquire the necessary details and specifics. Since the prosthetic planner is not physically fitting the patient with a prosthesis, hands-on evaluation would be considered unwarranted as the required and essential details related to a prosthetic plan can be secured visually and through verbal communication.

Skill Set	Prosthetic Provider	Prosthetic Planner
Patient Fitting	Primary focus is to fit a prosthesis to accommodate the patient's current condition.	Primary focus is assessing a patient's current condition and care to provide insight for a long term prosthetic life plan.
Device Selection	Patient treatment decisions guided by contract language, medical necessity limitations, benefits carve-outs and availability of financial resources.	Applies clinical standards of care for optimum prosthetic component selection without regard to insurance coverage or financial limitations.
Prosthetic Projection	Skillset and experience are hands-on fitting of the patient in the current condition.	Skillset and experience are assessing and projecting long-term lifelong prosthetic care based upon established clinical standards of care and available prosthetic usage data.
Pricing	Familiar with local facilities and regional contract pricing.	Utilizes national pricing profiles of Fair Market Value, Usual & Customary and Manufacturer Suggested Retail Pricing.
Authoring Reports	Provider is experienced in writing electronic medical records (EMR) used for communication between health care professionals.	Experienced in writing detailed reports to disseminate technical information to non-healthcare professionals.
Publication Validation	In the course of day-to-day documentation, no requirement to validate or support clinical records with peer reviewed published evidence.	Experienced in supporting, validating and verifying observations, statements and opinions with peer reviewed published evidence, regulatory standards and clinical standards of care.

For prosthetic design and component selection, it is imperative to take into consideration that for 1-2 years after amputation surgery, there are some very specific physiological issues that must be clinically addressed when providing a prosthesis (Ulger et al., 2018). The primary post-surgical issue for prosthetic fitting is post-surgical edema which increases the size and shape of the residual limb. Although compression therapy will assist in edema reduction, a significant contributor to edema reduction is movement and exercise to stimulate vascular and lymphatic return which is positively affected by wearing a prosthesis. (Samuelson, 2017) In addition to edema reduction, the muscles within the residual limb will also undergo atrophy due to no longer being utilized to create movement in the limb that is now amputated. These early rehabilitation post-surgical physical conditions create specific and unique needs for clinical care services, replacement cycles and billing occurrences that are not consistent nor required with long term care. Commonly, the optimal style, make and model of prosthesis that is determined as medically necessary during the initial rehabilitation stages while the individual learns to function and operate with a prosthesis, will be different from the style make and model prosthesis that will be deemed optimal and medically necessary for long term care.

A secondary factor to be considered with prosthetic billing records is to take into consideration the insurance and benefit

limitations the individual may have for prosthetics. Dependent upon the specific insurance contract language and benefit coverage restrictions, it is plausible that the patient may not be wearing the optimum prosthetic design as determined by clinical standards of care and medical necessity, but rather is wearing the prosthesis that was determined and limited by confined insurance contract, benefit restrictions, policy language and or financial constraints. Coordination with a Prosthetic Planner can utilize the information and details contained within the prosthetic history to identify the most commonly utilized and optimal predictive prosthetic designs to accommodate the amputation, functional and activity level for the individual.

Corroborate

A key to optimizing clinical insight and experience of a prosthetic planner is to provide detailed specific information as opposed to asking specific questions in anticipation that the questions asked will provide accurate and defendable information. It is not uncommon for some Life Care Planners to submit a list of questions to a prosthetic provider with the assumption that the answers will support the life care plan with accuracy. For example, a Life Care Planner may submit a list of current prosthetic billing L-Codes to a prosthetic provider and request the reasonable life expectancy of the prosthesis. If the individual recently received a preparatory prosthesis to initiate prosthetic rehabilitation, a prosthetic provider would provide accurate life expectancy projection for a preparatory prosthesis of 12 to 18 months. This accurate projection would be inaccurate and unrelated to the actual reasonable useful life of a definitive prosthesis of 5 years. (CFR, 414.210). In comparison, by clearly communicating with a prosthetic planner to utilize past prosthetic care to determine future prosthetic needs will produce accurate information to fully support an accurate Life Care Plan.

Another often misleading question made by Life Care Planners is to inquire as to the warranty of a prosthesis, which a prosthetic provider will identify an accurate reply of, for example, 3-years for a microprocessor knee. A Life Care Planner may then inappropriately apply a replacement cycle of 3 years for a microprocessor knee assuming warranty has a relationship to the replacement cycle. Warranty of a device simply identifies a time frame as to who is responsible for the cost of repairs of a prosthetic component. When the device is under warranty, the manufacturer is financially responsible for the cost of repairs and maintenance. When the device is out of warranty, the owner of the device is responsible for the cost of repairs and maintenance. Warranty has no relationship or influence as to the life expectancy or replacement cycle of a device. A prosthetic planner in comparison will instead focus on the manufacturer published product service lifetime standards that determine the reasonable useful life and replacement cycle of specific prosthetic components, all of which exceed the warranty of the component.

Conclusion

When producing a Life Care Plan for an individual with an amputation, depending upon the amputation level and comorbidities, the costs for prostheses can predictably be one of the largest line items in the plan. To ensure production of an accurate and defendable life care plan:

Coordinate with a Prosthetic Planner, one experienced in future care based upon clinical standards of care and medical necessity.

Communicate all relevant clinical and medical documentation with a Prosthetic Planner to serve as the foundation to project future care.

Corroborate with a Prosthetic Planner to interact cooperatively identify all relevant criteria to ensure accurate answers are being addressed to the pertinent and relevant questions.

(Editor's note: Prosthetic Planning is a new service with as-of-yet few providers and the author provides this service. The editor is confident in the authority of this article, despite the potential financial incentive tied herein).

Glossary

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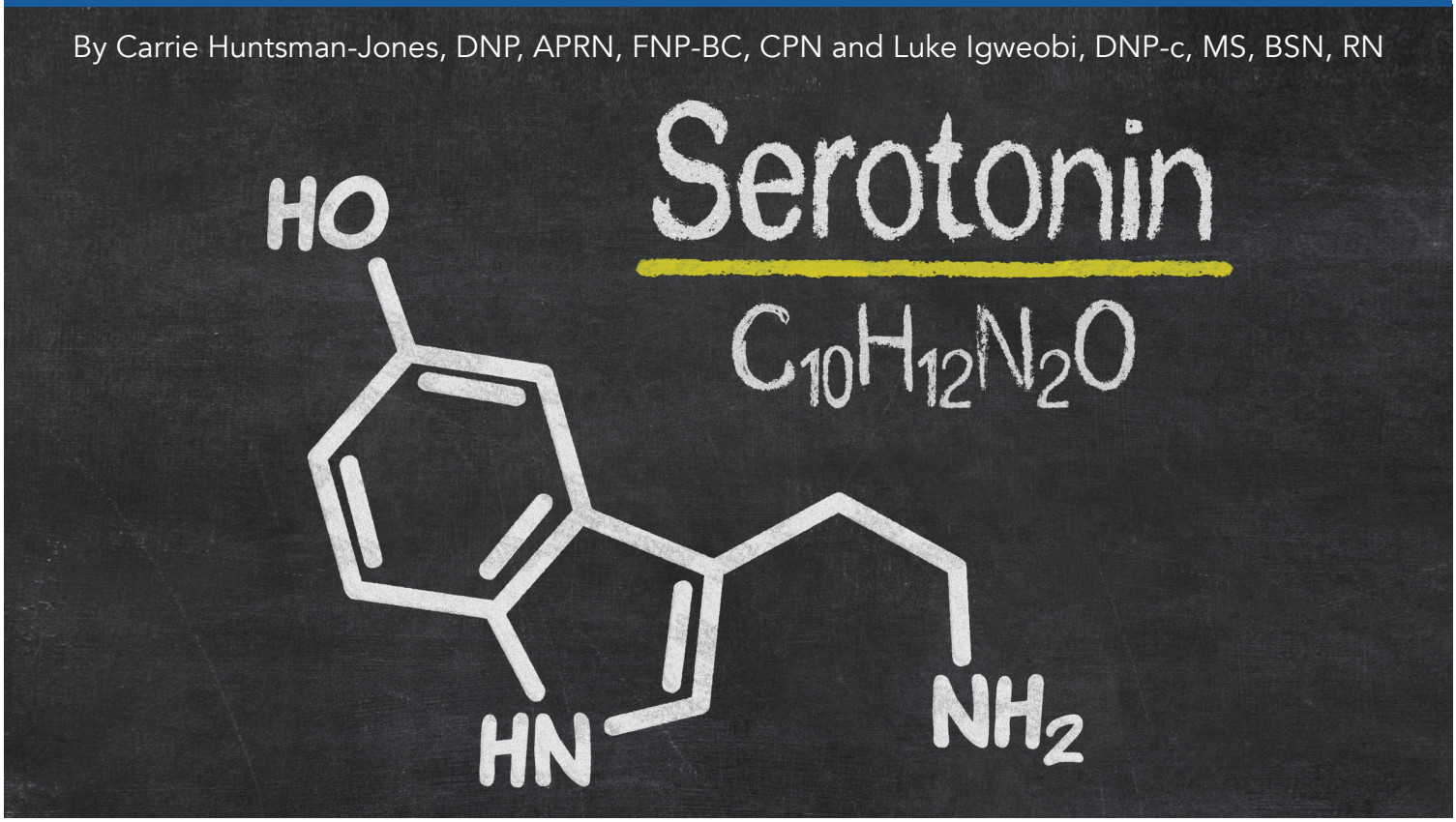
THE RISE OF SEROTONIN SYMDROME

By Carrie Huntsman-Jones, DNP, APRN, FNP-BC, CPN and Luke Igweobi, DNP-c, MS, BSN, RN



Keywords: SSRIs, Medication Side Effects, Life-Threatening Event

NURSING DIAGNOSES TO CONSIDER
NANDA-I 2021-2023

Impaired comfort. Definition: Perceived lack of ease, relief, and transcendence in physical, psychospiritual, environmental, cultural, and/or social dimensions.

Acute confusion. Definition: Reversible disturbances of consciousness, attention, cognition and perception that develop over a short period of time, and which last less than three months.

Deficient knowledge. Definition: Absence of cognitive information related to a specific topic, or its acquisition.

As mental health services are becoming less stigmatized and more available to patients, there has been an increase in the number of people who are benefiting from medication management. In the United States, antidepressant usage has seen a significant rise, especially post COVID-19. There has been an explosion of antidepressant medication prescriptions in the last few years alone (Ettman et al., 2020; Jacob et al., 2021), though the numbers have been steadily climbing for many years (Brody & Gu, 2020). This has also led to an increase in the number of people who may experience adverse side effects from taking these medications. The most common adverse side effect is called serotonin syndrome which is described as having an excess amount of serotonin in the body.

Cases describing excess serotonin were initially identified in the 1960s, however, it didn't become widely known and accepted until an article by Insel et al., (1982) named the occurrence. Insel and his team identified two patients who had unusual drug reactions that were similar to each other, and they called the reaction Serotonin Syndrome. Since that time, it has become recognized as a rare, yet potentially life-threatening concern that can easily be missed by patients and caregivers if they are not aware of the early symptoms and report for care quickly.

While there are a variety of medication classifications available to treat mental health conditions, one of the most common medication categories that are being prescribed to patients in the outpatient setting are selective serotonin reuptake inhibitors (SSRI). This category of medication includes such drugs as sertraline, escitalopram, and fluoxetine, to name a few (Edinoff et al., 2021). As the need for mental health providers outstrips the supply, more primary care providers (PCP) are stepping up to provide this service (Olfson, 2016). While these medications are generally considered to be safe and effective in treating patients, the lack of specialized

providers has left a potential gap in the ability of providers to carefully monitor patients for serious side effects that need to be addressed quickly, as it could potentially lead to death if left untreated.

Serotonin, or 5-hydroxytryptamine (5-HT), is a neurotransmitter that acts like a hormone in the body by carrying messages between various nerve cells in your brain and body (Bamalan et al., 2022; Cleveland Clinic, 2023). The majority of serotonin is found in your intestines, where it is released into your blood and absorbed by the body's platelets. A small amount of serotonin is produced in the brain; however, this is not the primary location of production (Cleveland Clinic, 2023; Talton, 2020). Serotonin does not cross the blood-brain barrier and must be transported by serotonin transporters (SERT). When serotonin is released from being stored in the presynaptic areas of the brain stem, it can either stimulate the neuron receptors or be taken back into the presynaptic terminals for reuse (Talton, 2020).

Serotonin is involved in the regulation of a variety of areas in the body. These can include mood, memory, sleep, sexual drive and desire, as well as bone health, wound healing, and digestion (Bamalan et al., 2022; Cleveland Clinic, 2023). It is produced by tryptophan, which is an essential amino acid that is not made in the body. This amino acid must be obtained from sources outside the body, primarily in the foods we eat. A few food based sources of tryptophan include eggs, diary, fish, turkey, nuts, seeds, oats, chocolate, and tofu (Begum, 2022; Cleveland Clinic, 2023; Talton, 2020). A popular belief is that if a person eats more foods that are high in tryptophan, they will be able to increase the amount of serotonin in the brain. This is not true as tryptophan is in competition with various other amino acids so a person would be unable to get enough tryptophan to make a difference (Young, 2007). While eating tryptophan won't automatically increase the amount of serotonin in the body, it is a necessary ingredient in its formation and should be ingested as a basic food source.

The category of medications that are listed by the name of SSRIs work in the body by inhibiting the presynaptic reuptake of serotonin which allows more serotonin to be available to be used by the body (Edinoff et al., 2021). Serotonin syndrome occurs when there is an overactivation of peripheral and central postsynaptic 5HT-1A and 5HT-2A receptors. This most often occurs when a patient takes medications that increase serotonin levels, and this pushes the amount of serotonin too high in the body. The syndrome most commonly occurs within 24 hours of having a medication increase, however, it can occur at any time (Volpi-Abadie et al., 2013). While SSRIs are the most common medication classification to cause the issue, nearly all medications used to treat mental health disorders have the potential to cause serotonin syndrome either when given alone or in combination with other medications (Mayo Clinic Staff, 2022).

As for who is taking antidepressants in the United States, there are some groups who are more inclined than others. Women are more likely to take a prescription for depression and this number increases with age. People who identified as Asian were less likely to take antidepressants than other groups, while those who identified as non-Hispanic white were the highest group to take the medication. Lastly, those individuals with only a high school degree or less were less likely to take antidepressants than those who had at least some higher education (Brody & Gu, 2020). As SSRIs are one of the most common medications for depression, there may be an increased risk for these patients related to adverse side effects.

Serotonin syndrome can be seen in any age group from pediatrics to geriatrics. With the increase in the number of people who are taking prescription medications related to mental health concerns, there has been an increase in the number of people who have experienced adverse side effects. In 2016, it was reported that serotonin syndrome related to drug overdoses was listed as the ninth most common cause of death in the United States (Scotton et al., 2019). Clearly there is a need to monitor for this adverse side effect.

The symptoms associated with serotonin syndrome can be subtle. There are three main body systems that are affected by an overabundance of serotonin. These include the autonomic, neuromuscular, and neurological systems. Depending on which system is overstimulated will depend on which side effects will be produced in the body. In the case of the autonomic nervous system, the most common side effects include hyperthermia, diaphoresis, nausea, and vomiting however, it can also cause arrhythmias, tachycardia, tachypnea, which can all lead to life threatening events if they go untreated (Bamalan et al., 2022). Death, while rare in patients who experience serotonin syndrome, can happen within a few hours to a few days from the onset of symptoms (Prakash et al., 2021).

Neuromuscular side effects may be the easiest for others to notice in a patient who is suffering from serotonin syndrome. These may include involuntary movements such as tremors, myoclonus, hyperreflexia, and hypertonia (Bamalan et al., 2022). If a caregiver sees any unexplained or new involuntary muscle movements, especially in a patient who has recently increased their dose of an SSRI medication, they should be concerned about serotonin syndrome and the patient should be evaluated by a medical provider.

The last area where a patient or caregiver may see changes in a patient related to side effects of an overabundance of serotonin is neurological. At the most basic level, the patient is being evaluated for any change in behavior or cognitive ability. This can include becoming more agitated, inability to sleep, increased anxiety, and unexplained confusion (Bamalan et al., 2022).

Body System	Adverse Side Effects
Autonomic	Hyperthermia • Diaphoresis • Nausea • Vomiting • Arrhythmias* • Tachycardia* • Tachypnea*
Neuromuscular	Involuntary movements • Tremors • Myoclonus • Hyperreflexia • Hypertonia
Neurological	Agitation • Inability to sleep • Increased anxiety • Unexplained confusion • Tachypnea*
	*Potentially life-threatening. If you notice any of these symptoms or have any concerns related to serotonin syndrome, the patient should be seen by a health care provider as soon as possible. And all life-threatening side effects should seek care at an Emergency Department urgently.

While serotonin syndrome can happen to anyone, elderly patients, in particular, should be monitored closely for symptoms. They are at an increased risk for developing serotonin syndrome primarily due to their increased likelihood of experiencing polypharmacy, as the more medications a patient is on, the more likely the incidence of serotonin syndrome is to develop (Acharya et al., 2021; Kratz & Diefenbacher, 2019; Wang et al., 2016). Another concern is that when there is an increased level of serotonin in the body, this may trigger an increase in the aggregation of platelets which can then lead to an increased risk for bleeding in a population that is already at risk (Kratz & Diefenbacher, 2019). Lastly, as body systems change over time, an elderly patient may develop changes in how they process medications (Drenth-van Maanen et al., 2020) which could lead the patient into developing complications from excess serotonin.

Medications That Increase Risk of Serotonin Syndrome

Drug	Class
Antidepressants: Monoamine oxidase inhibitors	Isocarboxazid • Linezolid • Phenelzine • Selegiline • Tranylcypromine
Antidepressants: Serotonin-norepinephrine reuptake inhibitors	Bupropion • Nefazodone • Trazodone • Venlafaxine
Antidepressants: Selective serotonin reuptake inhibitors (SSRIs)	Citalopram • Escitalopram • Fluvoxamine • Fluoxetine • Paroxetine • Sertraline
Antidepressants: Tricyclic antidepressants	Amitriptyline • Amoxapine • Desipramine • Doxepin • Imipramine • Nortriptyline Protriptyline • Trimipramine
Central nervous system (CNS) stimulants	Amphetamine • Cocaine • Methamphetamine • Methylphenidate • Phentermine 3,4-Methylenedioxyamphetamine (MDA) • 3,4-Methylenedioxymethamphetamine (MDMA, or Ecstasy)
Hallucinogens	Lysergic acid diethylamide (LSD) • 5-Methoxy-diisopropyltryptamine
Herbs	Nutmeg • Panax (Asian or American) ginseng • St John's wort • Syrian rue
5-Hydroxytryptamine (5-HT1) agonists (triptans)	Eletriptan • Frovatriptan • Naratriptan • Sumatriptan • Zolmitriptan
Opioids	Buprenorphine • Fentanyl • Hydrocodone • Oxycodone • Meperidine • Tramadol
Others	Buspirone • Chlorpheniramine • Dextromethorphan • Levodopa • Lithium • Metoclopramide Olanzapine • Ondansetron • Risperidone • Ritonavir • Tryptophan • Valproate

(Merck & Co, 2023; Volpi-Abadie et al., 2013)

Serotonin syndrome can be very serious and even life threatening if left untreated. As mentioned previously, the most dangerous time to monitor patients for this medication side effect is within the first 24 hours of an increase in their SSRI medication, however, it can occur at any time and with a variety of medications. If there is any concern that a patient may be experiencing any side effects related to an increase in serotonin, the patient should be seen by a provider as soon as possible so that more severe side effects may be avoided (Scotton et al., 2019).

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