

Corporate Medical Policy

Sensory Stimulation in Coma

Description of Procedure or Service

Coma is an alteration of consciousness in which a person appears to be asleep, cannot be aroused, and shows no awareness of the environment. Coma is therefore the most profound degree to which the two components of consciousness, arousal and awareness, can be diminished. Less profound states of impaired consciousness (stupor, lethargy, obtundation) preserve one or more of these components to some degree.

Sensory stimulation or coma stimulation is a therapeutic technique intended to enhance the rehabilitative potential of brain-injured individuals in a coma or vegetative state. Protocols may involve stimulation of any or all of the following senses: visual, auditory, olfactory, gustatory, cutaneous and kinesthetic.

Background

Sensory stimulation is intended to enhance the rehabilitative potential of brain-injured individuals in a coma or vegetative state. Protocols may involve stimulation of any or all of the following senses: visual, auditory, olfactory, gustatory, cutaneous and kinesthetic. Various stimuli may be used for each sense. Protocols may differ with respect to who performs the stimulation and where. Professionals providing this service may include nurses, occupational therapists, physical therapists, and speech-language therapists. In some cases, family members may be trained in the techniques and are given primary responsibility for providing the therapy. Treatment may be delivered in the hospital, the patient's home, or a nursing home. It has been proposed that comatose individuals treated with intense and repeated stimulation following very precise protocols could awaken earlier from coma and return to a higher level of functioning.

Controlled trials comparing usual care with and without sensory stimulation programs are limited in current literature. In 2002, a review from the Cochrane Database reported that there was no reliable evidence to support, or rule out, the effectiveness of multisensory programs in subjects in coma or vegetative states (Lombardi, 2002). Georgiopoulos et al (2010) also performed a systematic review of the proposed medical or surgical treatments in patients in chronic vegetative state (VS) or minimally conscious state (MCS), as well as of their mechanisms of action and limitations. According to the eligible studies in this review, medical management by dopaminergic agents (levodopa, amantadine), zolpidem and median nerve stimulation, or surgical management by deep brain stimulation, extra-dural cortical stimulation, spinal cord stimulation as well as intra-theal baclofen were shown to improve the level of consciousness in certain cases. The authors concluded that the treatments proposed for disorders of consciousness have not yet gained the level of "evidence-based treatments" and thus were inconclusive. They stated that the published therapeutic responses must be substantiated by further clinical studies of sound methodology.

The American Academy of Neurology's practice parameters on "Assessment and management of patients in the persistent vegetative state" (AAN, 2006) did not mention the use of coma stimulation as a treatment modality. The American Occupational Therapy Association's practice guideline on "Adults with traumatic brain injury" (Wheeler, 2016) is one of the few sources that does endorse the use of sensory stimulation or coma arousal programs. Furthermore, the National Institute of Neurological Disorders and Stroke's "Coma information page" currently does not reference the use of coma stimulation as a therapeutic option.

While there may be sound theoretical principles that would seem to support the use of sensory stimulation modalities in the setting of a comatose patient, there is a paucity of evidence that effectively demonstrates a consistent, reproducible and positive impact on health outcomes.

Regulatory Status

There are several FDA approved devices that serve as sources of neurostimulation; however, there are no identified devices specifically indicated for the purpose of sensory stimulation in coma.

Benefit Application

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits.

Policy Statement

GEHA considers sensory stimulation (Coma Stimulation) in the treatment of coma and/or persistent vegetative states experimental.

Physician documentation

S9056 is the code typically used to document coma stimulation programs.

Scientific references

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Policy implementation and updates

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| Feb 2018 | Revised clinical policy format and language. No significant alteration of coverage guidance. |
| Jan 2019 | Reviewed. No changes were made to the content of this coverage policy. |

Origination Date: Feb. 2017

Peer Reviewed: Jan. 2019

Next Review Date: Feb. 2020