

Background

- ECT sends an electrical impulse to a patient's scalp with hopes of triggering a seizure.
- It is administered as a treatment for a wide variety of psychiatric conditions including refractory depression, bipolar disorder, catatonia and psychosis.
- Side effects of ECT may include headache, transient retrograde amnesia, nausea, myalgia or acute confusion.
- The initial treatment for an individual undergoing ECT is usually three treatment episodes a week for an average total of 6-12 treatments.
- An ECT taper or maintenance treatments may follow the initial course of treatment for those with a risk for relapsing.
- When compared with the general adult population patients with severe mental illness have poorer oral health. A common but likely under reported injury is ECT induced oral trauma
- The cumulative risk of oral trauma and dental injury may increase with subsequent ECT therapy.

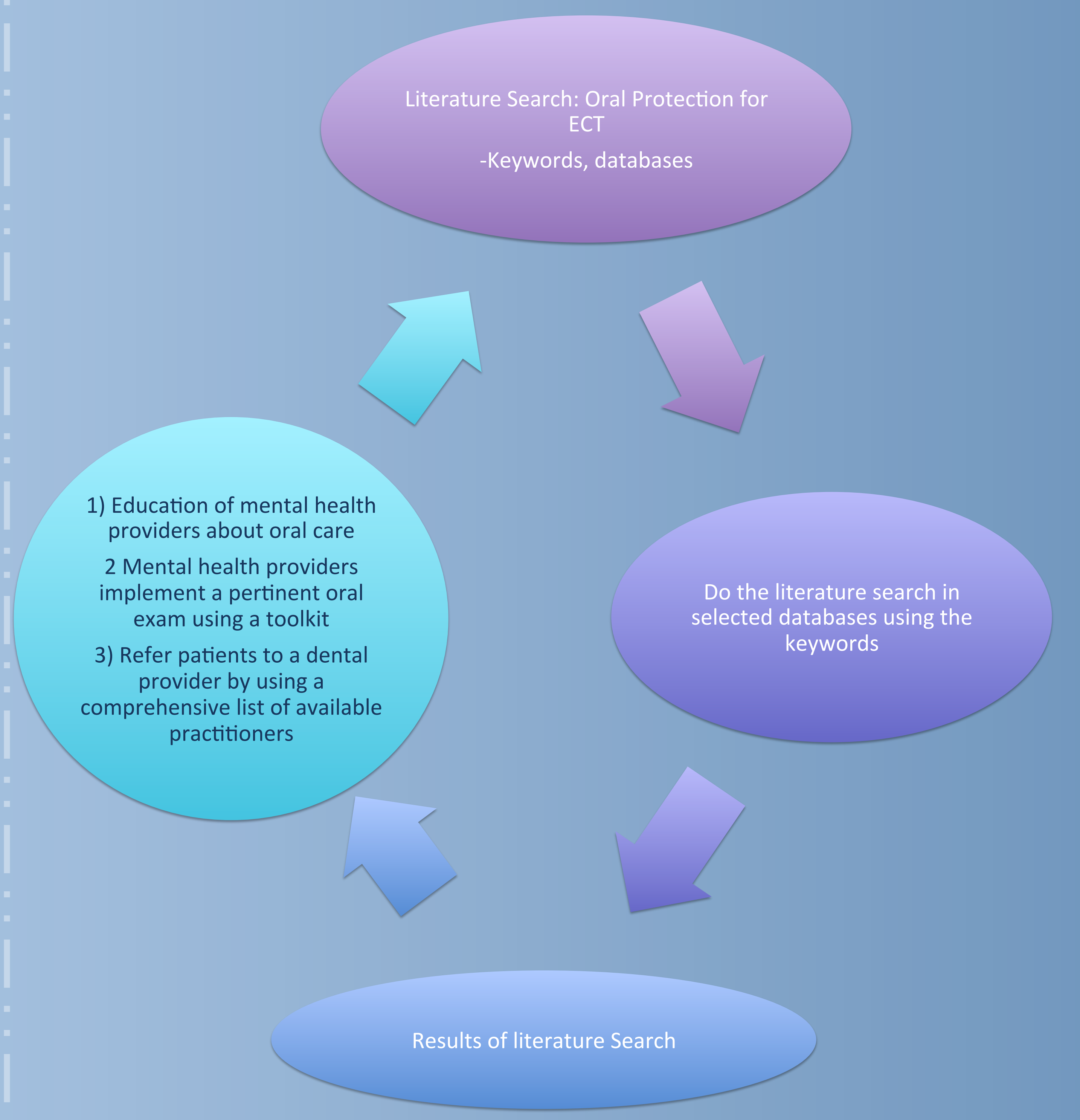
Project Aim

- To provide awareness to a neglected area of practice:
- 1) Inadequate oral health screening by mental health providers.
- 2) Inadequate oral protection during ECT, along with the lack of guidelines for which mouth guards to provide a patient undergoing ECT.

Project Design / Strategy

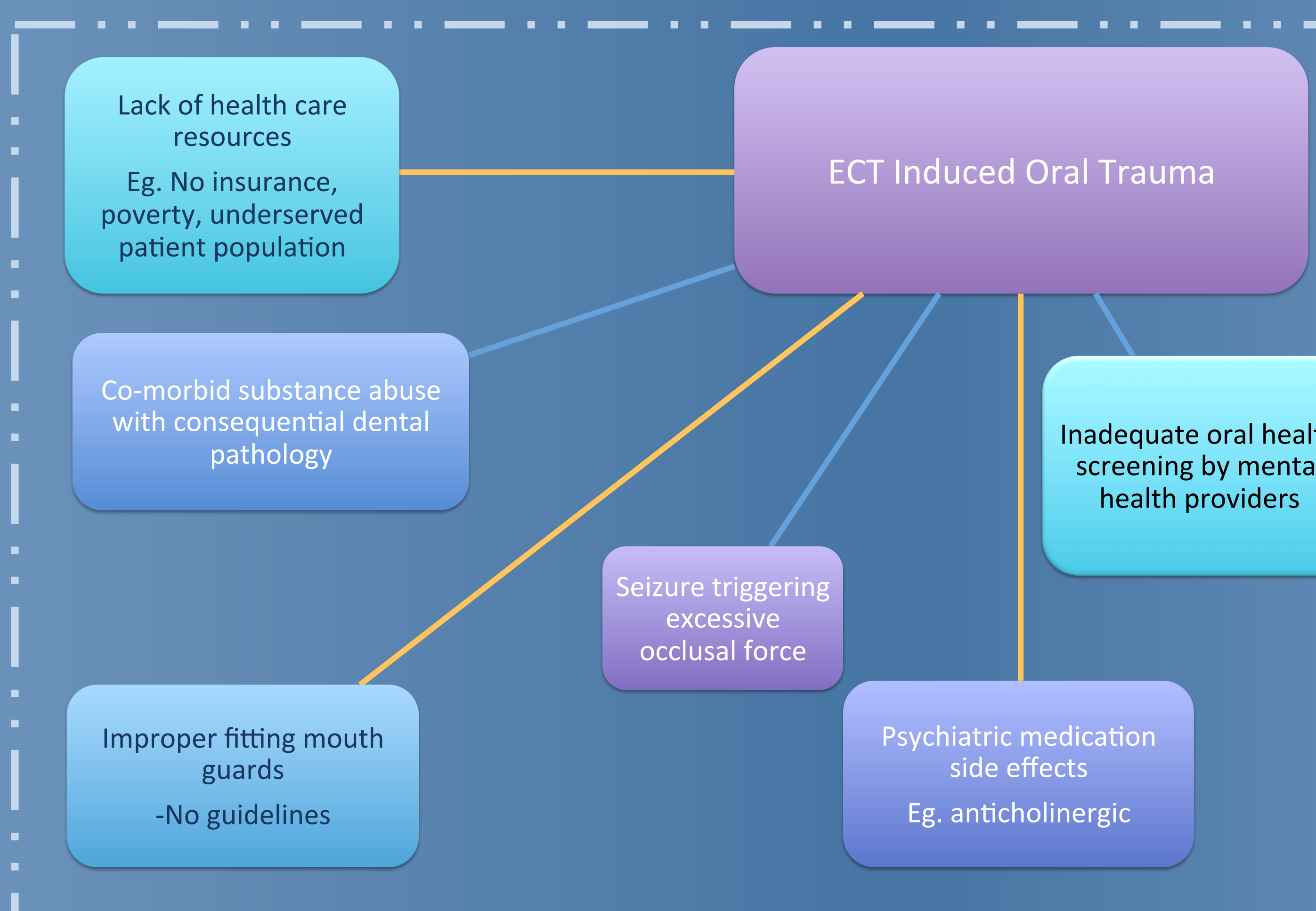
- PubMed, Medline, Cochrane, Google for all English language literature.
- Timeframe: 1946 and January 2016. Keywords: "ECT dental"; "ECT den5stry"; "ECT oral health"; "ECT mouth guard"; "ECT teeth"; "tooth damage ECT". "ECT" was interchanged for "Electroconvulsive therapy". We attempted to include all relevant publications to ensure a comprehensive descriptive review.
- 10 articles with a total N (patients) = 94

Changes made



Results / Outcomes Proposed Mouth Guards for ECT

Dupaco	Oberto	Somatics
<p>Dupaco Inc (third party manufacturer):</p> <ul style="list-style-type: none"> -Rigid plastic bite block is disposable and disarticulates the molar teeth. It has a J shaped curved to deflect the buccal mucosa from the biting surfaces of the teeth. It is marketed as the Bite-Rite Bite Block ECT Airway™. 	<p>Oberto:</p> <ul style="list-style-type: none"> -Noted to be a softer version of an ordinary bite block, and reportedly transfers the closing force during ECT treatment. -Supplied by major ECT machine manufacturer, MECTA. 	<p>Somatics:</p> <ul style="list-style-type: none"> -An autoclavable rubber mouth guard is another device produced by Somatics. -This mouth guard appears to be a modified version of the Oberto style mouth guard. -The mouth guard has an internal "airway provide the thickness and elasticity to prevent tooth fracture or tongue bite." (Somatics website)
		<p>Somatics LLC. Ventil-A Mouth Protector</p> <ul style="list-style-type: none"> -The Ventil-A™ is a single-use mouth protector. According to the product – A "thick 100% closed-cell foam construction that protects all the teeth." -"The unique design with internal non-collapsible air channel allows free flow of oxygen and fits under any anesthesia mask." -"Its dimensions are based on measurements of dozens of dental impressions of men and women of all ages—we guarantee it to fit >98% of adults." (Somatics website)
		<p>MECTA Corporation: Blachly</p> <ul style="list-style-type: none"> -The bite block "effectively distributes forces away from the tissues and front teeth, distributing forces to the stronger rear teeth." -The design provides for a large open airway in front of the bite block."(Mecta website) -A large open airway is incorporated in the design allows closed artificial pulmonary ventilation to patients -This mouth block allows ventilation to occur without an oropharyngeal airway.



Minneman:
Described characteristics of an ideal mouth guard for use during ECT:
1) displaces soft tissues away from biting forces
2) maintains stable vertical dimension between mandible and maxilla,
3) provides bilateral uniformity along the biting (occlusal) surface
4) provides direct loading forces on the intended load-bearing oral areas (molar teeth)
5) cushioning of load bearing areas absorbs damaging forces caused by seizure induced muscle of mastication activity
6) Mouth prop can be used in edentulous spaces in place of mouth guard
Concluded one standard bite guard design can not effectively protect the teeth and oral structures of ECT patients.

Kiran and colleagues:
-advocate using a bite block composed of two 3 inch by 1 inch cotton rolls wrapped in sterile gauze (roll-gauze mouth gag).
-This mouth gag is then placed between the mandibular and maxillary premolars and molars.
-Gag prevents injury to teeth by transmitting pressure to the soft gauze packings in molar load bearing area.
-Gag does not interfere with face mask ventilation that occurs during anesthetic induction.

Lessons Learned

- The importance of dental screening prior to ECT is not fully recognized or reported in the published literature.
- Many psychiatric patients have co-morbid alcohol use disorders, drug use disorders, tobacco use disorders, or experience dry mouth as a side effect of psychopharmacological treatment.
- Mental health providers often prescribe medications that directly affect the oral health of their patients, yet provide minimal or no oral health assessment.
- Patients in late life are vulnerable to periodontal disease, root caries, temporomandibular joint disease, and dental avulsion.
- Additionally, psychiatric patients, in general, when compared to healthy subjects are more likely to have oral lesions and dental disease.
- Psychiatric patients are at increased risk for oral soft tissue pathologies, and are a population group especially vulnerable to oral trauma.

Next Steps

- There is a clear deficit in guidelines and studies regarding dental protection during ECT.
- The deficit in studies is surprising since ECT induces a seizure that can often trigger excessive occlusal force.
- Given the increased risk for poor oral health in psychiatric patients, and the continued evolution of ECT, it is imperative that comparison studies evaluate what method of oral protection is most optimal.
- Dental assessment with treatment prior to and post-ECT is warranted.
- If adequate oral protection can be ensured, the risks associated with ECT induced oral trauma will be diminished.
- Clinically, it is important that mental health providers be educated on the dangers of ECT induced oral trauma, and factors that increase the risk of it occurring.
- A dental status screening kit that provides guidance to mental health providers on the dental screening of patients with psychiatric diagnoses can ultimately lead to improved health care support for an often underserved patient population.

Quiz, Bite Block Pictures, and References.
(Requires Qrafter app then open URL in browser)

