Transformative Team-based Dental Care for Vulnerable Children

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Introduction:
great progress over the last two decades
BUT
persistent challenges and disparities
Pediatric dentists are highly trained dentists that focus intensely in restorative care of various pediatric dental pathologies

High technical competency level

Routine practice of ambulatory behavioral and pharmacological management of patients to achieve desirable goal of restoring health

Full mouth rehabilitation of dental health under general anesthesia in the hospital

HOWEVER barriers and disincentives exist to practice prevention & risk management
HRSA's support made this project possible

From traditional model

To team-based practice

A process of learning, evaluation and adjustments
The new model

Addresses root causes of disease, including social determinants & cultural competency
Collaborative, with open communication channels
Depends on teams that are highly functional
Allows each member of the team to practice their specialty at the fullest
Requires inter-professional education & open mindedness
It is family-centered
Program goals

GOAL 1. Creation of a new transformative, interprofessional, team-based dental care delivery model;

GOAL 2. along with an integrated training program in Pediatric Dentistry and Dental Public Health.
Objective 1: Assemble, train, and deploy an inter-professional team to provide oral health care by collaborating with our primary care partner, Boston Medical Center Department of Pediatrics (primary care medicine for children) and other key partners across the Boston University campuses.

Objective 2: Develop clinical and didactic curricula to support activities of the BPOHC.

Objective 3. Evaluate the dental care delivery model and specialty training center.
• The Pediatric Oral Health Center was inaugurated in September 2016

• Since its opening the Pediatric Oral Health Center has provided comprehensive holistic care to children from all backgrounds, especially the underserved (97% Medicaid insured)
Inter-professional Collaboration at the BUPOHC

Children’s Oral Health

- Pediatric Dentist / DPH Dentist
- Pediatrician
- Social Worker
- Dietitian
- Speech Pathologist
- Pediatric Nurse
- Occupational Therapist
- Child Life Specialist
Team Work in the Pediatric Dental Clinic

- Pediatrician and nurse practitioner facilitate interactions between MDs and DDS, refer and review specific cases and assist in medical clearance. Facilitate Urban Pediatrics Rotation.
- Speech language pathologist present in the clinic on Thursdays. Screen and evaluate children as needed.
- Social Work interns present in the Pediatric dental clinic 1-2 days a week. Conduct “needs assessments” and address issues that impact health and access to services (food insecurity, transportation etc.). Intervene clinically for: child abuse/neglect, maternal depression, domestic violence etc. Contribute a social perspective for “case conferences”
- Just hired a registered dietician and an occupational therapist to provide screenings and consultations in the pediatric dental clinic.
Goal 1: Inter-Professional Care.

Requirements & Elements of Success

- Co-located Care: Common practice space
- Family centered care
- Focus on social & cultural determinants
- Team work mechanics
- Administrative Support
- Team IPE Education and Training
- Financing

Children’s Oral Health Care

Boston University
Henry M. Goldman
School of Dental Medicine
Goal 1: Transformative Inter-Professional Care

- Comprehensive multi-dimensional training
- Administration and staff support Communication and coordination
- Administration and staff support
- Consultation fees, salaries, reimbursements
- Conferences, Common efforts, “Care plan”, Common HER Tele-dentistry
- Provider co-located clinical space for provision of care
- Health literacy, social support, screening, early risk assessment and risk-based disease management Family access to EHR
- Economic status, race/ethnicity specific risks disability
- Team IPE Education and Training
- Finance
- Administrative Support
- Team work mechanics
- Family centered care
- Social & cultural determinants
- Children’s Oral Health Care
- Facilitate practice space
Re-tooling for success: practical examples of processes and procedures
Team requires strong administrative support
• Continuous communication flow between team members
• Communication with families
• Coordination of meetings
• Follow up of clinical actions
• Follow up of clinical and business actions
• Staff support & scheduling coordination
• Billing
• Evaluation of performance

• Assign one administrator to be the “glue” that will bond the team together
Team Conferences and Care Plans

• The team meet regularly to discuss cases, especially children with complex needs

• EPIC HER has become the preferred mode of communication. The team has started to gain familiarity with the HER. Issues still persist because EPIC and SALUD do not cross-talk (require simultaneous access to both systems and duplication of work)

• “Care plan” concept to be pilot tested. CCP clinic at BMC has experience and will lead the effort
# Comprehensive Care Plan

**Disclaimer:** This is a capsular summary and does not replace the patient’s full medical record. For emergency updates, contact PCP — Melissa T. Nass, MD; Tel: 617-414-4841

<table>
<thead>
<tr>
<th>Patient Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MIB:</td>
<td></td>
</tr>
<tr>
<td>Primary Language:</td>
<td>English</td>
</tr>
<tr>
<td>Primary Insurance:</td>
<td>Medicaid</td>
</tr>
<tr>
<td>Allergies:</td>
<td>Eggs, peanuts, soy milk, milk protein, rice, whey, peach, mango</td>
</tr>
<tr>
<td>CPR Status:</td>
<td>Full Code</td>
</tr>
<tr>
<td>Primary Diagnosis:</td>
<td>Autism, Global developmental delay</td>
</tr>
<tr>
<td>Secondary Diagnosis:</td>
<td>Multiple food allergies/food intolerance, Obesity/Adult-onset scoliosis, migraines, Cough/shooring, Rash/eczema/Abcess</td>
</tr>
</tbody>
</table>

## First Parent/Guardian
- **Name:**
- **Street Address:**
- **City, State, Zip:**
- **Home telephone:**
- **Mobile telephone:**
- **Work telephone:**

## Emergency Management Guidelines – CRISIS PLAN

**Allergy:**
- Ensure Jenny's mother Catherine carries an EpiPen and that there is one at school.
- Jenny has never had an anaphylactic reaction, but all providers should be aware of anaphylaxis symptoms.
- Use EpiPen with any signs of severe reaction (difficulty breathing, swelling of the face, hives/itchiness or abdominal pain/vomiting).
- Call 911 or go to the emergency room IMMEDIATELY.

### Current Medications:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Route</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>EpiPen Jr. 0.15mg/0.5ml (1:2000)</td>
<td>1-2 tsp</td>
<td>PO</td>
<td>Use as directed for serious allergic reaction</td>
</tr>
<tr>
<td>Benadryl allergy (childrens) 12.5mg/5ml</td>
<td>1-2 tsp</td>
<td>PO</td>
<td>Every 4-6 hours as needed for allergy/itch</td>
</tr>
<tr>
<td>Hydrocortisone ointment</td>
<td></td>
<td>Topically</td>
<td>Cover entire body twice a day everyday</td>
</tr>
<tr>
<td>Ibuprofen 100mg/5ml suspension</td>
<td>2 tsp</td>
<td>PO</td>
<td>Every 4-6 hours for pain or fever</td>
</tr>
<tr>
<td>Elancare Jr. vanilla</td>
<td>720 kcal</td>
<td>PO</td>
<td>720 kcal/day</td>
</tr>
<tr>
<td>Miralax powder</td>
<td>1 capful</td>
<td>PO</td>
<td>1 capful in juice daily for treatment of constipation</td>
</tr>
<tr>
<td>Adult small pull ups; Chux</td>
<td></td>
<td></td>
<td>Mixed inconvenience — dry autism</td>
</tr>
<tr>
<td>Gloves</td>
<td></td>
<td></td>
<td>For changing diapers</td>
</tr>
</tbody>
</table>

## Emergency and Medical Contacts:

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Contact Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melissa T. Nass, MD</td>
<td>PCP</td>
<td>850 Harrison Avenue Yawkey Center, 5th Floor Boston, MA 02118; Tel: 617-414-4841, Fax: 617-414-4541</td>
</tr>
<tr>
<td>Jodi Santosuosso, NP</td>
<td>Developmental/Behavioral Pediatrics</td>
<td>850 Harrison Avenue Yawkey Center, 5th Floor Boston, MA 02118; Tel: 617-414-4841, Fax: 617-414-7915</td>
</tr>
</tbody>
</table>
My medical home neighborhood that helps me stay well:

**Medical Information**

<table>
<thead>
<tr>
<th>System</th>
<th>Diagnoses</th>
<th>Current Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental</td>
<td>Global Developmental Delay</td>
<td>Separate class – autism focused 5 days/week</td>
</tr>
<tr>
<td></td>
<td>Autism</td>
<td>IEP goals appropriate: ST/OT – 60 min a week; ABA – 5 hours a week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visual chart for home routines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DRD: In case of emergency / EpiPen</td>
</tr>
<tr>
<td>Respiration/Allergy</td>
<td>Multiple food allergies</td>
<td>Avoidance of known allergens – Mom carries EpiPen; School nurse has EpiPen</td>
</tr>
<tr>
<td>Dermatology</td>
<td>Wheeze/cough</td>
<td>Consider obtaining order for Benadryl at school</td>
</tr>
<tr>
<td></td>
<td>Eczema</td>
<td>Hydrocortisone cream twice a day, every day</td>
</tr>
<tr>
<td></td>
<td>Abscesses</td>
<td>Call PCP with any signs of skin infection (redness, warmth, swelling or pus)</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Obesity</td>
<td>Continue weekly appointments with Franciscan's Feeding Team</td>
</tr>
<tr>
<td></td>
<td>Acquired ananthosis nigricans</td>
<td>Follow-through with Feeding Plan at home and at school; School has updated plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limit Escare to three servings of 8 oz water + 3 scoops Escare</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dilute juice to 1/4 juice + 1/4 water with goal of transitioning to only water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continue to introduce new foods (carrots and apple sticks) and limit French fries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use picture exchange to have Jenny request more food</td>
</tr>
</tbody>
</table>

**Transition Plans:**

- Jenny attends the Curley School, very close to her home. However, mom has thought about having Jenny attend a different school.

**Parent's Will/Guardianship:**

- Catherine is Jenny's guardian; father is not involved.
- Consider discussing guardianship when Jenny is 14 years old.

**Involved Agencies and Community Services:**

<table>
<thead>
<tr>
<th>Provider</th>
<th>Contact Name &amp; Info</th>
<th>Reason for Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Developmental Services</td>
<td>Barns Couto</td>
<td>DDS First Team Case Worker</td>
</tr>
<tr>
<td>Jewish Family and Children's Service</td>
<td>Natalie Stepanick</td>
<td>In-home Behavior Therapy</td>
</tr>
</tbody>
</table>

**Important Family Information and Preferences:**

- Jenny lives with her mother in their apartment. The home is neat and tidy and Jenny has a small table where she eats her meals. Jenny and her mother share a bed to sleep in. There is a park nearby that Jenny goes to when the weather is nice. Catherine also takes Jenny swimming at a local pool or go for walks in the mall often. Catherine has access to her own car. Allen receives SSI for Jenny. With the increased absences in school, Catherine wishes for medical appointments to be scheduled in the afternoon if possible.

**Description of Child:**

- Jenny likes to play in water. She likes music and playing with her mother's phone. She enjoys playing dolls. She also likes to paint, but will usually just put the paint on her own body. She does not mind touching the paint or having that paint on her skin. Jenny enjoys school and will smile and greet staff every morning.

**Technology/ Hardware:**

- PECS – used in school, emphasized during mealtime. Jenny is required to request more food using the PECS.
- 4C team to assist obtaining PECS or visual routines for home use.
- There is an iPad in the classroom, but Jenny uses it for leisure.

**Nutrition:**

- Jenny has a complex history of food allergies, sensitivities and aversion.
- She is currently prescribed 15 cans of Escare Jr. Vanilla a month. Mom has a history of requesting more formula than prescribed.
- Current plan for Escare is three servings of 8 oz. water + 3 scoops in a sippy cup (17 calories and ounce).
- Mom has trouble setting limits with formula and will give Jenny formula in a bottle.
- Jenny will drink juice from a sippy cup – goal is to dilute to 1/4 strength and to transition to full water.
- Feeding Therapy once a week at Franciscan’s – working on food chaining (no eating slices of apples and carrots shaped like French fries).
- Mom does buy French fries every day for Jenny, up to 2 servings a day; current goal is to decrease second serving to only one or two days a week.
- Recommend using pictures to request more food or, Jenny does in school.
- Encourage Catherine to eat with Jenny and to turn TV off to prevent over-stimulation. Suggest letting Jenny have a toy or two at the table for meals.

**School/IEP:**


**Absences:**

- Absence is a great concern. Many missed days during the winter. Continuous process is limited.
- Jenny is in a separate full-day preschool class with 4 other students.
- IEP goals appropriate; at yearly review on 3/10/15 school staff noted that due to absences, Jenny has not made progress as expected.
**Comprehensive Care Plan**

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<table>
<thead>
<tr>
<th>Action/Referral</th>
<th>Service/Provider</th>
<th>Phone/Fax</th>
<th>Date Referred</th>
<th>Person Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franciscan’s Team made referral for IHBT</td>
<td>Jewish Family and Children’s Services</td>
<td>Tel: 781-647-5327</td>
<td>3/2/15</td>
<td>Feeding Team</td>
</tr>
<tr>
<td>Call teacher to better understand school functioning</td>
<td>Kristen Mitchell</td>
<td><a href="mailto:KMitchell@BostonPublicSchools.org">KMitchell@BostonPublicSchools.org</a></td>
<td>Tel: 617-635-8176</td>
<td>2/27/15</td>
</tr>
<tr>
<td>Call school nurse to better understand medical concerns</td>
<td>Marilyn Reagan</td>
<td><a href="mailto:MReagan@BostonPublicSchools.org">MReagan@BostonPublicSchools.org</a></td>
<td>Tel: 617-635-8176</td>
<td>2/26/15</td>
</tr>
<tr>
<td>Observe feeding at school</td>
<td>Curley School</td>
<td>Tel: 617-635-8176</td>
<td>3/5/15</td>
<td>KT</td>
</tr>
<tr>
<td>Multidisciplinary phone conference with providers</td>
<td>BMC, Franciscan’s, and Curley School providers</td>
<td>NA</td>
<td>2/26/15</td>
<td>KO, KT, DR, PCP</td>
</tr>
<tr>
<td>At mother’s request -- attend IEP meeting</td>
<td>Curley School</td>
<td>NA</td>
<td>3/10/15</td>
<td>KO, LB</td>
</tr>
<tr>
<td>Home visits to observe and emphasize feeding plan</td>
<td>Patient’s Home</td>
<td>NA</td>
<td>3/18/15/4/1/15</td>
<td>KT, LB</td>
</tr>
<tr>
<td>Reach out to DDS to determine role</td>
<td>Berta Couto</td>
<td>Department of Developmental Services</td>
<td>Tel: 617-777-9698</td>
<td>3/15/15</td>
</tr>
<tr>
<td>Talk with Pediatric AIR clinic to discuss consumption of soybean oil</td>
<td>Lois Doerr, FNP</td>
<td>Boston Medical Center</td>
<td>Tel: 617-414-4041</td>
<td>Fax: 617-414-5741</td>
</tr>
<tr>
<td>Investigate counseling options for Mom</td>
<td>Pending</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow up with IHBT clinician and coordinate evaluations and recommendations</td>
<td>Jewish Family and Children’s Services</td>
<td>Tel: 781-647-5327</td>
<td></td>
<td>LB, KH</td>
</tr>
<tr>
<td>Consult school staff about attendances</td>
<td>Curley School</td>
<td>Tel: 617-635-8176</td>
<td></td>
<td>KO</td>
</tr>
<tr>
<td>Schedule 4C follow up – give mom options to come on Wed (full team) or Tue (part of team) so Berta can attend</td>
<td>4C Program</td>
<td>Boston Medical Center</td>
<td>Tel: 617-414-2222</td>
<td>3/26/15</td>
</tr>
<tr>
<td>Assist with Scheduling Endocrine follow-up appointment</td>
<td>Angelina Benner, MD</td>
<td>Pediatric Endocrinology</td>
<td>Tel: 617-414-4841</td>
<td>Fax: 617-414-5741</td>
</tr>
<tr>
<td>Assist with Scheduling DBP follow-up appointment</td>
<td>Jodi Santusasso, NP</td>
<td>Developmental/Behavioral Pediatrics</td>
<td>Tel: 617-414-4841</td>
<td>Fax: 617-414-5741</td>
</tr>
<tr>
<td>Assist with scheduling Allergy follow-up in June</td>
<td>Lois Doerr, FNP</td>
<td>Pediatric Asthma/Allergy</td>
<td>Tel: 617-414-4841</td>
<td>Fax: 617-414-5741</td>
</tr>
<tr>
<td>Assist with scheduling Ophthalmology follow-up in July</td>
<td>Gi Yoon-Huang, MD</td>
<td>Ophthalmologist</td>
<td>Tel: 617-414-4020</td>
<td>Fax: 617-414-4028</td>
</tr>
</tbody>
</table>
Cloud-Based Dental Record for Remote Family Access

**Goals:**

• Timely access to information for patients and their families, especially for people with disabilities who have limited transportation ability

• Inter-operability

• Facilitate timely communication between pediatric dental and other health professionals
Goals:
• Cloud-based system that can be accessed from any video platform, including cell phone, ipad, etc.
• Timely access to patients who experience emergencies
• Communication and information sharing with other health professionals and team members
• Ability to record sessions
All trained to recognize Risk Factors
- Poverty
- Disability
- Lack of family structure & support
- Language barriers
- Cultural barriers
- Social isolation & lack of community support

Enabling Factors
- Family structure & support
- Social capital of family
- Access to community resources
- Acculturation
How do you operationalize Family-centered practice?

• Provide for flexible work hours
• Payment plans
• Address information needs of parents & support their access to health information
• Anticipatory guidance
• Enable their understanding (health literacy)
• Use technology to set realistic and attainable goals at home for oral health and hygiene
Co-located care

Working in one location
- Working in one suite
- Working in same room as a team
  (seeing patients at the same time)
- Advantages related with continuity of care and family convenience
Financial sustainability

Requires long term evaluation

• Studying reimbursement of interprofessional team from medical insurance
Inter-Professional Education

- **Inter-Professional Education (IPE):**
  “Any teaching and learning activity that actively encourages collaborative practice”

Or

“Times when two or more professions learn with, from and about each other to improve collaboration and quality of care”
Educational framework of integrated training
Goal 2: Integrated Specialty Training

Traditional Pediatric Dentistry Training

Traditional Dental Public Health Training

Other

Rigorous programs with standards and defined outcomes governed by the Commission on Dental Accreditation
Goal 2: Integrated Specialty Training

- Dental Public Health Training combined
- Traditional Pediatric Dental Clinical Training
- Pediatric medicine training
- Nutrition training
- Special needs training
- Speech Pathology Training
- Occupational Therapy training
Training for Practice Integration:

- provider satisfaction
- improved quality of care
Educating our Colleagues

• A 'common core pediatric oral health curriculum' was pilot tested and disseminated through specialty specific educational lectures since Fall 2016

• Knowledge and attitudes were assessed prior to training sessions

• Educational training sessions on pediatric oral health care were provided

• Post-test questionnaires assessed any gains in knowledge and confidence
Our Colleagues Educating our Trainees

- New course in special needs patients, focusing on social and cultural aspects of disability, support systems, medical considerations and dental manifestations
- The primary goal is to familiarize the pediatric dental resident with all kinds of complex issues surrounding disabilities
- Revamping of the pediatrics rotation
- Educational sessions by nutritionists, speech pathologists, social workers, and child life specialists
Evaluation of oral health knowledge among Nutritionists / Registered Dietitians

Distribution of Knowledge Scores among Nutritionists Who Scored >60%

- Total Knowledge: 100% (Pre-test), 90% (Post-test)
- General Knowledge: 100% (Pre-test), 70% (Post-test)
- Preventable Measures: 66.67% (Pre-test), 90% (Post-test)
- Dietary Knowledge: 83.33% (Pre-test), 90% (Post-test)
- Oral-systemic Knowledge: 50% (Pre-test), 100% (Post-test)
- Confidence in Knowledge: 41.67% (Pre-test), 100% (Post-test)
Evaluation of oral health knowledge among Speech Language Pathologists (SLP)
Evaluation of the Attitude towards Inter-professional Education and Collaboration

Distribution of Attitude Scores among Different Professions
Who Scored >60%

- Speech Language Pathologists (n=73)
- Nutritionists (n=26)
- Pediatricians (n=15)
Special Needs Training of Pediatric Residents

- Twenty-three residents (96%) reported increase in confidence, knowledge and motivation to see more special needs patients.
- The Subjective, self-reported data (confidence, behaviors and skills) showed statistically significant improvement in post-test when compared to pre-test ($p \text{ value} < 0.001$), as did the objective (knowledge) data ($p \text{ value} < 0.001$).
Collaborative Case Example
• 1 year old (16 months old) female

• Diagnosed with chromosome 8p23 deletion syndrome

• Microcephaly

• Atrial Septal Defect (ASD), will be operated on later (~3 years old)

• Developmental delay: Motor, Speech, Attention

• Sleep apnea
8p23 deletion syndrome

• Heart conditions (especially when the deletion includes the GATA-4 heart gene located in proximal 8p23.1)

• Learning disability, will need individual support

• Behavioral issues: Hyperactivity and impulsiveness in particular

Ref: http://www.rarechromo.org/information/chromosome%20%208p23%20deletions%20ftnp.pdf
Collaborative Cases

- Finger sucking habit
- Difficulties with feeding due to tongue tie and lip tie
- Working with Speech Pathologist and a feeding specialist
- Several consults done with SLP, pediatrician, Cardiologist, ENT specialist, dentist
- ENT specialist would only do tongue tie correction with scissors
Collaborative Cases

Lip tie

Tongue tie
Maxillary frenum before Laser frenectomy

Immediately after Laser frenectomy with C02 superpulsed laser at 1.2W

Collaborative Cases
Lingual Frenum before Laser frenectomy

Immediately after Laser frenectomy with C02 superpulsed laser at 1.2W
Collaborative Cases

Maxillary frenum before Laser frenectomy

1 week post-op Follow-up

6 weeks post-op Follow-up
Collaborative Cases

Mandibular frenum before Laser frenectomy

1 week post-op Follow-up

6 weeks post-op Follow-up
Post-op Follow-up

• Mom reported much better suckling during breastfeeding immediately after laser frenectomy.

• Lip and tongue exercises continued for 4 weeks

• Mom noticed a significant difference in her feeding and sleeping patterns one week after & again 1 month after

Email quote – mom to Speech Pathology & Lactation consultant
“Just wanted to let you know Jenny's surgery went AWESOME. No bleeding! She is already breastfeeding better than she ever has before. Wish I had gotten it done sooner”
“Hello Dr. Zavras,

I just wanted to thank you again for making a very big improvement in this child’s life! This little girl was discharged from feeding therapy, eating all age level food textures. Even soft beef with side biting and tongue lateralization. She is growing and thriving.”
Future Projects

- MD/DDS Coordinated Care in the Operating Room for “Difficult to Examine” Patients
- Coordinated Dental Visits at Teen Parent Centering Groups
- Development of Child Life Platform in Pediatric Dental Clinic
- HPV Vaccination in Pediatric Dental Clinic