

Element 1: Purpose

PURPOSE: Develop and implement caries risk assessment instrument to facilitate prevention and disease management for children ages 0-17
Supporting purpose: Develop and implement recording and tracking mechanism (i.e. registry) feedback, decision support instrument (i.e. dashboard) to facilitate caries risk assessment quality improvement

- Background:** Dental caries remains the most common chronic condition among children and is a significant public health issue with adverse consequences
- National Health Statistics, Centers for Disease Control (CDC) data:** 3 out of 5 persons aged 12-19 years had dental caries in permanent teeth
- Prevention caries:** early identification, evidenced based disease management
- Health registries:** prevalent in medicine for public health and quality improvement
- Oral health registries:** quality improvement and peer reviewed publication lacking
- Patient, clinical team relationship:** risk assessment fosters communication, enhances shared engagement and nurtures healing relationships
- Quality Improvement goal:** Short term – quality care and experience; Intermediate term – burden of disease; Long term – value.

Element 2: Performance Goal

PERFORMANCE GOAL(S):
Initial: 75% of children ages 0-17 at quality improvement pilot sites are caries risk assessed (CRA) at the comprehensive examination.
Aspirational: 90% of children ages 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at the comprehensive examination.
Supporting: 75% of children ages 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at comprehensive examination and entered into the caries risk assessment registry (CRAR).

- National Survey (NIH National Institute of Dental and Craniofacial Research PBRN):** 71% of dentists conduct a caries risk assessment (CRA) on children
- State Survey (Texas)** 40% of dentists conduct caries risk assessment (CRA) but do not document the child's risk status
- Dental Group Practice (2015 American Dental Partners):** 26% of children ages 0-17 were caries risk assessed (CRA) at comprehensive examination
- National Benchmark:** None exist for either CRA or CRAR

Element 3: Data Collection Plan

- Electronic Dental Record (EDR)** December 2015: data collected to determine percentage of all children 0-17 caries risk assessed at comprehensive evaluation
- Electronic Dental Record (EDR)** January 2016: data collected to determine percentage of children 0-17 at quality improvement pilot sites are caries risk assessed at the comprehensive examination

Element 4: Evidence of Data Collection

- Electronic Dental Record (EDR):** December 2015 19% of children 0-17 at all ForwardDental practice sites caries risk assessed at comprehensive examination
- Electronic Dental Record (EDR):** December 2015 0% of children 0-17 at all ForwardDental practice sites were caries risk assessed at the comprehensive examination and entered into the caries risk assessment registry (CRAR)
- Electronic Dental Record (EDR):** January 2016 54% and 60% of children 0-17 at two quality improvement pilot sites were caries risk assessed at comprehensive examination

Element 5: Data Analysis

Constraints, challenges and resistance to the quality improvement initiative:

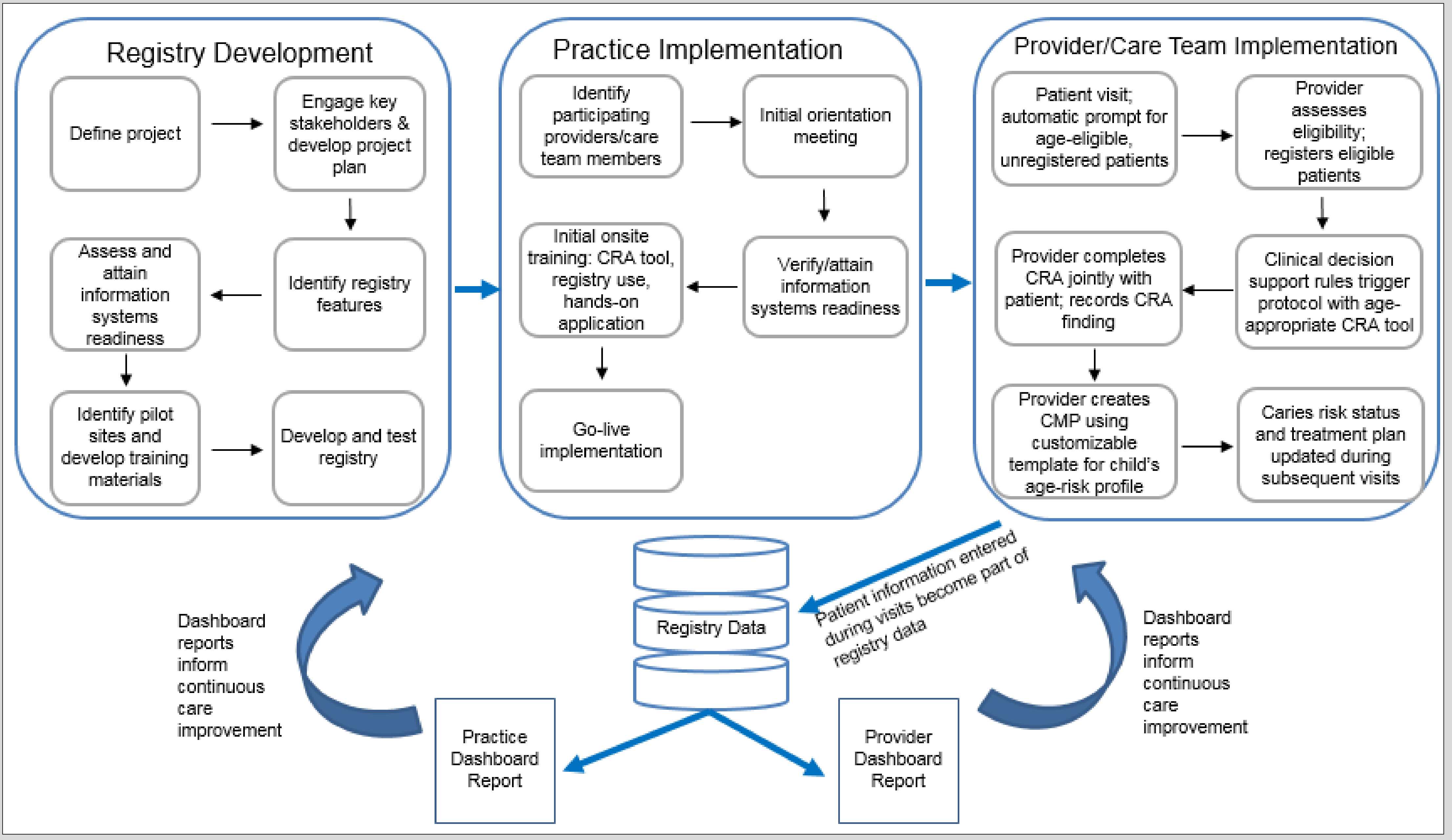
- Legacy systems and thinking:** acquisition of and adjustment to reengineered technology; apprehension of new methodologies
- Normative culture, tradition, routine, extant programing:** adaptation to new role responsibilities, accountabilities, processes, culture, and rewards
- Normative practice, flow and throughput:** modification, addition and or subtraction of redesigned procedures, clinical practices, and realignment of incentives
- Calibration:** communications, education, consistency of messaging and training, constancy of understanding and interpretation
- Fear of change, powerlessness, loss of control and autonomy:** adjusting to re-defined roles

Element 6: Comparison of Current Performance to Performance Goal

Current Performance: 19% of children 0-17 at all ForwardDental practice sites caries risk assessed at comprehensive examination; 54% and 60% of children 0-17 at quality improvement pilot sites caries risk assessed at comprehensive examination did not initially meet our performance goals:

Performance Goals:

- Initial:** 75% of children 0-17 at quality improvement pilot sites are caries risk assessed (CRA) at the comprehensive examination
- Aspirational:** 90% of children 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at the comprehensive examination
- Supporting:** 75% children 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at comprehensive examination and entered into the caries risk assessment registry (CRAR)



In 2015 American Dental Partners, Inc. observed low rates of CRA documentation: only 26% of 2,123 children aged 0-17 received a comprehensive oral evaluation had a documented CRA

Element 7: Corrective Action

- Mission, values:** ensure collective, cohesive alignment and constancy of purpose on practice, patient and project – **no compromise on values**
- Team Leadership:** cross functional, diversity of thought, respectful debate, mission alignment, develops, monitors, champions; plan strategy policies and objectives
- Social operating system (means of communication):** all meetings begin with a recitation of the mission; all discussions align to the purpose
- Team - front-line stakeholders:** know the why, when, where, and how; understand their roles and responsibilities, every voice is equal, dignified and counts
- Education:** November 2015 orientation teleconference; November-December onsite education of CRA and CRAR at pilot locations
- Education reinforcement:** One on one onsite education targeting constraints and challenges 3 months after initial orientation
- Survey evaluation:** Sent to leadership, champions and pilot site(s) front-line team members to assess understanding, challenges, constraints and opportunities
- Education - frontline team:** CRA, CRAR supports rather than supplants clinical judgement, personalized care, autonomy, vetting and credentialing guidelines
- Process redesign:** Strategies integrate CRAR into normative clinical care process-improve patient activation and engagement.
- System reengineer:** An EDR clinical decision rule ("Clinical Protocol Alert") notifies the clinical team that an eligible patient is ready for entry in the registry
- Communication:** pilot sites, teams received CRAR dashboard reports; patients examined vs. patients assessed, and patients examined vs. patients registered
- Scale:** Online training was offered and completed for all ForwardDental sites
- Spread:** October 2016 all ForwardDental practices received CRAR education

Element 8: Re-Measurement

- April 2017: 83% of children ages 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at the comprehensive examination
- April 2017: 67% of children ages 0-17 ForwardDental practice sites are caries risk assessed (CRA) at the comprehensive examination an entered in the registry
- April 2017: 87% and 92% of children ages 0-17 at the two quality improvement pilot sites are caries risk assessed (CRA) at the comprehensive examination
- December 2018: Achieved Initial, Aspirational and Supporting Goal(s)** 98%, children ages 0-17 at all ForwardDental practice sites are caries risk assessed (CRA) at the comprehensive examination and 86% are entered in the registry

Element 9: Additional Corrective Action

- Celebrate achievement of goals:** then sustain, control, improve
- Sustain:** Dashboard-transparency of data – supplied monthly, quarterly at practice
- Control: Social Operating System (means of communication)** – Information shared at practice, doctor, administrative and leadership meetings
- Improve: Education** – from group technical training to individualized mentorship
- Improve: Point of Intervention** – Information quality prompts developed to facilitate patient engagement, shared decision making, personalized care, healing relationships

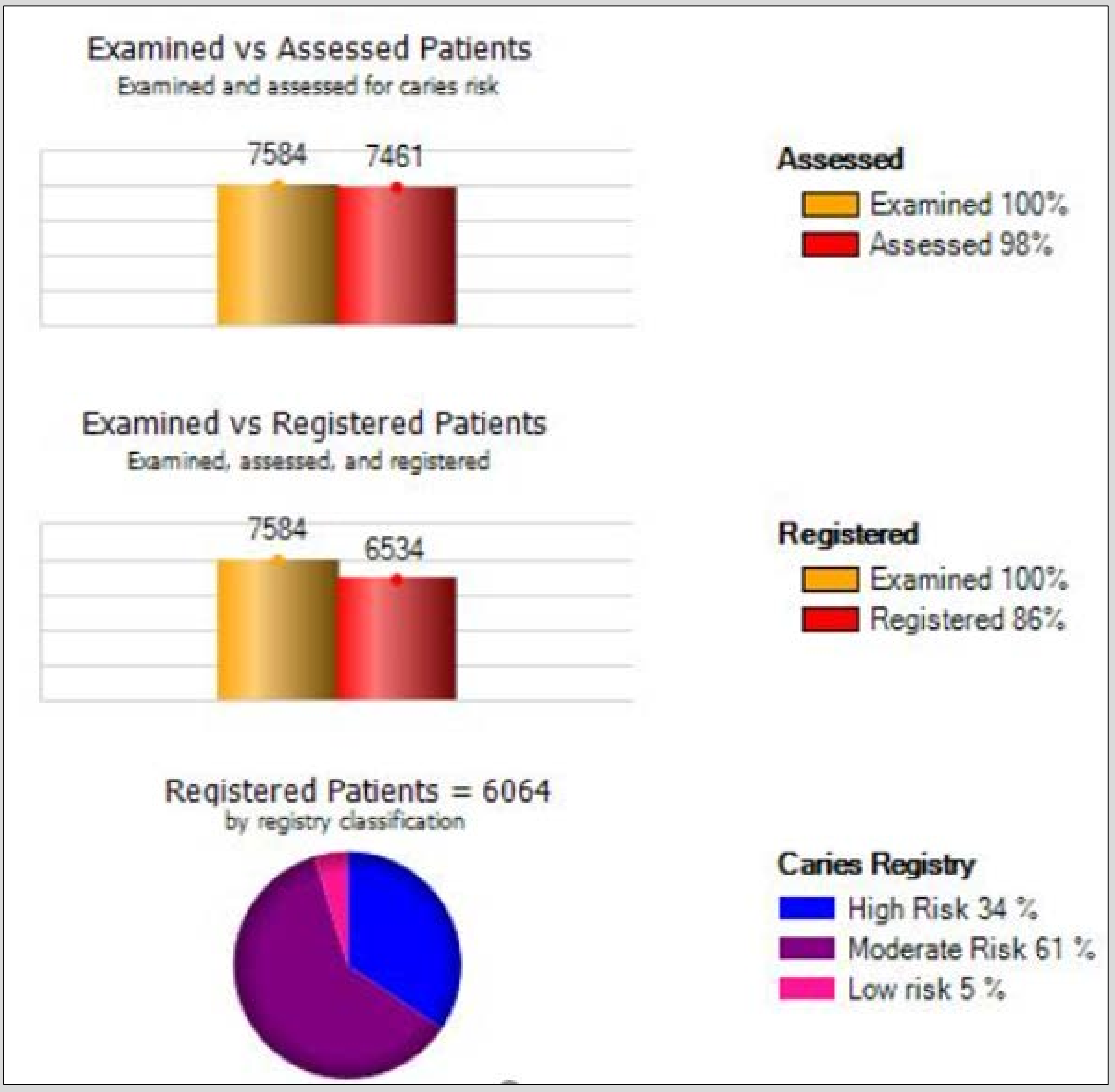
Element 10: Communication of Findings

- Social Operating System (means of communication) cascaded:** CRAR initiative and indicators became an agenda item at meetings at all organizational levels and modes of communication (doctor, dental hygiene, practice manager, leadership, emails, on-site training, webinars)
- Organization transparency:** Group leadership, doctors and practice locations receive monthly, quarterly, semi-annual, and annual dashboards comprised of quality indicators; including the percentage of children risk assessed
- Professional transparency:** Panel presentation at the American Dental Association Dental Quality Alliance: 2017 "Collaboration in Quality Measurement for Improved Oral Health" Conference
- Public/patient/community transparency:** 2018 membership in Wisconsin Collaborative for Healthcare Quality (WCHQ) publicly reports nationally recognized medical measures. 2019 will begin reporting ForwardDental caries risk assessment measure
- Peer Reviewed Publication, Quality Innovator Spotlight Series** (see publications nearby)

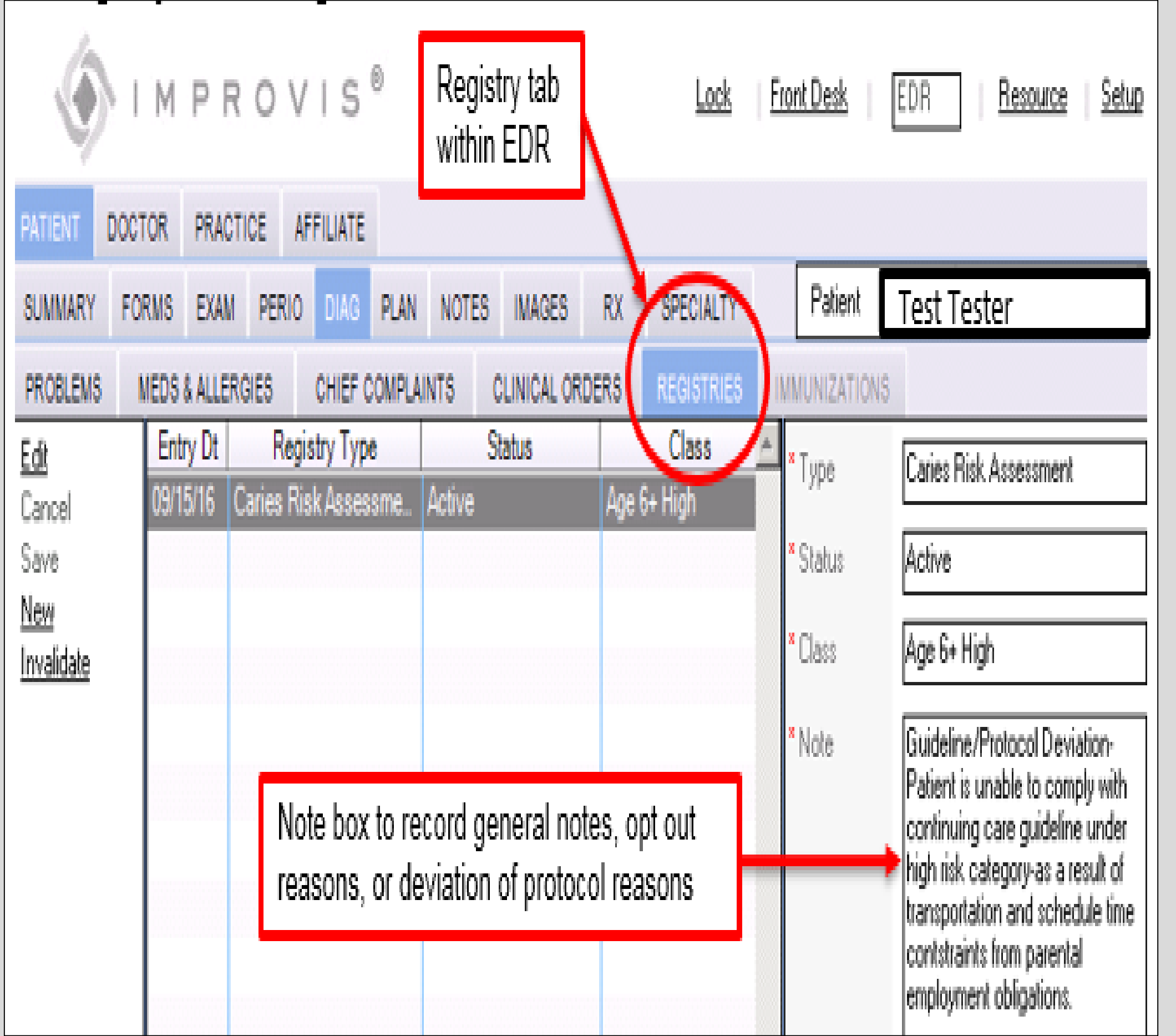
Publications:

- Herndon, J. B., Aravamudan, K., Stephenson, R. L., Brandon, R., Ruff, J., Catalanotto, F., & Le, H. (2016). Using a stakeholder-engaged approach to develop and validate electronic clinical quality measures. *Journal of the American Medical Informatics Association*, 24(3), 503-512.
- Ruff, J. C., Herndon, J. B., Horton, R. A., Lynch, J., Mathwig, D. C., Leonard, A., & Aravamudan, K. (2018). Developing a caries risk registry to support caries risk assessment and management for children: A quality improvement initiative. *Journal of public health dentistry*, 78(2), 134-143.
- Dental Quality Alliance/ American Dental Association Quality Innovators Spotlight Ruff- https://www.ada.org/en/science-research/dental-quality-alliance/dqa-improvement-resources Personalized Care: Caries Risk Assessment

Dashboard Report- 2018 Q4



EDR Sample



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