Prefabricated Crowns

Policy Number: DCP012.13
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Instructions for Use

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Related Dental Policy

- Non-Surgical Endodontics

Coverage Rationale

Prefabricated crowns are indicated for the following:

- Restoration of teeth with more than two surfaces affected with carious lesions, or where extensive one or two surface lesions are present
- Large or multi-surface cavitated and non-cavitated carious lesions in documented high caries risk children; risk factors must be thoroughly documented by the provider in the dental record and include:
  - Mother or primary caregiver has active caries
  - White spot lesions or enamel defects
  - Visible caries or previous restorations
  - Sub-optimal systemic fluoride intake
  - Frequent exposure to cavity-producing foods and drinks
  - Individuals with special health care needs
  - Low socioeconomic status
  - Xerostomia
  - More than one interproximal lesion
- Developmental defects (hypoplasia, hypocalcification, enamel hypoplasia, amelogenesis imperfecta, dentinogenesis imperfecta, etc.)
- Interproximal caries extending beyond line angles
- Following pulpotomy or pulpectomy
- Restoration of a primary tooth that is to be used as an abutment for a space maintainer
- Intermediate restoration of fractured teeth
- Restoration and protection of teeth exhibiting extensive tooth surface loss due to attrition, abrasion, or erosion
- In individuals with impaired oral hygiene in which the breakdown of intra-coronal restorations is likely
- When the tooth cannot be effectively isolated for amalgam or composite restorations

Prefabricated crowns are not indicated for the following:

- A primary tooth that is close to exfoliation with more than half the roots resorbed
- Excessive tooth crown loss resulting in the inability for mechanical retention
- Loss of space due to tipping of neighboring teeth into carious defect interfering with the ability to attain proper fit
- Solely for cosmetic purposes
- As a preventive measure for teeth with no evidence of pathology

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CDT Code	Description
D2928	Prefabricated porcelain/ceramic crown – permanent tooth
D2929	Prefabricated porcelain/ceramic crown – primary tooth
D2930	Prefabricated stainless steel crown – primary tooth
D2931	Prefabricated stainless steel crown – permanent tooth
D2932	Prefabricated resin crown
D2933	Prefabricated stainless steel crown with resin window
D2934	Prefabricated esthetic coated stainless steel crown – primary tooth

CDT® is a registered trademark of the American Dental Association

Description of Services

Prefabricated crowns are full tooth coverage restorations that may be made of stainless steel, porcelain/ceramic, or acrylic. The dentist selects the best fit and adapts the crown as needed and cements it with a biocompatible luting agent. Prefabricated crowns are most commonly used for primary teeth as a means to retain the tooth until it naturally exfoliates, and permanent tooth erupts. They are typically not considered a definitive restoration for permanent teeth.

Pursuant to CA AB2585: While not common in dentistry, nonpharmacological pain management strategies should be encouraged if appropriate.

Clinical Evidence

Seale et al. (2015) conducted a systemic review of the literature on stainless steel crowns (SSCs) from 2002 to the present as an update to an earlier review published in 2002. Included were published papers on clinical studies, case series, and laboratory testing on SSCs (including esthetic SSCs and the Hall technique) in peer-reviewed journals. Study quality and strength of evidence presented were assessed for papers reporting clinical results for SSCs as a primary study outcome using a list of weighting criteria. Ten clinical studies had weighting scores between 26 percent and 68 percent, of which two were considered to be of good quality regarding validity and study design and three further studies were considered to be of moderate quality. This review, within the confines of these studies, demonstrates primary molar esthetic crowns and stainless-steel crowns had acceptable clinical performance as restoratives for posterior primary teeth. Additionally, this review supports the findings from the 2002 review regarding the placement of stainless-steel crowns in patients with high caries risk who exhibit anterior caries as well as multiple posterior lesions, or who receive treatment under general anesthesia for the protection of remaining tooth structure.

O'Connell et al. (2014) completed a statistical analysis on 34 paired crowns in 14 children with the aim of evaluating the clinical performance of posterior pre veneered stainless steel crowns after three years. NuSmile® pediatric crowns and Kinder Krowns® were randomly allocated on paired molars using a split-mouth design. After three years, 53 percent of crowns were fracture free compared to 81 percent at one year, and crowns had extensive fracture. No difference was reported in the clinical performance between the two crown types. Fracture was more likely to occur where the adjacent tooth was missing. The authors concluded that clinical performance of both crown types was similar and successful for three years and offers a more esthetically acceptable option to traditional silver stainless steel crowns.

Schuler et al. (2014) conducted an observational follow up study to assess the quality of stainless-steel crowns (SSC) placed in children at 1,3 and 5 years of service time. 428 SSC's in 171 children aged between 1.1 and 8.6 years were assessed for marginal adaptation, extension and proximal contacts, and plaque and gingival bleeding. Secondary caries was not assessed. Loss of SSCs due to pathological tooth mobility and perforation of the crown were scored as clinical failures. The overall success rate of SSCs was 97.2%, regardless of the extent of carious lesions or pulp treatment of the tooth. The majority of SSCs had sealed margins and the marginal extension reached sub-gingival level. Open proximal contacts occurred in approximately 20% of teeth. All qualitative defects increased with service time. Gingival bleeding was

observed in 72.1% of all SSCs, and 46.4% were free of dental plaque. The authors concluded that SSCs are clinically successful restorations in primary molars of high caries risk children.

Hutcheson et al. (2012) conducted a split mouth, randomized controlled trial comparing primary molars treated with white MTA pulpotomies and restored with either multi-surface composites (MSC) or stainless-steel crowns (SSC). Forty matched, contra-lateral pairs of molars received MTA pulpotomies and were randomly assigned to MSC or SSC restorations and evaluated clinically and radiographically at 6 and 12 months. Two calibrated, blinded examiners evaluated and scored radiographs. Thirty-seven matched pairs were evaluated at 6 months, and 31 were available at 12 months. All teeth in both groups were radiographically and clinically successful at 6 and 12 months. Dentin bridge formation was noted in 20% of the primary molars by 12 months. The composite restored group exhibited fewer intact clinical margins than the SSC group, and the vast majority (94%) of teeth restored with composite displayed gray discoloration at follow-up exams, which did not appear to affect the quality of the restoration and is believed to be associated with the white MTA. The authors concluded that the white MTA pulpotomies succeeded over 12 months regardless of the restoration; however, the teeth restored with composite were not as durable nor considered an esthetic alternative to the SSC.

Attari et al. (2006) conducted a review of the literature concerning the restoration of primary teeth with pre-formed metal crowns (PMC). A search of the dental literature was made electronically using key words to describe pre-formed metal for primary molars. There were 112 papers found, and fourteen met the search criteria of being relevant for pediatric dentistry. The 14 chosen were then graded using the U.S. Preventive Services Task force Grade Definitions. Of these, none were rated A or B1, seven B2 and seven C. Failure rates of PMC varied between 1.9 and 30.3%. In all studies the failure rate of PMC was lower than comparable restorations and, in some studies, this was statistically significant. This literature review showed that pre-formed metal crowns are indicated for the restoration of badly broken-down primary molars and their success rate is superior to all other restorative materials.

Shah et al (2004) conducted a retrospective cross-sectional study to evaluate the clinical success of (and parental satisfaction with) treatment using prefabricated resin-faced stainless-steel crowns (Kinder Krowns®) on anterior primary teeth. Patients treated within the last 3 years were recalled for clinical evaluation and completion of a parental satisfaction survey. Clinical evaluation was performed for crown retention, facing retention, and resin veneer wear. Forty-six teeth were evaluated in 12 children. The average age of the crown at the time of examination was 17.5 months (range 5-38 months). All crowns were still present in the mouth, and resin fracture resulting in partial or total facing loss was seen in 24% of the crowns. No resin facing fracture or visible wear was seen in 61% of the crowns. Six crowns had total facing loss from fracture (13%), while 5 (11%) had partial facing fracture. Wear was seen in 7 crowns, (15%) and was limited to less than the incisal one third of the crown. The parental satisfaction with the pre veneered SSCs overall was high. The authors concluded that pre veneered stainless steel crowns (Kinder Krowns®) have a high rate of success and parental satisfaction for the restoration of primary anterior teeth.

Almeida et al. (2000) conducted a retrospective study to assess the susceptibility of children to the future development of caries following comprehensive treatment for early childhood caries (ECC) under general anesthesia. The patients selected were identified by analyzing dental records of children receiving treatment at the Franciscan Children's Hospital & Rehabilitation Center, Boston, MA. In total, 4,143 records were reviewed. Of these, ECC was diagnosed in 42 patients before their admission to the operating room. Thirty-one control children were selected randomly from the dental records reviewed as a control group and were initially caries-free. The caries status of the children diagnosed with ECC was evaluated and compared with the control group. Children in both groups were seen for recall at intervals of six to nine months over a two-year period. Thirty-three of the 42 (79%) ECC children compared to nine of 31 (29%) control children had detectable carious lesions at subsequent recall visits. These differences were statistically significant. Additionally, of the 42 patients treated for ECC under general anesthesia, seven (17%) required retreatment under general anesthesia within two years following their initial full-mouth rehabilitation. The prevalence of NSSC in the ECC group was significantly higher than the control group. The authors concluded that despite increased preventive measures implemented for children who experienced ECC, this group of children is still highly predisposed to greater caries incidence in later years. These findings strongly suggest that more aggressive preventive therapies may be required to prevent the future development of carious lesions in children who experienced ECC.

Clinical Practice Guidelines

American Academy of Pediatric Dentistry (AAPD)

In the pediatric restorative dentistry best practice guideline 2022 revision, the AAPD states the following:

- The use of SSCs is supported on high-risk children with large or multi-surface cavitated or non-cavitated lesions on primary molars, especially when children require advanced behavioral guidance techniques including general anesthesia for the provision of restorative dental care

- Preformed metal crowns may be indicated as semi-permanent restorations on permanent teeth for treating severe enamel defects or gross caries

American Dental Association (ADA)

In a 2023 evidence based clinical practice guideline, the ADA makes the following recommendations for prefabricated crowns (Dahr et al.):

- For moderate caries lesions on vital primary teeth requiring a restoration, the guideline panel suggests the use of selective carious tissue removal, nonselective carious tissue removal, or no carious tissue removal and sealing lesions with a preformed crown (conditional recommendation, very low certainty)
- For moderate and advanced caries on vital anterior or posterior primary teeth requiring Class I, Class II and Class V restoration, the guideline panel suggests prioritizing the use of resin-modified GIC, RCs, conventional GIC, or preformed crowns over compomer or dental amalgam (conditional recommendation, very low certainty)

References

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Policy History/Revision Information

Date	Summary of Changes
05/01/2025	**Supporting Information** • Updated *Clinical Evidence* and *References* sections to reflect the most current information • Archived previous policy version DCP012.12

Instructions for Use

This Dental Clinical Policy provides assistance in interpreting UnitedHealthcare standard and Medicare Advantage dental plans. When deciding coverage, the member specific benefit plan document must be referenced as the terms of the

member specific benefit plan may differ from the standard dental plan. In the event of a conflict, the member specific benefit plan document governs. Before using this policy, please check the member specific benefit plan document and any applicable federal or state mandates. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Dental Clinical Policy is provided for informational purposes. It does not constitute medical advice.