Why you should read this article:
- To recognise the importance of providing effective oral healthcare in hospital and community care settings
- To learn about a quality improvement project that was undertaken to address gaps in the delivery of oral healthcare
- To consider changes you could make in your area of practice to enhance oral healthcare for patients

Developing an oral healthcare assessment strategy to enhance patient care

Caroline Bestwick, Caroline Yates and Vanda Carter

Correspondence
vanda.carter@nhs.net
@VandaCa16661543

Abstract

The promotion of oral healthcare is an integral part of nursing care. However, research has shown that staff in hospitals and community care settings often lack oral healthcare skills. This article details a quality improvement project in which a scoping exercise was undertaken in one NHS trust to assess whether ward-based oral healthcare provision was adequate. The scoping exercise identified that there was a need to address the lack of oral healthcare provision in the trust. Subsequently, a multidisciplinary working group developed an oral healthcare assessment tool and rolled this out across the trust. The authors also provided online training for nurses in the trust to assist them in using the new tool. At the same time, an audit of the oral healthcare products used in the trust, and their appropriateness, was undertaken.

Author details

Caroline Bestwick, dental health specialist, The Royal Wolverhampton NHS Trust, Wolverhampton, England; Caroline Yates, matron, The Royal Wolverhampton NHS Trust, Wolverhampton, England; Vanda Carter, practice education facilitator for research, The Royal Wolverhampton NHS Trust, Wolverhampton, England

The promotion of oral health is an integral part of nursing and healthcare (Paulsson et al 2008, Otukoya and Doshi 2018, Oral Health Foundation 2019, Haresaku et al 2020a, 2020b). Suboptimal oral healthcare can have a detrimental effect on an individual's health and well-being, with various physical and psychological consequences such as altered appearance, lack of confidence, pain and infection (Munro et al 2006, Paulsson et al 2008, Haresaku et al 2020a, 2020b, Public Health England 2020). It can also negatively affect a person's self-esteem, relationships and general quality of life (Oral Health Foundation 2019).

Suboptimal oral healthcare and hygiene may also affect a person's dietary intake and nutritional requirements by causing taste changes and potentially affecting the person's desire to eat, thereby causing weight loss (Oral Health Foundation 2019), and it can also cause halitosis

(bad breath). Inadequate oral health and hygiene may result in bleeding, swollen gums, broken teeth and dentures, and tooth decay, which in turn can cause pain and discomfort, increase the risk of infection, and, in extreme circumstances, may cause death through abscesses, infection and sepsis (Terezakis et al 2011, Kaneoka et al 2015, Oral Health Foundation 2019, Yao et al 2019).

Effective oral healthcare is required for the removal of bacterial plaque in the mouth and to support and maintain healthy gums, tongue and oral mucosa. In addition, it can enhance a patient's ability to eat, drink and communicate (Oral Health Foundation 2019, Public Health England 2020, Office for Health Improvement and Disparities et al 2021). Effective oral healthcare also includes the care of dentures and dental implants (Oral Health Foundation 2019).

Research has shown that oral healthcare education is often inadequate in hospitals and

community care settings (Hill et al 2014, Kaneoka et al 2015, Vamos et al 2015, Otukoya and Doshi 2018, Tabatabaei et al 2020, Office for Health Improvement and Disparities et al 2021). Furthermore, it is estimated that half the world's adult population has tooth decay, which represents the most common chronic disease globally (Oral Health Foundation 2019).

In its five-year strategy to reduce dental disease in the UK, the Oral Health Foundation (2019) stated that while there have been many improvements to oral healthcare in acute and community settings, further work still needs to be undertaken in this area. For example, it is important to encourage people to adopt appropriate oral hygiene standards, which include twice-daily brushing with a fluoride toothpaste, low-sugar diets and regular dental visits (Oral Health Foundation 2019). As such, it is the responsibility of all nurses and healthcare staff to promote optimal oral health.

Aim

To enhance care quality standards in the authors' trust by implementing a series of oral healthcare measures.

Method

This exploratory quality improvement project was instigated at The Royal Wolverhampton NHS Trust, England, in January 2019 and, at the time of writing, was still ongoing in terms of evaluation and continuous development.

The authors used Standards for Quality Improvement Reporting Excellence (SQUIRE) (2020) guidelines (version 2.0) as a framework to provide an account of the implementation process. The SQUIRE guidelines are intended to report on system-level work that aims to improve the quality, safety and value of healthcare and to establish whether observed outcomes were due to any interventions undertaken.

This project was undertaken in four quality improvement stages:

» Stage 1 – a scoping exercise to ascertain the present oral healthcare policy in the trust and any perceived gaps in clinical care.

» Stage 2 – an evaluation of the oral healthcare products available in the trust, which was essential to ensure that the staff had the tools available to undertake effective oral healthcare.

» Stage 3 – the development of an oral healthcare assessment tool and care plan.

» Stage 4 – the rollout of online training.

The use of quality improvement PDSA (plan, do, study and act) cycles (Berwick 1996, Leis and Shojania 2017) assisted two of the authors (CB and CY) to test and establish the effects of the implementation of these four stages. PDSA cycles are an iterative process involving inductive learning and expanding knowledge bases, making changes and reflecting on whether any interventions have been beneficial (Berwick 1996).

Ethical considerations

Since this project comprised a series of quality improvement projects, no formal ethical approval was required.

Stage 1: scoping exercise

A scoping exercise was undertaken in January 2019 by the trust's nursing quality team, which comprised CB, CY and other trust staff. Baseline data was collated and evaluated by reviewing existing nursing quality assurance checks and service audits undertaken throughout the trust and which are required by all trusts. These audits included clinical audits such as mandatory training compliance, incident reports and audits of the completion of patient records and quality of care.

This scoping exercise demonstrated a lack of evidence in patient records that oral healthcare was being undertaken as routine best practice in the trust. The trust had no clinical practice policy, no mandatory training programme or agreed competency levels relating to oral healthcare. There was also no tool for assessing patients' oral health status on admission or during subsequent care episodes, and it was established that equipment available to deliver oral healthcare was not evidence-based or standardised in the trust. Oral healthcare provision

in the trust was therefore fragmented and required improvement.

Following the scoping exercise, a staff oral healthcare questionnaire (Figure 1) was developed and distributed in four randomly chosen trust hospital wards. The results of this staff questionnaire supported the findings of the scoping exercise in identifying an

Key points

- Suboptimal oral healthcare can have a detrimental effect on a person's health and well-being, and may also affect their dietary intake and nutritional requirements

- Further work is required to improve oral healthcare in acute and community settings, and it is the responsibility of all nurses and healthcare staff to promote optimal oral health

- A quality improvement project was undertaken in one trust, involving a scoping exercise, the development of an oral healthcare assessment tool and an audit of the oral healthcare products used

- Oral healthcare training continues to be developed in the trust, with the aim of disseminating evidence-based best practice that will enhance the skills, knowledge, competency and confidence of staff in this area of practice

Figure 1. Staff oral healthcare questionnaire

Ward: **Role:**   **Date:**

Please complete this questionnaire to demonstrate your current knowledge and thoughts around oral healthcare in your workplace. Your honesty in this form will provide a valuable baseline of information to support with improvements in oral healthcare in the trust

Question 1
Have you ever received training in oral healthcare?
☐ Yes – In this trust   ☐ Yes – But elsewhere   ☐ No

Question 2
How confident do you feel in undertaking an oral health assessment?
☐ Very confident   ☐ Somewhat confident   ☐ Not confident

Question 3
Please rate if you agree with the following statement:
I feel our current practice with oral healthcare is acceptable:
☐ Agree   ☐ Somewhat agree   ☐ Disagree

Question 4
What do you think is the biggest barrier towards delivering comprehensive oral healthcare?
☐ Time   ☐ Confidence   ☐ Lack of products   ☐ Education
☐ Other please specify:

Question 5
What equipment do you currently use in delivering oral healthcare?

Thank you for completing this questionnaire

inadequate understanding of the importance of oral healthcare across multidisciplinary professionals, including nurses, ward-based physiotherapists, occupational therapists, speech and language therapists, dietitians and pharmacists. The staff questionnaire also identified the need for staff education and training, as well as for the standardisation of oral healthcare products used in the trust.

Following this initial scoping exercise, an oral healthcare multidisciplinary working group was set up in February 2019. This group included the authors of this article (CB, CY and VC) as well as a quality lead, quality nurse, speech and language therapist, dental health specialist, infection prevention nurse, procurement representative and practice education facilitator. The aim of the group was to address concerns about oral healthcare in the trust. The group decided to meet monthly to discuss the progress of the project objectives. All members of the working group agreed that there was a gap in the provision of oral healthcare in the trust.

Stage 2: evaluation of oral healthcare products

The range of oral healthcare products available in the trust through procurement was investigated by the working group and the trust procurement specialist. A cost analysis of trust expenditure on oral healthcare items between April 2018 and March 2019 is shown in Table 1.

Toothbrushes, toothpaste and mouthwash were the least-procured items in the trust, with pink oral

Table 1. Trust expenditure on oral healthcare items between April 2018 and March 2019	
Item	**Cost**
Denture pots	£1,543.46
Mouthwash	£50
Pink oral swabs	£3,763
Toothbrushes	£419.38
Toothpaste	£271.45
Total expenditure	**£6,047.29**

swabs being the most procured item. Using the staff questionnaire (Figure 1), the working group aimed to identify whether the pink oral swabs were used as an alternative to toothbrushing or used to moisten patients' dry mouths – pink oral swabs should not be a substitute for toothbrushing but have been traditionally used as such in hospitals. The questionnaire responses showed that, in many cases, pink oral swabs were being used as an alternative to toothbrushing. However, since 2012 pink oral swabs have been the subject of a medical device alert notice in the UK and their use is banned following a fatality when a sponge head became detached and lodged in a patient's mouth, causing them to choke (Medicines and Health Care products Regulatory Agency 2014). Therefore, inappropriate use of pink oral swabs by staff was addressed through an education programme on optimal oral healthcare practice.

Standardising procurement of oral healthcare products

In November 2019, the working group collaborated with colleagues in the trust's procurement department to standardise the trust's formulary of oral healthcare products. This included discussions among the working group about the most suitable products available, whether these were available from NHS supplies, and whether they were cost-effective and represented value for money. As a result of these discussions, a standardised oral healthcare formulary was drafted and approved at an internal senior nurse review meeting. An agreed formulary chart was designed and distributed to each ward, and included appropriate cost codes and prices. The aim was that no products outside the agreed formulary were to be used without appropriate consultation from the working group. Products on the formulary included:

» Small-headed toothbrushes.
» Non-foaming toothpaste and standard toothpaste.
» Mouth-moisturising gel.
» Oral cleansing sticks with silicone brushes.
» Denture storage pots.

» Yankauer oral suctioning tools.
» Tongue depressors.
» Single-use oral healthcare swabs.

Trust-wide communication platforms such as the weekly digital magazine Trust Brief, the staff magazine Care to Share, and computer screensavers were used to advertise the new standardised equipment formulary across the trust.

Stage 3: Developing an oral healthcare assessment tool and care plan

Baseline data collection and findings

Before beginning work on formulating an oral healthcare assessment tool, the working group required a baseline of patients' oral health data, which was to be collected by accessing the nursing service's standard quality audits, which were undertaken routinely throughout the trust. Nursing teams undertake these audits on a weekly basis, accessing patients' nursing notes to examine admission details and ongoing care episodes, and recording answers to a series of health-related questions on the trust-wide digital platform. However, only one of these questions related to the assessment and maintenance of oral healthcare and hygiene: 'Is there evidence that regular oral healthcare is being completed?'

In total, 1,570 patients were examined by the nursing service's standard quality audits between 1 April 2019 and 30 June 2019, and these data were reviewed by the working group. It was found that 75% of nurses had entered 'not applicable' in response to the audit question 'Is there evidence that regular oral healthcare is being completed?', suggesting that nurses deemed regular oral healthcare to be unnecessary for most of the inpatient population. This finding demonstrated that oral healthcare was not being routinely undertaken or documented during admission assessments or subsequent episodes of care.

Oral healthcare assessment tool development process

From the baseline evidence and through discussions among the

working group, it was established that an oral healthcare assessment tool was required to support nurses to conduct appropriate oral healthcare assessments and to maintain patients' oral hygiene. A template oral healthcare assessment tool was developed by the working group using a selection of care plans and risk assessments from other trusts, as well as Mouth Care Matters documents (Health Education England 2022a). These resources were reviewed by the working group to identify important content and structure for the first draft of the oral healthcare assessment tool. The development of the tool began in April 2019 with a first draft completed in June 2019 (Figure 2).

Version 1 of the tool
Version 1 of the oral healthcare assessment tool was piloted on a medical ward in July 2019 for a short duration of two weeks. The objectives were to evaluate how user-friendly the tool was for nurses and if the content was deemed useful as an assessment document for patients admitted to a clinical ward. Nurses on the ward used the assessment tool with all patients who were admitted during the two-week period. Information and communication about the tool and the pilot were shared with the ward nurses face-to-face before the launch and updates were posted to the ward's social media group.

A total of 20 nurses evaluated version 1 of the oral healthcare assessment tool. They fed back that

they liked the idea of such a tool, because at that time there was not one used in the trust. They also suggested that they would like the tool to include a numerical scoring element, because this is what they were used to in other assessment tools such as the National Early Warning Score 2 (Royal College of Physicians 2017). However, the working group also observed that there were variations in how nurses completed the tool, with some using the highest score according to the tool's 'red, amber, green' rating system as an indication of the risk of suboptimal oral health, while others used their own judgement regarding this rating system.

Following the feedback, the working group discussed the parameters of assessment used in

Figure 2. Oral healthcare assessment algorithm

NHS
The Royal Wolverhampton
NHS Trust

Oral health care assessment and algorithm

Mouth assessment: complete assessment on admission, then weekly if **low risk**, 48 hours if **medium risk**, or daily if **high risk** or if patient's condition deteriorates. For patients who score a combination of risks please follow highest algorithm

Surname	Unit No
Forename	NHS No
Address	DOB
Postcode	(or affix patient label)

Look into the patient's mouth using a light source to carry out oral health assessment. Please score L, M, H in the white boxes. Follow the algorithm for the highest score achieved				Date	Date	Date	Date	Date
	Low risk (L)	**Medium risk (M)**	**High risk (H)**					
Patient condition	» Fully independent » Alert » No cognitive impairment » No communication issues	» Frail » Low cognitive impairment » Refusing diet and fluids » Poor dexterity or upper limb weakness » Dysphagia – diet only	» Nil by mouth » High cognitive impairment » Completely unable to communicate » Unable to manage own saliva or secretions » Ventilated or intubated » Tracheostomy » Unconscious » Dysphagia – diet and fluids					
Oral cavity (lips, tongue, cheeks, palate, under tongue)	» Pink and moist mouth » Clean » Saliva present	» Dry and cracked » Sticky secretions » Food debris present	» Swollen » Ulcerated » White coating					
Teeth or dentures – please circle	» Clean » Not broken » Well fitted	» Unclean » Broken » Ill fitted (loose) » Patient unhappy to remove	» Painful » Unable to wear dentures					
Gums	» Clean » Not bleeding	» Unclean » Bleeding » Inflamed	» Facial swelling » Severe pain					
			Overall rating					
			Signature/stamp					

(Source: The Royal Wolverhampton NHS Trust)

MI_5653314_11.06.19_V_0.1

the first version of the assessment tool. For example, a patient who was nil by mouth might be scored as a 'red' risk in one area of the assessment because of their clinical condition, but 'green' in other areas because they could still maintain their own oral hygiene. The speech and language therapist in the working group explained that this anomaly was due to the high risk of aspiration for patients who were nil by mouth. Therefore, it was recommended that more frequent monitoring would be required for these patients.

Versions 2 and 3 of the tool
A subsequent version of the oral healthcare assessment tool was developed by the working group following this feedback. Version 2 included more explicit signposting and clear instructions for completion. A care plan element was also added in version 2 of the tool.

A further three wards were recruited to take part in the evaluation of version 2 of the oral healthcare assessment tool in October 2019, again for a duration of two weeks. These were two medical wards and a rehabilitation ward, with feedback provided by 20 nurses. Feedback from the pilot of version 2 of the tool identified that because of its length and complexity, time was a significant issue affecting whether ward nurses would be able to complete it.

Following this feedback on version 2 of the oral healthcare assessment tool, amendments such as adding a numerical scoring system and simplifying the completion instructions were made when developing version 3 of the tool (Figure 3). In version 3, there was some discrepancy between the numerical scoring system detailed in the key and in the table headings, with the key providing ranges (0-1 low risk, 0-4 medium risk, 5+ high risk) whereas the headings showed a singular score (0 low risk, 1 medium risk, 5 high risk). This discrepancy was adapted in later versions so that if a patient scored 1, they would then be deemed a medium risk regardless of the range.

Onset of COVID-19 and the final version of the tool
Due to the onset of the coronavirus disease 2019 (COVID-19) pandemic in early 2020, the initial momentum of the oral healthcare quality improvement project had to slow due to increasing clinical and operational pressures in the trust. The two project leaders (CB and CY) were redeployed due to the pandemic and were unable to restart the project until early 2021.

In 2021, three further versions of the risk assessment tool design were piloted on wards in the trust. Following these pilots, various improvements were made until a final version of the tool was agreed. These improvements included an enhanced red, amber, green system to signpost nurses to follow the appropriate pathway of care for each patient, as well as a care plan element. Also, the final version did not include a numerical scoring system, instead relying solely on the red, amber, green system. While the nurses' feedback had previously favoured a numerical system, this was found to be too complicated to be useful in practice. The final version of the oral healthcare assessment tool and care plan is shown in Figures 4a and 4b.

During 2020, the trust decided to develop a new risk assessment booklet that included all the necessary assessments for newly admitted patients – such as falls, food and nutrition, hydration and skin integrity – and which was to be implemented on all of the trust's inpatient adult wards. The risk assessment booklet was officially launched in March 2021 and included the final version of the oral healthcare risk assessment tool.

Stage 4: rollout of online training
Alongside the rollout of the trust's risk assessment booklet, online education on oral healthcare and training sessions on how to complete the new oral healthcare assessment tool were provided for all ward nurses. This was provided on a weekly basis and advertised as Teeth Training Tuesday, enabling more nurses to join in with the initiative. In 2022, the working group also signed up to the Oral

Health Foundation's National Smile Month campaign (www. dentalhealth.org/national-smile-month), which complemented the authors' project to raise awareness of the importance of optimal oral hygiene. A promotional stand in the main hospital site was also organised, alongside the launch of a competition for best oral healthcare display in which nurses were challenged to promote oral health in their areas using posters or tabletop displays on adult inpatient wards. Prizes included fruit baskets for the winning nursing teams.

Discussion
Work initially started on this quality improvement project in January 2019, after the authors identified that oral healthcare in their trust was fragmented and that improvements were required. Communication with the authors' nurse colleagues was important in the design of the oral healthcare assessment tool, and feedback from nurses and debate among the working group informed the development of the tool. Nurses were keen that the tool clearly signposted them to their role in providing oral healthcare for patients; for example, they wanted to know what action to take if a patient presented with a particular oral healthcare issue.

The onset of the COVID-19 pandemic interrupted the quality improvement project due to staff redeployment and safety priorities at the trust. However, the working group demonstrated a drive to maintain the momentum of the project, aided by one of the project leaders (CB), who was able to inspire others with their experience, skills and knowledge in the dental and oral healthcare field.

Further oral healthcare training has since been developed at the trust and will continue to be reviewed and developed as new knowledge and information is presented.

A digital training programme for nurses, midwives, health visitors and allied healthcare professionals is also being developed. The aim is to disseminate evidence-based best practice in oral healthcare such as the Health Education England (2022a) Mouth Care Matters initiative to enhance the skills, knowledge,

competency and confidence of staff in this area of practice. It is also important to ensure newly employed nurses are trained in oral healthcare during their induction period as a standard procedure (Health Education England 2022b).

As new oral healthcare products become available, it is important to periodically review the appropriateness of the equipment included on any trust's product formulary, along with other elements such as the ongoing cost effectiveness of each product. In the authors' trust, policies and procedures recommend that this process is undertaken annually. The contents of any oral healthcare formulary

should be decided democratically by an oral health multidisciplinary working group or equivalent and ratified at a senior management level. Important safety information about products can also be used to validate and exclude certain products. An example of this can be seen in this project with the change from pink oral swabs to toothbrushes, which took place after the audit of products used in the trust.

The World Health Organization (2022) recommends that healthcare services should move away from the traditional curative approach to oral healthcare issues towards a preventive approach that includes promotion of oral health in all

healthcare sectors, schools and communities. In the future, the working group aims to develop a similar oral healthcare programme for specialist paediatric and maternity wards, thereby ensuring that the whole trust is aligned with the latest evidence-based oral healthcare information, training and procurement. This will consolidate the trust's holistic approach to care and further emphasise the importance of delivering effective oral healthcare.

Limitations
The project discussed in this article was undertaken in one trust, so the issues encountered and context

Figure 3. Oral health care assessment and algorithm mouth assessment

NHS
The Royal Wolverhampton
NHS Trust

Oral health care assessment and algorithm mouth assessment

1. To be completed on admission
2. Look into the patient's mouth using a pen torch
3. Use the highest score for each section
4. Repeat in line with care plan

Score	Care Plan
0–1	Low Risk
0–4	Medium Risk
5+	High Risk

Surname	Unit No
Forename	NHS No
Address	DOB
Postcode	(or affix patient label)

	Low risk Score 0	Medium risk Score 1	High risk Score 5	Date	Date	Date	Date	Date	Date	Date
				Score	Score	Score	Score	Score	Score	Score
Patient condition	» Independent » Alert	» Frail » Mild cognitive impairment » Refusing oral intake » Difficulty self-feeding » Dysphagia - diet modification only (level 4, 5, 6)	» Nil by mouth » Severe cognitive impairment » Unable to communicate » Unable to manage own secretions or saliva » Tracheostomy » Ventilated » Unconscious » Dysphagia with diet and fluid modification							
Oral cavity (lips, tongue, cheeks, palate)	» Pink and moist » Clean » Saliva present	» Dry and Cracked » Sticky secretions » Food debris	» Swollen » Ulcerated » White coating							
Teeth or dentures – please circle	» Clean » Well fitting	» Unclean » Broken » Ill fitting » Patient not willing to remove	» Painful » Unable to wear							
Gums	» Clean » Moist	» Unclean » Bleeding » Inflamed	» Facial swelling » Severe pain							
Overall score										
Signed										

(Source: The Royal Wolverhampton NHS Trust)

MI_6068914_10.12.19_V_0.3

Figure 4a. Final version of the oral healthcare assessment tool – assessment section

NHS
The Royal Wolverhampton
NHS Trust

Patient Name: .... NHS No:.. Unit Number: ....

Oral health care assessment and care plan

| Step 1 - tick as applicable, for Step 2 follow care plan for highest risk identified |

Please indicate if the patient has: ☐ Own teeth ☐ Dentures ☐ Dentures with the patient ☐ Upper denture ☐ Lower denture

Follow appropriate care plan based on the highest level of risk identified. Answer Yes or No to assessment questions

		Criteria	Admission	1st review	2nd review	3rd review
Clinical condition		Tracheostomy/ventilated/unconscious/sedated				
Dependence level		Fully dependent				
Cognitive		Severe cognitive impairment				
		Unable to communicate				
Mouth opening		Fully restricted (may be due to fixation)				
		Unable to swallow				
Swallowing	High risk	Nil by mouth (excluding pre procedure)				
		Dysphagia with any diet and fluid modification				
Lips		Ulcerated/bleeding/swollen				
Tongue		Blistering/ulcerated/bleeding/swollen				
Cheeks/palate/gums		Saliva absent				
		Facial swelling				
Oral pain		Uncontrolled severe pain				
Teeth		Broken teeth				
Dentures		Broken/ill-fitting dentures				
		Patient not willing to remove				
Clinical condition		Receiving steroid therapy/diabetes mellitus/oxygen therapy/mouth breathing				
Dependence level		Requires assistance				
Cognitive		Mild cognitive impairment				
		Apathetic				
Mouth opening		Some restrictions (may be due to swelling)				
Swallowing		Some difficulties				
	Medium risk	Requires assistance to eat and drink				
Lips		Dry/cracked				
Tongue		Coated/cracked/dry/red/inflamed				
Cheeks/palate/gums		Thick/sticky secretions				
		Food debris				
Oral pain		Intermittent pain				
Teeth		Unclean/generalised plaque				
Dentures		Generalised plaque				
		Debris				
Dependence level		Fully independent				
Cognitive		Fully alert/fully conscious				
Mouth opening		No restrictions				
Swallowing		No difficulties				
		Normal diet and fluids				
Lips	Low risk	Smooth/pink/moist				
Tongue		Pink/moist/clean				
Cheeks/palate/gums		Saliva present				
		Clean/moist				
Oral pain		Pain free				
Teeth		Clean				
Dentures		Well fitting/no debris				
Level of risk (high/medium/low)						
Date						
Time						
Signature						
Name and designation						

(Source: The Royal Wolverhampton NHS Trust)

MI_7827614_09.03.21_V_0.17

may differ in other organisations. However, the authors believe that the gaps identified in oral healthcare provision, and the subsequent solutions, are generalisable to other trusts that might have similar issues. It is also acknowledged that evidence to support the concept of promoting and delivering oral healthcare within the authors' organisation was largely anecdotal because there was previously no formal provision or monitoring of oral healthcare in the trust. However, this situation has now been rectified and monitoring and evaluation will take place.

Conclusion

This oral healthcare quality improvement project involved a multidisciplinary working group collecting data on the provision of oral healthcare in one trust, then formulating and evaluating an oral healthcare assessment tool with ward nurses. The working group also undertook an inventory of the oral healthcare products used in the trust and developed a formulary to be used across the trust. Following the implementation of the oral healthcare assessment tool, the working group also provided training for nurses and other healthcare staff in documenting and delivering oral healthcare.

Figure 4b. Final version of the oral healthcare assessment tool – care plan section

NHS
The Royal Wolverhampton
NHS Trust

Patient Name: .... NHS No:.. Unit Number:...

Step 2 - care plan
Enter Yes/No/Not applicable (N/A) or specific instruction. Complete care plan based on level of risk identified in Step 1.

	Actions/Interventions	Admission	1st review	2nd review	3rd review
High risk	Brush twice a day with toothbrush and toothpaste				
	If dentures present, brush twice a day with soap and water, leave dentures out at night in a labelled denture pot with lid				
	Apply mouth moisturiser to dry areas of the mouth tongue, palate, cheeks, gums, lips with oral swab*				
	Remove debris or any build up secretions from oral cavity with single use oral swab*/twizzle sticks with mouth cleanser				
	Frequent sips of water unless nil by mouth (ensure correct consistency)				
	Rinse mouth with sodium chloride 0.9% if ulcers present				
	Use suction when brushing teeth if patient is high aspiration risk				
	Refer to doctor if any of the following are present: painful lips, teeth or gums; facial swelling; swollen lips; abnormal-looking tongue; white coating; sore, widespread ulceration or mouth ulcer ≥ 2 weeks. If any of these are present for ≥2 weeks, anti-inflammatory or antifungal mouth spray are required				
	Refer to speech and language professional and doctor if new dysphagia is suspected				
	In patients with dentures and who have oral thrush, remove dentures twice a day, clean with liquid (hand) soap and sterilise in prescribed chlorhexidine solution for 15 minutes, then rinse and return to patient. Leave out at night to rest the mouth and keep cleaned dry dentures safely in a named denture pot				
	For broken/lost dentures advise the patient to see own dentist post discharge				
Medium risk	Brush twice a day with toothbrush and toothpaste				
	If dentures present, remove to brush twice a day with soap and water, leave dentures out at night in a labelled dry denture pot with lid				
	Apply mouth moisturiser to dry areas of the mouth tongue, palate, cheeks, gums, lips with oral swab*				
	Remove debris or build up secretions from oral cavity with oral swab*/twizzle stick (mouth cleanser)				
	Frequent sips of water unless nil by mouth (ensure correct consistency)				
	Rinse mouth with sodium chloride 0.9% if ulcers present				
Low risk	Brush twice a day with toothbrush and toothpaste				
	If dentures present, remove to brush twice a day with soap and water, leave dentures out at night in a labelled dry denture pot with lid				
*If the patient has a tendency to bite down, oral swabs to be used with a bite block. Tug test on oral swab to be completed prior to use	Date				
	Time				
	Signature				
	Name and designation				

RWT Oral Health Assessment and care plan Feb 2021 Draft v.04 CV
(Source: The Royal Wolverhampton NHS Trust)

MI_7827614_09.03.21_V_0.17

References

Berwick DM (1996) A primer on leading the improvement of systems. BMJ. 312, 7031, 619-622. doi: 10.1136/bmj.312.7031.619

Haresaku S, Miyoshi M, Kubota K et al (2020a) Effect of interprofessional education on oral assessment performance of nursing students. Clinical and Experimental Dental Research. 6, 1, 51-58. doi: 10.1002/cre2.248

Haresaku S, Uchida S, Aoki H et al (2020b) Factors associated with nurses' performance of oral assessments and dental referrals for hospital inpatients. BMC Oral Health. 20, 1, 68. doi: 10.1186/s12903-020-1058-0

Health Education England (2022a) Mouth Care Matters Resources. mouthcarematters.hee.nhs.uk/links-resources/mouth-care-matters-resources-2 (Last accessed: 14 February 2023.)

Health Education England (2022b) Induction Best Practice. mhcswtoolkit.hee.nhs.uk/topics/induction/induction-best-practice.html (Last accessed: 14 February 2023.)

Hill C, Guarner F, Reid G et al (2014) The International Scientific Association for Probiotics and Prebiotics consensus statement on the scope and appropriate use of the term probiotic. Nature Reviews: Gastroenterology & Hepatology. 11, 8, 506-514. doi: 10.1038/nrgastro.2014.66

Kaneoka A, Pisegna JM, Miloro KV et al (2015) Prevention of healthcare-associated pneumonia with oral care in individuals without mechanical ventilation: a systematic review and meta-analysis of randomized controlled trials. Infection Control and Hospital Epidemiology. 36, 8, 899-906. doi: 10.1017/ice.2015.77

Leis JA, Shojania KG (2017) A primer on PDSA: executing plan-do-study-act cycles in practice, not just in name. BMJ Quality and Safety. 26, 7, 572-577. doi: 10.1136/bmjqs-2016-006245

Medicines and Healthcare products Regulatory Agency (2014) Oral Swabs with a Foam Head - Heads May Detach During Use. www.gov.uk/drug-device-alerts/medical-device-alert-oral-swabs-with-a-foam-head-heads-may-detach-during-use (Last accessed: 14 February 2023.)

Munro CL, Grap MJ, Jablonski R et al (2006) Oral health measurement in nursing research: state of the science. Biological Research for Nursing. 8, 1, 35-42. doi: 10.1177/1099800406289343

Office for Health Improvement and Disparities, Department of Health and Social Care, NHS England et al (2021) Delivering Better Oral Health: An Evidence-Based Toolkit for Prevention. www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention (Last accessed: 14 February 2023.)

Oral Health Foundation (2019) Better Oral Health for All: Our Strategy to 2024. www.dentalhealth.org/Handlers/Download.ashx?IDMF=918f9dfa-365f-48d2-93be-83bffa9e205e (Last accessed: 14 February 2023.)

Otukoya R, Doshi M (2018) Selecting the right tools for mouth care delivery in hospitals. Nursing Times. 114, 11, 18-21.

Paulsson G, Wårdh I, Andersson P et al (2008) Comparison of oral health assessments between nursing staff and patients on medical wards. European Journal of Cancer Care. 17, 1, 49-55. doi: 10.1111/j.1365-2354.2007.00802.x

Public Health England (2020) National Dental Epidemiology Programme for England: Oral Health Survey of Adults Attending General Dental Practices 2018. assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/891208/AiP_survey_for_England_2018.pdf (Last accessed: 14 February 2023.)

Royal College of Physicians (2017) National Early Warning Score (NEWS) 2: Standardising the Assessment of Acute-Illness Severity in the NHS. Updated Report of a Working Party. RCP, London.

Standards for Quality Improvement Reporting Excellence (2020) Revised Standards for

Quality Improvement Reporting Excellence: SQUIRE 2.0. www.squire-statement.org/index.cfm?fuseaction=Page.ViewPage&PageID=471 (Last accessed: 14 February 2023.)

Tabatabaei SH, Owlia F, Ayatollahi F et al (2020) Nurses' educational needs in the oral health of inpatients at Yazd province in Iran: a Delphi study. BMC Nursing. 19, 1, 120. doi: 10.1186/s12912-020-00517-8

Terezakis E, Needleman I, Kumar N et al (2011) The impact of hospitalization on oral health: a systematic review. Journal of Clinical Periodontology. 38, 7, 628-636. doi: 10.1111/j.1600-051X.2011.01727.x

Vamos CA, Thompson EL, Avendano M et al (2015) Oral health promotion interventions during pregnancy: a systematic review. Community Dentistry and Oral Epidemiology. 43, 5, 385-396. doi: 10.1111/cdoe.12167

World Health Organization (2022) Oral Health. www.who.int/news-room/fact-sheets/detail/oral-health (Last accessed: 14 February 2023.)

Yao K, Yao Y, Shen X et al (2019) Assessment of the oral health behaviour, knowledge and status among dental and medical undergraduate students: a cross-sectional study. BMC Oral Health. 19, 1, 26. doi: 10.1186/s12903-019-0716-6