

of providing an MDU (see Box 1) are justified to reach communities who would either not engage with care, or only engage in an emergency by accessing high-cost unscheduled dental care (either via 111 or even accessing A&E departments). Using a mobile model situated within the community means that if a patient were to fail to attend their appointment, other patients can be engaged to fill that clinical time, because the MDU is situated within the community. In comparison, this is very difficult or in some cases not possible to do so in fixed site dental practices or clinics.

There are some disadvantages of using MDUs to provide care, which include:

- Higher cost of service than a fixed site model
- Limitation of dental treatment provided. Whilst the surgery is fully equipped, more complex treatments might not be appropriate in order to maximise use of the MDU or because equipment cannot be stored onboard due to space limitations
- Isolation of the dental team. This might

have detriments when needing clinical support, but also staff safety risks if sites and patients are not appropriately risk-assessed beforehand

- Noise pollution and environmental effects of a mobile vehicle running on fuel
- Loss of clinical time for setting up/closing down of clinic and travel
- Risk of vandalism, break-down of equipment or van
- Increased staff costs; eg additional training, need for additional members of staff, drivers etc.

Overall, mobile clinics can deliver flexible dental services for populations who struggle to engage with and access dental care. Taking services directly into certain communities offers an equitable, inclusive and sustainable model of delivering care. ■

References

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Box 1 MDU costs

- Cost of vehicle
- Cost of dental surgery equipment (dental chair, cart, suction, x-ray machine)
- Cost of dental equipment and consumables
- Vehicle costs (MOT, servicing, tax)
- Petrol and fuel for generator
- Staff costs; eg driver, staff member maintaining vehicle, training to use MDU
- Clinical staff costs
- Other vehicle costs; eg emission charge zones, parking permits, secure parking
- Clinical-associated costs; eg compliance, CQC, servicing, waste disposal

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A healthy mouth helps to maintain balanced metabolic profiles

Common oral infections, periodontal diseases and caries are associated with inflammatory metabolic profiles related to an increased risk of cardiometabolic diseases, a new study suggests.¹ Oral infections also predicted future adverse changes in metabolic profiles.

The association between oral infections and adverse metabolic profiles was observed in the Finnish Health 2000/2011 and Parogene study cohorts.

Author Professor Pirkko Pussinen from the University of Eastern Finland said: ‘The observation is novel, since there are only few studies connecting extensive metabolic measures with oral infections, and no earlier prospective studies exist.’

Published in the *Journal of Dental Research*, the study also involved researchers from the University of Helsinki, Karolinska Institutet and Medical University of Graz.¹

Progressed oral infections and inflammations – endodontic lesions and periodontitis – are known to be associated with an increased risk of cardiometabolic diseases. Although the mechanisms behind these associations are partially unclear, poor oral health is probably sustaining systemic inflammation.

This study comprised 452 middle-aged and elderly Parogene patients and 6,229 participants of the population-based Health-2000 survey. In 2011, 4,116 Health-2000 participants provided a follow-up serum sample. Serum concentrations of 157 metabolites reflecting the risk of chronic diseases, such as lipid and glucose metabolites, ketone bodies and amino acids, were determined with an NMR spectroscopy method.

Parameters describing the oral health status were collected at baseline in clinical and radiographic examinations. They included those describing the periodontal status, such as bleeding on probing, periodontal probing depth and alveolar bone loss. Caries-related parameters included root canal fillings, apical rarefactions and caries lesions. The study composed of a cross-sectional part analysing the association between the metabolic measures with prevalent oral health, and of a prospective part examining whether oral infections predict the levels of metabolic measures in the follow-up.

Among 157 metabolic measures, increased periodontal probing depth associated with 93, bleeding on probing with 88, and periodontal

inflammation burden with 77 measures. Among the caries-related parameters, root canal fillings were associated with 47, inadequate root canal fillings with 27, and caries lesions with eight metabolic measures. In the prospective analyses, caries was associated with 30 and bleeding on probing with eight metabolites. These metabolic measures were typical of inflammation, thus showing positive associations with fatty acid saturation degree and very low density lipoprotein (VLDL) parameters, and negative associations with high density lipoprotein (HDL) parameters.

Adjunct Professor Aino Salminen from the University of Helsinki said: ‘Oral infections may partially explain unhealthy lipid profiles.’

Adjunct Professor Kåre Buhlin from Karolinska Institutet concluded: ‘Oral infections represent a significant risk factor for systemic health. Importantly, they are modifiable through early prevention and treatment.’

References

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