Single-use hand instruments

Making a case for their use in general dental practice

By Robert Jagger, UK

A wide range of single-use disposable dental and surgical instruments is now produced by a number of manufacturers. Instruments are available for purchase either singly or as procedure kits and are priced to be a realistic alternative to decontaminating reusable instruments.1 Paradoxically, single-use instrument is typically associated with the decontamination, sterilisation and packaging of reusable instrumentation.

Procedure packs too are available for specific procedures and contain all the necessary instruments. Examples of packs include those for dental and periodontal examination, restorative procedures, maxillofacial biopsy, minor oral surgery, and periodontal microsurgery. This article seeks to challenge current clinician perceptions of single-use instrumentation by examining the potential benefits of high-quality single-use instruments in daily practice.

Quality

Single-use instruments can be of extremely high quality and be almost indistinguishable in use from reusable instruments. Clinicians often comment that they are impressed by their quality and functionality and that they appear too good to throw away after just one use. These instruments are a significant step forwards from the poorer quality equipment that was previously available.

Before selecting a supplier of single-use instruments, however, it is critical to ensure that they comply fully with all relevant British and European medical device regulatory standards and that they are manufactured from medical-grade surgical steel and undergo rigorous in-process quality assurance checks and batch testing. Purchasing instruments from a supplier approved by the British Dental Industry Association will provide practitioners with assurance that they are dealing with an appropriately regulated manufacturer.

Sterilisation

One of the most significant changes to have affected the dental profession in recent years has been the adoption of rigorous sterilisation and cross-contamination procedures (HTM 01-05). Decontamination in Primary Care


dental procedures, in particular the use of high-quality surgical steel and unaffordable surgical instruments are potentially being utilised in a contaminated state. Use of single-use disposable instruments ensures that instruments are not contaminated, protecting patients and clinical staff alike.

Dentists are now equipped with HTM 01-05-compliant equipment. Re- processing dental instrument trays, however, inevitably leads to significant wear and tear and ultimately instrument damage. Regular sharpening and replacement of reusable instruments is necessary for instruments such as luxators, chisels and elevators. This can add substantial costs to the reprocessing of reusable instruments. Reprocessing protocols dictate that a dental practice must hold significant stock of expensive reusable instruments, much of which is barely used or never used at any given point in time. Single-use instruments can provide a cost-effective continuum to cover unexpected emergency situations in which reusable instruments are unavailable, for example when managing unplanned surgical complications or when washers disinfectors or sterilisers are inadequate and significant clinical time may be lost while waiting for the arrival of a skilled service engineer. Single-use instruments enable clinicians to

Convenience

Among other applications, single-use packs allow rapid and efficient management of dental extractions that become complicated by, for example, crown fracture. Contingency stock of single-use surgical packs (comprising integral single-use scalpels handles and blades, tissue retractor, peri- ostial elevator, dental elevators and suture packs) enables highly convenient, efficient and cost-effective management of complications.

Single-use conservation and ex- amination packs provide a cost- effective means of extending the length of daily clinic treatment sessions; especially towards the end of the day, when access to sterile reusable instruments may be compromised owing to sterilisation equipment downtime or cleaning rou- tines (when nursing staff are therefore unavailable for clinical duties).

In endodontics, clinicians can more effectively identify and control procedure costs and maximise their return on time-consuming and costly procedures with the single-use rubber dams and root canal obturation packs. Safe- ty-conscious patients are increas- ingly requesting that single-use in- struments be used for their treat- ment because they feel more com- fortable if the hand instruments used to perform their procedure are brand new and have never been used on another patient. Single-use instruments eliminate infection prevention concerns associated with the reprocessing of reusable instruments.

Single-use dental scalers are an efficient solution for dentists, dental hygienists and dental therapists, since every instrument is guaran- teed to be sharp for every proce- dure, enabling reduced treatment times and less patient discomfort. The Instrapac Periodontal Microsurgery Pack (Robinson Healthcare) is designed to facilitate complex periodontal surgical procedures in a cost-effective way ensuring that instruments are always functional and sterile. Robinson’s soft-tissue biopsy packs provide an off-the- shelf sterile, cost-effective solution for performing intra-oral tissue bi- opies, particularly in general prac- tice, where these procedures are often performed infrequently.

In implant dentistry, single-use peri- osteotomy and microsurgery packs provide a cost-effective solution for procedures that require precision and speed.

Moreover, single-use conserva- tion and surgical packs offer bene- fits when managing medically vul- nerable patients, including those with immunocompromising con- ditions and those requiring dental treatment before elective cardiac and renal surgery and pre- and post-head and neck radiotherapy and chemotherapy.

Environmental impact

It is often forgotten that decon- tamination and sterilisation pro- cedures consume large amounts of energy, water, cleaning fluids and consumables, with associated sig- nificant environmental impact. Single-use surgical instruments are designated as a specialist clini- cal waste stream and as such must be disposed of in accordance with UK and European clinical waste management regulations. Histori- cally, this has meant that they were disposed of alongside clinical sharps waste and ultimately con- veyed to incineration and landfill. This has previously raised con- cerns over their adverse environ- mental impact.

However, a recent innovative partnership between Robinson Healthcare and one of the country’s largest specialist health care waste management companies, Healthcare Environmental Group (HEG), has led to the development of a unique UK-wide recycling programme for single-use surgical consumables. Under this initiative, HEG is now able to pro- vide dental practices with a unique reusable Healthcare Sharps waste containment system. The company has a fleet of dedicated, regulation-compliant, purpose-designed vehicles and the capacity to service individ- ual dental practices and clinics with scheduled waste container collections and deliveries. Contain- ers are tracked from practice to recycling station using GPS track and trace technology. Depending on the annual volume of steel re- cycled, HEG is potentially able to offer a payback to dental practices that use the Healthcare Sharps recycling service. Dental practices can demand a payback to dental practices that use the Healthcare Sharps recycling service. Dental practices can demand a payback to recycling stations across the UK, offering an energy recovery programme that maximises the environmental benefits.

Conclusion

The use of high-quality sin- gle-use instruments can provide significant advantages to dentists in general dental practice, particu- larly in terms of sterility, conven- ience, efficiencies and reduced operating costs. Packs, such as sur- gical, restorative, periodontal and implant packs, can be particularly useful because purchase costs of the single-use instrument option are less significant when the substan- tial hidden costs of reusable instru- ments are considered, and their cost in use is typically significantly less than the reusable instrument option. Furthermore, recent ad- vances in the way that these in- struments may be recycled have effectively addressed environmen- tal concerns.

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Editorial note: A list of references is available from the publisher.

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