



## Small steps to sustainability for students

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### Aim

This piece aims to demonstrate the drive and enthusiasm for change towards more sustainable practices within Peninsula Dental School, Peninsula Dental Social Enterprise. In addition, it aims to illustrate how modelling best practice encourages students to consider sustainability in their day-to-day practice and future.

### Introduction

Created in 2013, Peninsula Dental Social Enterprise (PDSE) is a Social Enterprise Community Interest Company and works alongside Peninsula Dental School (PDS), University of Plymouth in providing the clinical placement for dental healthcare students, clinical services, and community engagement. Students from the University treat NHS patients in four state-of-the-art Dental Education Facilities (DEFs) across the region, whilst under supervision. PDSE also delivers a wide-ranging suite of outreach programmes via their Dental Outreach Team (DOT) connecting students and the school to the local community. Community purpose drives

everything PDSE does, reinvesting profits into services and care for those they serve.

In their 1<sup>st</sup> and 2<sup>nd</sup> years, dental and dental therapy and hygiene students are introduced to the importance of community engagement and social accountability through the Inter-Professional Engagement (IPE) modules. In the Year 2 module, students work alongside local organisations to co-produce and deliver a health improvement project within the community focussing on adopting positive, healthy lifestyles. The students are supported closely by the IPE Co-ordinator who works within the DOT at PDSE and academic staff from the University. The module provides the students with an understanding of the challenges and barriers people face to maintain positive oral health routines and increases their professional and personal skillset away from the clinical setting. In addition, it enables students to gain a wider appreciation of the small changes they can make as future professionals in their approach to care of their patients and practical applications in the wider sense that impacts on both their community locally but also globally.



**DISCUSSION**

*How modelling sustainable practice with students enables them to understand the impact small changes can make*

As a future dental professional, student understanding of their responsibility to their community whether that be locally or globally is so much more than meeting and talking with local groups. It's becoming more urgent than ever that our students understand the impact their profession and actions place on the planet and their role in addressing these challenges.

Dentistry, in particular, has high carbon-intense activity including the impact of travel both by staff and patients, use of services such as gas, electric and high volumes of waste along with current evidence suggesting that various dental procedures are considered the highest contributor to the dental carbon footprint.<sup>1</sup> In addition, it takes 500 years for a plastic toothbrush to breakdown and generally ends up in landfill.<sup>2</sup> It can also take up to 1,000 years in landfill for plastic bags given out during outreach sessions to decompose due to photo-degrading and even then never totally disappears, simply getting smaller, becoming microplastics, which are now being discovered in our seas and oceans.<sup>3</sup> These numbers are something every dental professional should consider whether during clinical dental practice or when conducting outreach within the community.

So how do we equip our students with the knowledge and tools to enable them to make

to support the dental sector, sharing opportunities to make change through the use of toolkits and guidance, known as Green Impact.<sup>5</sup> Internationally recognised, Green Impact Dentistry is a learning and awards scheme providing practical advice and tips for dental practices who want to improve their sustainability and social responsibility.

Within PDSE and the DOT there have been significant changes to practices to achieve the organisation's sustainability goals over recent years. By making these changes within the clinical environment students are able to see the various opportunities, in a real, practical sense, equipping them with the knowledge and confidence to make changes in their own future careers and teams.

Day to day, PDSE have driven forward their focus on sustainability putting in place a comprehensive strategy, achieving

- Encouragement of car sharing where possible, use of public transport and offering a cycle to work scheme
- Installation of an EV pool car
- Removal of plastic cups and exchanging them for paper cups in patient facing areas and offering water for refillable bottles



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small changes to their routines and practice to begin to address this?

Leading by example at the highest level PDS demonstrates to the students its commitment to community, being a recent winner of the Times Higher Education Awards 2023, ranking first in the 'Outstanding Contribution to the Local Community' category.<sup>4</sup> Embracing the students' desire to drive forward change the National Union of Students (NUS) have developed a framework

a Silver award at the Green Impact Dentistry Awards. The awards recognise organisations who have addressed sustainability issues around various themes including education, water and energy usage, waste, recycling, strategy and policy and procedures. This approach is embraced by PDSE staff and in turn the students and is integral to how they undertake their clinical placements. Examples of recent initiatives are:

- Introduced recycling points in all DEFs for empty toothpaste tubes

- All staff have been provided with refillable water bottles
- Appointment of Sustainability Champions within the workplace to foster positive attitudes, share learning and suggestions and implement change
- Installation of energy efficient lighting, changing to LED lighting across the estate – so far replacing 420 units saving 9,080 watts and 75% more efficient
- Reduced cable ties on transportation boxes saving 1,546 ties and 10.5 kg CO2e

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- Switched from using labels to ink stamp saving 65,592 labels every 12 weeks
- Reduction in energy and utilities, implementing new processes in decontamination reducing water and energy saving 1.8 tCO<sub>2</sub>e annually
- Changes to plant and equipment running time, temperature and power collectively offering saving of 18.9 tCO<sub>2</sub>e
- Carbon offsetting plan for business mileage through certified programme, 2023 85 tCO<sub>2</sub>e
- Recognising the importance of sustainability by including this as a PDSE core value and embedding it across all decision making
- Setting goals to achieve 'Net Zero' of direct carbon emissions (Scopes 1 & 2) by 2040 with a target 40% reduction of direct emissions by 2027 and to achieve 'Net Zero' of indirect carbon emissions (Scope 3) by 2045 with a target 18% reduction of indirect emissions by 2027.

As part of their community engagement projects within PDSE, the DOT distribute over 4,000 bagged brushes and toothpaste a year and by co-ordinating the IPE module the team see students donating over 500 of these packs a year as part of their community engagement activity. These would have been provided to participants within a bag containing information in addition to the brushes and paste. The team have implemented changes across both their own delivery and the student engagement activity, modelling best practice, demonstrating sustainable alternatives and equipping the students with the knowledge to instigate this way of working in their own future practice. Recent changes within the DOT have seen:

- Changes to information sharing, moving from printed materials to digital resources through the PDSE website, using PDFs and providing community groups with digital packs of resources and information to share with those they support
- Changing over from distributing plastic toothbrushes to bamboo
- Changing the plastic 'goody' bags to recycled paper bags when giving out products during outreach activity
- Using biodegradable branded products rather than plastic such as promotional keyrings and bookmarks
- Including PDSE's sustainability lead in the IPE module, hosting a group of students to deliver an annual 'lunch and learn' with their peers to share good practice and emerging initiatives across dentistry.

During the IPE module, the staff models positive changes, demonstrating to students the small actions that can be made and simple alternatives that can be put into practice to begin to make a change. Students are introduced to this through reflection, facilitated sessions, discussions and engagement where they begin to understand their place and responsibility to their community. Modelling best practice when it comes to community outreach, the DOT also plays an important role in this, demonstrating sustainable ideas, showing alternative products and planting the seed of sustainability with every student.

During the module the students are introduced to the concept of sustainable project delivery, initially through an introductory workshop where they begin to learn more about their local community and explore potential project ideas. Built into this initial workshop students are encouraged to consider opportunities to make their project ethical and sustainable. This could be as simple as swapping plastic bags out for canvas or paper bags when providing essential consumables to participants and providing bamboo toothbrushes. Then during the project planning phase, which takes place over a couple of months, students work alongside their community organisation, the IPE

staff and DOT to prepare their intervention. The DOT play an important role throughout this process, supporting, encouraging and enabling the groups to factor in various opportunities to include sustainable options having many years' experiences in community engagement.

### Conclusion

In conclusion we know that the next generation are passionate about change and sustainability and we as educators and mentors are in a unique and privileged position of being able to model good practice and support our students' passion to instigate change.

By doing so, we plant the seed of possibility with our students early on in their professional journey, enabling them to have the knowledge of the options available to them at both a small personal level and in the wider practice level context. We have a responsibility as current providers of care to demonstrate to our students the possibilities that exist and continue to strive to make changes, no matter how small. Step by step each change can make a difference and students can then feel able to make those steps themselves to sustainability and a brighter future in their dental career, practice, community and beyond.

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