Euro Surgery 2020: Utilisation of Plastic Surgery Theatres in a Single UK Centre

Harry Lobb

University of Liverpool, UK, St Helen's and Knowsley Teaching Hospitals NHS Trust, UK

Given the average cost of a NHS operating theatre is £1,200 per hour, it is essential that optimal utilisation is achieved. There are no standard guidelines for plastic surgery theatre utilisation. UK governmental institutions have suggested that operating departments should aim for 90% utilisation but there has been little research to validate the target of 90%. In 2018, the NHS Benchmarking Network's Operating Theatres project suggested a minimum of 83% utilisation should be achieved by general surgery theatres. In this study, the database 'Opera' was accessed to retrospectively analyse plastic surgery theatre times. Theatre utilisation was calculated as a percentage of total scheduled theatre time used by operative time. This audit aimed to assess the utilisation of plastic surgery theatres in one NHS hospital. In this study, the overall theatre utilisation rate was 76.7% with 7.5% of time lost due to late starts (median 20 minutes), 6.5% of time was used for patient turnover (median 14 minutes) and 12.1% of time was wasted by early finishes (median 36 minutes). Theatre utilisation in this study is below the recommended level. Recommendations: 1. Aim to perform the 'huddle' in theatre half an hour before the list begins; 2. Communication of a 30-minute and 15-minute warning so patients can be sent for earlier to decreased turnover time; 3. Re-audit after changes have been made. If start times and turnover times are improved, there is the potential to add extra patients to theatre lists, increasing theatre utilisation. Nature works on some fundamental principles which we consider as nature's norms and which have been functioning since its creation. Biodegradation of materials is the norm of the nature or is called recycling of its basic elements. All natural and biological fuels, animals and plants remains, end up converted into simple compounds and elements to be used up again as natural resources. Human made materials though helped in bringing a revolution in humans lives by providing easily available, abundant, cheap and light weight materials manufactured from easily reproducible and readily available chemicals thus shifting a complete dependence on these non-natural resources. But in the long term that shifts proved costly to the environment, humans and other living being's health. As these are human made synthetic material have been disturbing the fine balance maintained by nature to dispose of the residual waste. Plastic is one of the major and most important chemical that shaped our lives in the last century until today but unfortunately at the expense of natural balance. Today most of the plastic products are completely bio-ungradable. While improving our life styles by using this cheap readily available material we are advertently fighting against nature's norms. We as humans have damaged our environment more than we can imagine. When this earth was handed over to us it was plastic free. We have done all this for different reasons, which are all linked with our life style and habits. Use of plastic in the shape of plastic bags, plastic toys and lifesaving medical instruments etc is now our nature. As plastics are not biodegradable and due to extensive use plastics is one of the major threats to our environment. The word plastic is derived from the Greek πλαστικός (plastikos) meaning "capable of being shaped or molded" and, in turn, from πλαστός (plastos) meaning "molded"[1,2]. Plastic is not new to our world, it existed in nature form even before we invented it, and rather idea of plastic came from nature itself. Early plastic was bio-de-

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rived from materials such as egg and blood proteins, which are organic polymers. In around 1600 BC, Mesoamericans used natural rubber for balls, bands, and figurines [3]. Natural forms of plastics are natural rubber, nitro cellulose; collagen, galalite etc. and synthetic form are example epoxy, polyvinyl chloride, bakelite. But it is not the natural plastic which has become a threat to our environment rather it's over use and synthetic plastic which is now one of the biggest threats to our environment. Parkesine (nitrocellulose) is considered the first man-made plastic. The plastic material was patented by Alexander Parkes, in Birmingham, England in 1856 [4]. It was unveiled at the 1862 Great International Exhibition in London [5]. Parkesine won a bronze medal at the 1862 World's fair in London. After World War I, improvements in chemical technology led to an explosion in new forms of plastic, with mass production beginning in the 1940s and 1950s (around World War II) [6]. In 2014, plastic sale of the top fifty companies amounted to US$ 961,300,000,000 [7]. Many of the top fifty plastics companies were concentrated in just three countries: United States, Japan & Germany. In developed economies, about a third of plastic is used in packaging and roughly the same in buildings in applications such as piping, plumbing or vinyl siding [3]. Other uses include automobiles (up to 20% plastic) [3], furniture, and toys. In the developing world, the applications of plastic may differ, 42% of India's consumption is used in packaging [3]. There are differing estimates of how much plastic waste has been produced in the last century. By one estimate, one billion tons of plastic waste has been discarded since the 1950s [8]. Others estimate a cumulative human production of 8.3 billion tons of plastic of which 6.3 billion tons is waste, with a recycling rate of only 9% [9]. Much of this material may persist for centuries or longer, given the demonstrated persistence of structurally similar natural materials such as amber [10]. The presence of plastic, particularly micro plastic, within the food chain is increasing. In the 1960s micro plastic were observed in the guts of seabirds, and since then have been found in increasing concentrations [11]. The long-term effects of plastic in the food chain are poorly understood. In 2009, it was estimated that 10% of modern wastes was plastic [6], although estimates vary according to region [11]. Meanwhile, 50% to 80% of debris in marine areas is plastic

Biography: Harry Lobb and Andrew Sweeney are final year medical students at the University of Liverpool, UK.

Research Interest: Theatre Utilisation and Quality Improvemnet

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