

**Objective:** Composite resin restorations could fail due to ineffective polymerization. The aim of this clinical audit was to measure the irradiance of chair-mounted LED Light Curing Units (LCUs) in the Faculty of Dentistry, Universiti Teknologi MARA, Malaysia.

**Materials and Methods:** The irradiance of 119 chair-mounted LCUs was measured using digital LED radiometer (SDI LED Radiometer, SDI, Germany) by placing the light cure tip on the sensor of the radiometer for 10 seconds. Three readings per unit were recorded and the mean irradiance calculated. Details of LCUs including baseline values, location, serial number of LCUs body, date of purchase and last maintenance were documented. In addition, the tips were also evaluated qualitatively. The individual unit irradiance was analysed by comparing recorded value against the baseline suggested by manufacturer. The gold standard was to have all LCUs irradiance within  $\pm 10\%$  of the manufacturer specification.

**Results:** The chair-mounted LCU consist of 105 on basic dental unit (BDU) and 14 on specialist dental unit (SDU) of which each category has a different baseline value. Only 8% of the LCUs complied the gold standard. 98% (n=103) of LCU on BDUs exceeded the gold standard compared to only 28% of the LCU on SDUs. The mean irradiance for chair-mounted BDUs was 1435mW/cm<sup>2</sup> which was 144% relative to the manufacturer specification compared to SDUs (86%). Qualitative observation found cracked, damaged and resin contamination of LCU tips.

**Conclusion:** The mean irradiance of chair-mounted LCUs on BDUs exceeded manufacturer specification. However, lesser mean irradiance was observed for SDUs.

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## OSC6: An Audit on the Efficiency of Chair-mounted LED Light Curing Units in Faculty of Dentistry, Universiti Teknologi MARA, Malaysia

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