

3D PRINTING FOR CRANIOMAXILLOFACIAL SURGERY

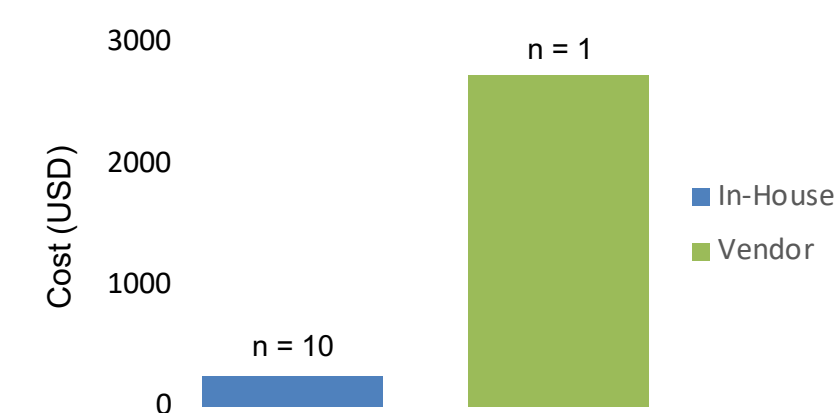
A Systematic Review Of Applications And Logistical Outcomes

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Figure 4. Comparison of in-house and vendor weighted mean cost per construct



CONCLUSIONS

- 3D printing is a time-intensive process, and print times can vary widely as a function of printing technology, medium, and resolution
- In-house 3D printing may reduce the cost and improve the efficiency of CMF procedures

LIMITATIONS

- No assessment of constructs used outside of the surgical setting (i.e., for training, teaching, or surgical planning)
- Inability to control for anatomical variability in the size of printed constructs
- Few data available regarding vendor printing times
- Low or Very Low confidence in the quality of the evidence per GRADE criteria

IMPLICATIONS

- Single-institution pilot data needed to predict initiation costs and educational lead times
- Data on longitudinal patient-centered outcomes needed to justify temporal and financial investments in printing.

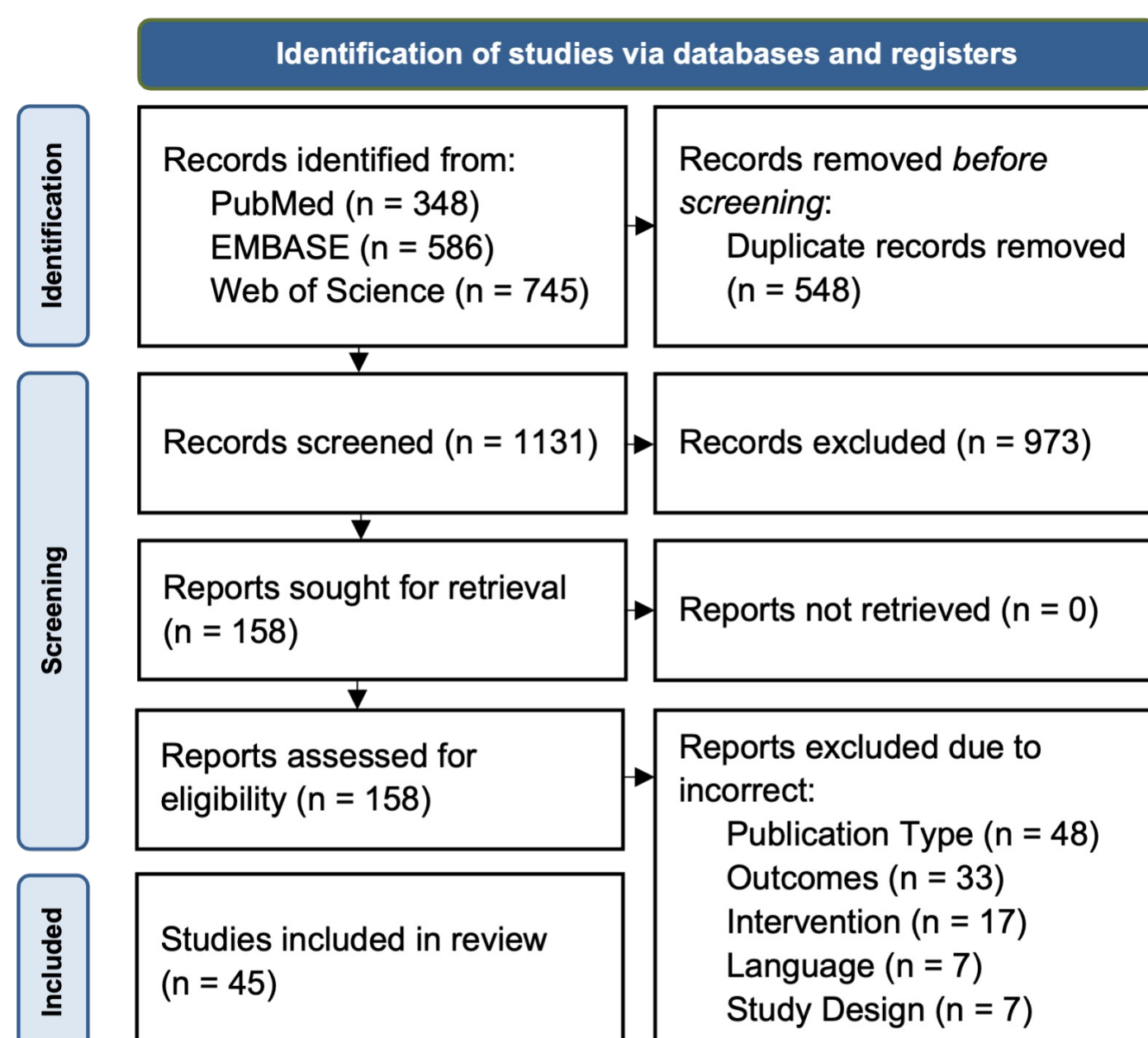
BACKGROUND

- The operative use of 3D-printed constructs is associated with reductions in complications and operative times and improved patient outcomes for many craniomaxillofacial (CMF) procedures
- Printing workflows require substantial investment in printing technologies for successful clinical integration

OBJECTIVE

Characterize the temporal and financial investments required for 3D printing in the field of craniomaxillofacial surgery

METHODS



RESULTS

Figure 1. Properties of printed constructs (n = 1,136 constructs)

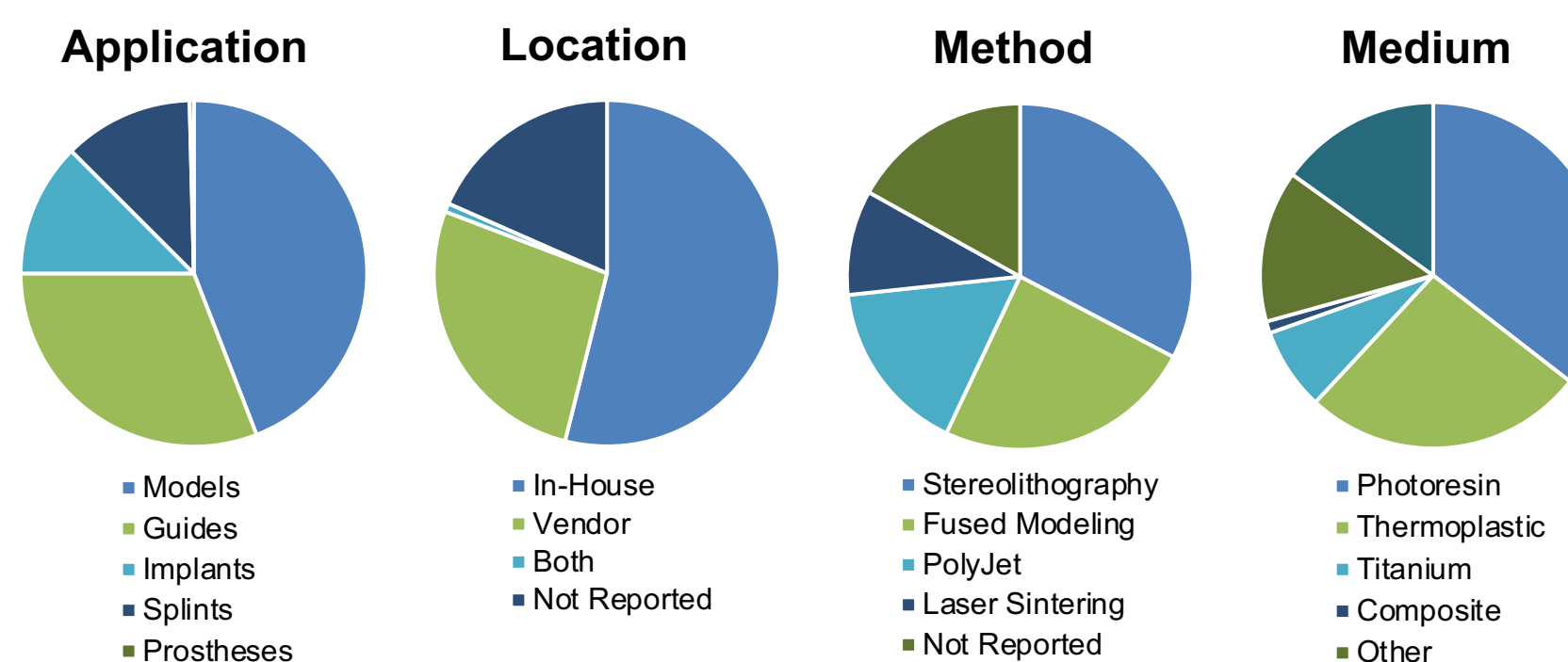


Figure 2. Temporal requirements for select constructs

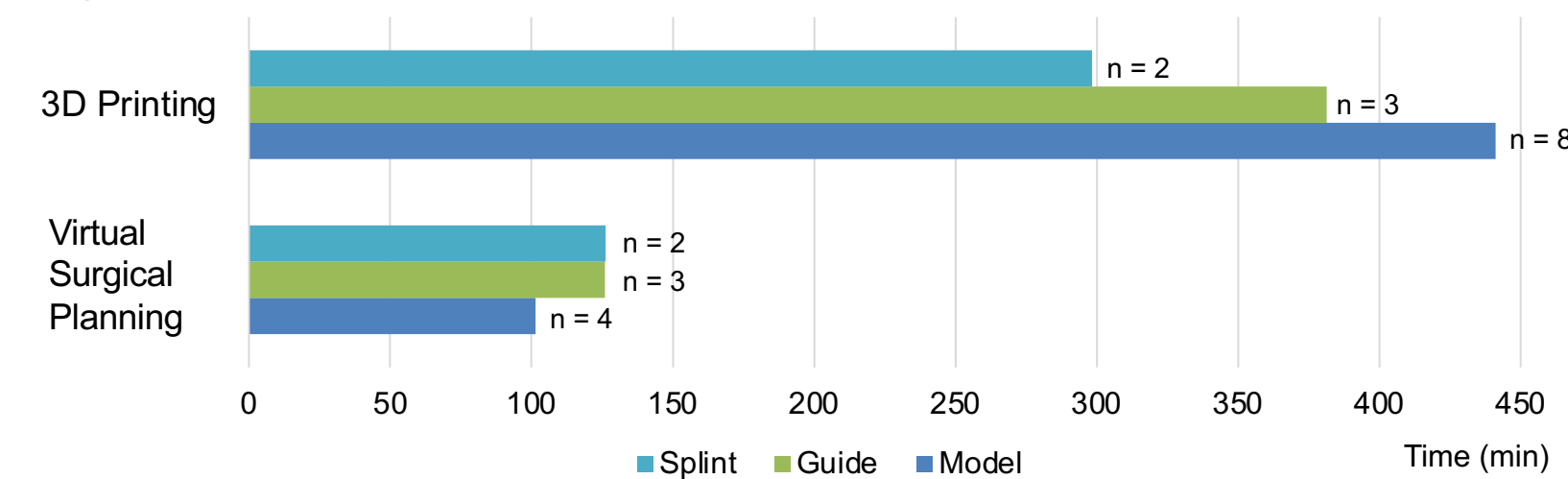


Figure 3. Comparison of in-house and vendor constructs

