

## Cleft Surgery Service at National Orthopaedic Hospital Enugu: Impact of free treatment programme

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### ABSTRACT

**INTRODUCTION:** Previous reports on free surgeries have tended to focus on the numbers of patients treated. Little has been documented on the impact on training hence this report. Such grants should positively impact training, patient outcome and volume of patients.

**METHODS:** A retrospective review of all cleft surgeries carried out two years before and after the commencement of free surgical treatment at the hospital (from November 2004 to October 2008) was undertaken. The demographics were studied for both primary and revisional surgeries. The primary surgeons were also noted. Excluded from the study are procedures to remove sutures. Simple arithmetic analysis was used.

**RESULTS:** Seventy-three cleft procedures had been carried out before, while 168 procedures were carried out after October 2006. Eight patients aged over 15 years had lip repairs before while 42 patients over 15 years had lip repair after commencement. Fourteen procedures were carried out by three trainee surgeons before; while 29 procedures were carried out by nine trainees after October 2006. In 2005 an average of four procedures a month were undertaken; this increased by 2008 to eight.

**CONCLUSION:** Free treatment positively impacts patient turnout and training, and are encouraged to improve the quality of healthcare in the country.

**KEYWORDS:** cleft care, free treatment, training Nigeria

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### INTRODUCTION

Free cleft treatment programmes have been variously reported in developing nations.<sup>1-4</sup> Some allude to the benefits of such programmes not only to patients but also to the scientific community, but such reports often have not quantified the impact of these on surgical training programmes.<sup>2,3</sup>

This study was undertaken to assess the impact on the training of residents at the National Orthopaedic Hospital Enugu, a major accredited training centre in Nigeria for plastic surgical residents, in the period 24 months before and after the commencement of free treatment. Cleft surgery has been undertaken at the hospital since inception in 1975.

### MATERIALS AND METHODS

A retrospective analysis of patient records 24 months (November 2004 to October 2008 inclusive) prior to, and

following, the commencement of the Smiletrain treatment grant at the hospital was made. Smiletrain is an international charity focused on cleft care. Information was from theatre records, medical records department and theatre facilities. Excluded are procedures for removal of sutures only. The study includes unilateral and bilateral cleft lip patients, alone or in combination with cleft palate. The age at presentation for surgery during the periods were compared. The total numbers of surgeries in the period under review, monthly averages, age and gender of patients were recorded. This includes primary surgery and revision procedures Completion of palatoplasty for patients with cleft lip and palate; and the primary surgeons were also noted. The number of surgeries performed by consultants or trainees in each period were compared and noted. Simple arithmetic analysis was used.

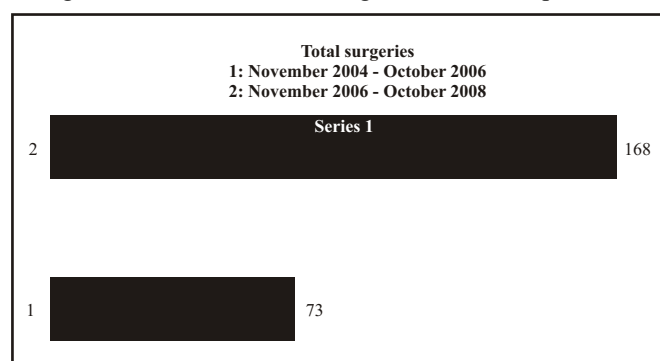
Limitations of study: Pictorial records for comparison of outcomes were not done, nor were the fistula or wound dehiscence rates assessed in any of the periods owing to poor recording, absence of a scoring method in use at the hospital, and poor follow up in both lip and palate. As completion of lip and palate procedures in patients with both lip and palatal clefts is ongoing it was difficult to assess the completion rate attributable to free treatment. Speech results were not assessed.

**DEFINITIONS** Patients above 15 years in this study were termed adults.

### RESULTS

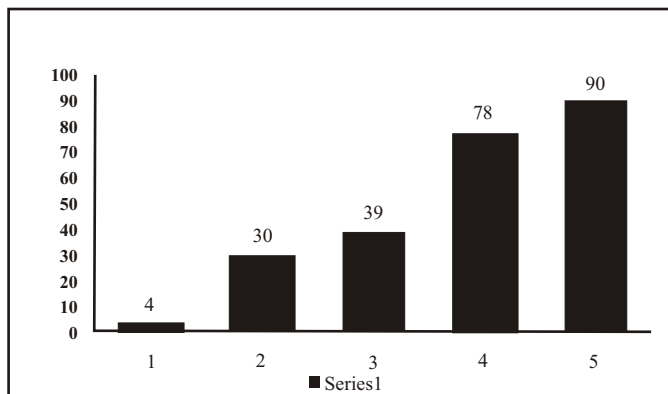
There were 241 cleft surgeries performed between November 2004 and October 2008. Of these 173 were lip repairs and 68 palate repairs. A total of 73 surgeries were performed 24 months before grant, and 168 surgeries performed 24 months after the grant (November 2006 - October 2008) representing a 2.3 fold increase (figure 1).

Figure 1: bar chart of total surgeries in the two periods



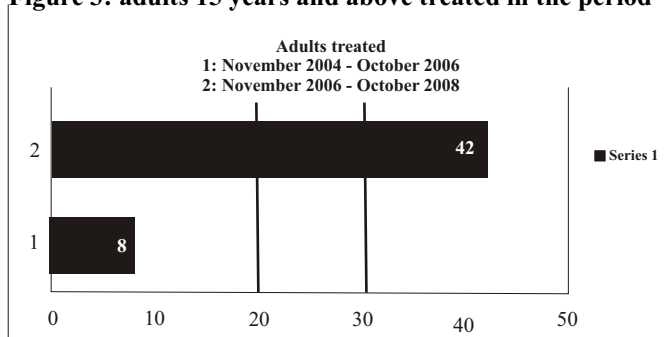
Between January and December 2005 30 cleft surgeries were performed, with a maximum of four procedures a month recorded. Between January and October 2008 90 surgeries had been performed with a maximum of 11 cleft surgeries a month recorded (figure 2).

Figure 2: procedures done in each year of the study period. 1: November to December 2004. 2: January to December 2005. 3: January to December 2006. 4: January to December 2007. 5: January to October 2008.



Between November 2004 and October 2006 (before the grant) eight adults (11%) had lip repairs. Between November 2006 and October 2008 (after the grant) 42 adults (25%) had lip repairs representing a greater than fivefold increase in adults presenting for lip repair (figure 3).

Figure 3: adults 15 years and above treated in the period



### Revision surgery

Between November 2004 and October 2006 there were two lip revisions, but eight lip revisions between November 2006 and October 2008. Incidentally all were for female patients (figure 4).

Figure 4: pre and post operative patient for revision cleft lip surgery (done by a resident)



### Palatoplasty

Between November 2004 and October 2006 13 palatoplasties were performed as against 39 between November 2006 and October 2008.

### PRIMARY SURGEON

There were a total of seven senior residents training in plastic surgery between 2004 and 2006, three trainee surgeons carried out 14 lip repairs in this period. There were nine trainee surgeons between 2006 and 2008. Each was a primary surgeon. Between November 2006 and October 2008 29 lip repairs were carried out by the nine trainees. This represents a two-fold increase in the number of trainee procedures, and a threefold increase in the number of participating trainees. No palatoplasty was done by trainee in the period under study. There were five

consultant plastic surgeons in the employment of the hospital throughout the duration of the study.

### **Team care**

Prior to commencement orthodontics and speech therapy were unavailable at the hospital. Following free surgery the services for both were obtained.

### **DISCUSSION**

There was no expansion of facilities such as bed space or theatre space in the hospital in the period under study. The number of consultant plastic surgeons also was static, so the increase in volume is most likely due to free treatment. However the average of 36.5 surgeries per year in the period before the free treatment differs from the average of 13 surgeries a year between 1993 and 1999 in the same institution.<sup>5</sup> The difference may be as a result of reduced awareness in the earlier period. Manpower shortage as there were fewer (four) surgeons and physician anaesthetists (one) then may have also played a role. The finding of increased volumes when free treatment commences is expected. It had been noted previously that cleft patients are often from low socioeconomic backgrounds<sup>3, 5</sup> therefore awareness of treatment within their reach makes significant impact. The increase in volumes of adult patients presenting is also similar to other reports where free cleft surgery has been carried out.<sup>1-4</sup> This backlog of cases has been a driving force for several cleft outreaches.

Whilst improving the volume of patients treated and the quality of treatment is a reported goal in free treatment projects, impact on training of surgeons is occasionally unmentioned.<sup>1-4</sup> Prohibitive user fees result in diminishing access to surgical care. This has altered the bed occupancy of teaching hospitals and changed the frequency ratios of diseases needed for balanced instruction and experience of medical students and surgical trainees.<sup>6</sup> Improved financing of surgery is expected to reverse this. This study notes the doubling of procedures carried out by trainees and tripling of trainees serving as primary surgeons. With an increase in the number of residents showing interest in plastic surgery training an increasing number of cases for hands-on training are needed in all accredited centres. Without the increase in volumes afforded by the grant, a smaller fraction of trainees would have ended up having hands-on training at the institution; however each trainee was able to get to do at least one cleft surgery in the period of the increased volume. This increase is an important aspect of surgical training in the West African sub region

where a decreasing ratio of senior resident to new fellows has been noted.<sup>6,7</sup>

A number of resident training centres that are not teaching hospitals may be unwilling to employ adjunct staff (such as speech therapists) who are considered necessary for optimal care of cleft patients, even on a part time basis, for fear the volumes of such patients may be too few to justify the pay of the staff. Increasing the volume definitely increases the encouragement for such institutions to provide such services leading to a multidisciplinary care. This will result in better patient care, more employment, and better training of residents. As outcomes of results were not routinely carried out in the hospital (though various scoring methods are available)<sup>8</sup> it was not feasible to assess the quality of work done by trainees. Studies have indicated that the outcomes of cleft surgery is better with increasing volumes done,<sup>8, 9</sup> but more recent work may suggest experience has no impact on incidence of complications in palatoplasty.<sup>10, 11</sup> However these latter studies are reports from centres and surgeons exceeding 30 new cases a year which was the cut off in previous studies. With 5 consultant surgeons the increase to 168 surgeries in two years means an average of over 16 cleft surgeries per consultant per year. This still firmly places the institution in the category where volume has been shown to affect outcomes. Using two years for comparison is the same as that done in the UK study.<sup>8</sup> This may explain the reluctance in allowing trainees to serve as primary surgeons in palatoplasty, the more functional repair. All consultants have vicarious liability for the surgeries performed by trainees under them in Nigeria.

### **CONCLUSION**

Free cleft surgery does positively impact on patient volume available for surgical training and every training institution for cleft surgeons is encouraged to embrace it.

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