

# Community based dental education and training – case study of a Nigerian dental school

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## ABSTRACT

**Introduction:** Community- based dental training and service is the new direction in dental education. It offers a variety of positive learning experiences for dental students, providing the needed dental services for rural and the underserved areas. A case study of University of Benin dental school was carried out to evaluate the historical development of community-based services, challenges and prospects.

**Materials and methods:** Data was obtained using the historical method through qualitative oral interviews, documents and training brochures and retrospective method from records of outreaches to rural community dental clinic, special needs, school oral health and adult/geriatric centre using oral health outreach summary form. The qualitative research methodology of health service evaluation was used to obtain information on historical background from library documents including school brochures and records and analyzed with Micro Soft Excel and SPSS software.

**Results:** The development of the community dentistry in the University of Benin as a specialty began under framework granting it departmental status. The learning methods until recently were essentially lecture and clinic based with curriculum structure designed to provide newly admitted students with the understanding of their chosen profession, its development, responsibilities and ethical obligations. These improved community- based programs beginning from 2011 include oral health awareness and screening for school children, community dental services for rural dwellers, special needs and orphanage programmes, and adult/geriatric client screening services.

At the Community Dental Clinic in an outpost of the University of Benin Teaching Hospital, 164 patients have been seen, a total of 3479 school children were screened and 872 (25%) referred for dental treatment. Similarly 169 persons with special needs and orphans were screened with 58 (34.3%) referrals to the dental clinics. At the Oral health screening component of the Centre for Disease Control at the University of Benin Teaching (CDC-UBTH) 2609 clients seen with 1855 (71%) referrals to the dental centre.

**Conclusion:** The provision of oral health education, comprehensive and preventive services to school children, the elderly, underserved and disadvantaged persons as a regular and sustainable program is faced with challenges.

**Key words:** Community-Based Training, Dental Services, Dental Education

## INTRODUCTION

Recent trends in dental education with emphasis on community based training of dental students has become topical issue with some suggestion that several dental curricula failed to address important issues such as expanding access to care.<sup>1,2,3</sup> The identified deficiencies in dental training include lack of preventive- oriented services, clinically-focused care and cultural insensitivity.<sup>4</sup> The effectiveness of dental services depends on taking care as near as possible to the individuals and communities in the spirit of primary health care. The ideal dental curriculum should

emphasize community-based health care and dental education to enhance active learning, critical thinking and community involvement in the training of dental students.<sup>5,6</sup> It can also help to increase awareness, boosting of human resources at health facilities, enhance opportunities for professional development for health care workers and aid establishment of linkages between prospective employees and employers.<sup>7</sup>

The development of the community dentistry in Nigeria dates back to the establishment of the first dental school in Lagos.<sup>8</sup> There was an advocacy for a well-defined and comprehensive community-based curriculum, adequate personnel, equipment and materials

There has been no previous effort at an evaluation and documentation of the community-based activities of the institution hence the need to highlight the historical developments, challenges, activities and lessons learned.

## MATERIALS AND METHODS

Data was obtained using the historical method through qualitative oral interviews, documents and training

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brochures and retrospective method from records of outreaches to rural community dental clinic, special needs, school oral health and adult/ geriatric centre using oral health outreach summary form. The qualitative research methodology of health service evaluation<sup>9,10</sup> was used to obtain information on historical background from library documents including school and college brochures and records.<sup>11</sup> An electronic search using Google Scholar, PubMed and Medline was also conducted using the terms 'community-based dental education', 'community dentistry university of Benin' to source for more information about the unit and departmental activities. The planning process begins with writing the proposed school head for permission to conduct oral health education visit. During the pre-visit meeting to the selected school arrangement for the venue, target participants, screening points and contacts are identified. At the community dentistry unit, the team allocates roles and responsibilities and work up the logistics, package materials and items. The activities carried out at every school visit are recorded in an oral health summary form. A Rural Community Dental Clinic has been established at Comprehensive Health Centre, Udo, Ovia South-West Local Government area about 40 kilometers from the dental school to enable the students apply dental students experience rural outreach dentistry at the community level and participate in the provision of comprehensive dental services. An oral health screening program was established at the Centre for Disease Control established by the Community Health Department of University of Benin Teaching Hospital (CDC-UBTH). The centre is basically a screening center for chronic diseases including diabetes, hypertension, hyperlipidaemia and other conditions such as hepatitis and HIV/AIDS. Eye and dental screening were later included to be conducted once a week.

**Data analysis:** Data collected on oral health outreach summary form was entered into the Microsoft Excel Software and analysed to obtain summary information of the various community-based programmes and presented in tables, percentages and proportions.

## RESULTS

**Historical Perspectives:** The School of Dentistry, University of Benin founded in 1976 to train broad based general duty dental officers who can identify the country's present and future dental problems, search for information to manage or resolve them and implement relevant programmes in preventive dental health care. From inception eight departments were approved for the school including the Department of Community Dental Health where the following dental surgeons carried out public health activities – Caries prevalence, utilization of health personnel in dental health activities, fluoride levels of drinking water, dental anomalies

and oral health of pensioners.<sup>12,13,14,15</sup> The learning methods were essentially lecture and clinic based with curriculum structure designed to provide newly admitted students with the understanding of their chosen profession, its development, responsibilities and ethical obligations (Table 1). There were attempts at conducting school oral health programmes but the outcome was not sustained and largely undocumented. Primary oral health care was designed to familiarize the dental students with the community, enable them obtain practical knowledge about the problems of the people and enhance their participation in solving the oral health problems in community through health education promotion.

Specifically from 2011, efforts have been made by the author to re-organize and streamline the outreach activities to enable the undergraduate dental students and residents to engage the community. These programs include oral health awareness and screening for school children, community dental services for rural dwellers, special needs and orphanage programmes, and adult/geriatric client screening services.

At the Rural Community Dental Clinic in an outpost of the University of Benin Teaching Hospital, 164 patients have been seen. (Table 2)

Between 2012 and 2015, a total of 3479 school children were screened at their schools and 872 of them were referred for dental treatment at the local or nearby dental clinics. (Table 3)

Within the same period, but targeting persons with special needs and orphans, 169 children were screened out of which 58 got referrals to the dental clinics. (Table 4)

Oral health screening component of the CDC-UBTH commenced in 2013. It is a weekly screening program mainly for caries, periodontal diseases and oral cancer in adults and the elderly. A total of 2609 clients have been seen with 1855 referrals to the dental centre. (Table 5)

**Table 1: Foundational courses of community dentistry**

Course Description	Level
Introduction to dentistry	100
Introduction to biostatistics	300
Introduction to behavioural sciences	300
Epidemiological methods	400
Preventive Dentistry Rural Clinic	400
Primary Oral Health Care/ Project	500
Preventive Clinic, Ethics/ Jurisprudence	600

**Table 2: Gender pattern of patients at Rural Community oral health programme**

Year	Gender (N/%)		Total (N/%)
	Female	Male	
2011	15(9.1%)	19(11.6%)	34(20.7%)
2012	35(21.3%)	8(4.9%)	43(26.2%)
2013	10(6.1%)	13(7.9%)	23(14.0%)
2014	16(9.8%)	13(7.9%)	29(17.7%)
2015	14(8.5%)	21(12.8%)	35(21.3%)
Total	90(54.9%)	74(45.1%)	164(100.0%)

**Table 3: Screening and referral pattern of children in School oral health programme**

Year	Screened	Referred %	Referred
2012	413	118	28.6
2013	719	219	30.4
2014	1074	170	15.8
2015	1273	365	28.7
Total	3479	872	25.6

**Table 4: Screening and referral pattern in Special needs oral health programme**

Year	Screened	Referred %	Referred
2012	16	7	43.7
2013	35	4	11.4
2014	56	19	33.9
2015	62	28	45.2
Total	169	58	34.3

**Table 5: Pattern of screening and referral at CDC-UBTH Oral health**

Year	Male	Female	Total	Referrals (%)
2013	207	771	978	708(72.4)
2014	207	660	867	625(72.1)
2015	153	611	764	522(68.3)
Total	567	2042	2609	1855(71.1)

CDC-UBTH: Centre for Disease Control- University of Benin Teaching Hospital

## DISCUSSION

Community dental health at the University of Benin was established as an independent specialty but later merged to form a unit in the multispecialty department pending availability of adequate physical structures and personnel to cater for the academic and community-based responsibilities. Lessons have been learned from the unit activities in school oral health, outreaches to special needs children, rural and geriatric communities, building partnerships and collaboration. More patients or participants were referred from CDC- UBTH (71%) than other screening services programmes: schools (25.6%), special needs (34.3%), and rural community clinic (25.5%).

### Oral health program for children in primary and secondary schools

School oral health services comprising of screening, diagnosis, needs assessment, clinical preventive care,

emergency and restorative care using the atraumatic restorative treatment are feasible in our environment. It is one outlet for community based training for improving the percentage of school children who seek dental care and to reduce oral health inequalities.<sup>16,17</sup> The primary objective of the school oral health program is to study and collect basic data in school setting; plan and implement oral health promotion and education program and facilitate referral (Table 3). The program can be strengthened by collaboration with other professions complimentary to dentistry, parents and interested stakeholders as suggested in similar studies.<sup>18,19</sup> Formal documentation and legislation of school oral health policy assessment and periodic screening of children is needed.

### Special needs person's oral health program

Persons with special health care needs (PSHCN) require access to oral health through unconventional means and methods.<sup>20</sup> Many challenged persons are abandoned in secluded homes and institutions with limited or no access to dental care. The absence of community-based insurance or safety net of care for the special needs patients is major problem. Children's dental insurance status is a significant determinant of visiting a dentist.<sup>21</sup> There are also issues of provider and students' care competencies and appropriate logistical and infrastructural support.<sup>22</sup>

### Rural Oral Health Outreach Program

There are opportunities for community mobilization, advocacy, oral health education for pregnant women, home and school visits. Primary health care models for essential oral health care are encouraged by collaborating with the primary health care centres. Logistics support and transportation are major challenges.<sup>23,24</sup> Poor attitude to oral health and need for economic survival are probable for poor clinic attendance.

### Adult and Geriatric oral health care program

It has been a feature of general screening activity as a result of limitations in access to care. Vulnerability to periodontal disease, cervical caries, tooth loss, oral cancer and xerostomia are common and are referred to the dentists for definitive diagnosis and treatment.<sup>25,26</sup>

### Implication of community-based dental education

Community dentistry is an indispensable part of the dental curriculum. In addition to didactic lectures, seminars, discipline- focused postings and case presentations it has been suggested that dental students should see patients at the community-oriented dental education sites.<sup>23</sup> Such training will enhance knowledge about community health issues, ethic of service and social responsibility. The traditional curriculum which confines students mainly to lecture classrooms and hospital clinics is currently viewed as inadequate.<sup>27,28,29</sup>

Schools provide a supportive environment for promoting oral health and may be the only place for children who are at the highest risk of dental disease to have access to oral health services. It also provides an important network and channel to the local community for health promotion messages to be passed on to other members of the family and therefore an indispensable setting for community-based dental education. The school oral health is aimed at engaging health and education officials, teachers, students, parents, and community leaders in efforts to promote health, with families through school and community services, projects and outreach oral health promotion and education.<sup>30,31</sup> The participation of undergraduate students in community-based dental care has been found to be very useful in our setting with poor access to oral care and lack of community-based health insurance scheme.<sup>32</sup> It has been asserted that many of those with developmental disabilities live in community-based group residences or at home with their families. Such persons and their caregivers look up to health care providers in the community for dental services.<sup>33,34,35</sup>

The teaching of preventive and community dentistry should be reinforced and that dental education should be problem-based, socially and culturally relevant and cover geriatric issues or care for older people.<sup>36,37,38</sup>

## CONCLUSION

Community-based dental education is the future of dentistry. The challenges and responsibilities of improving oral care for school children, special needs individuals, rural dwellers and the elderly have been highlighted with some lessons learned. Lack of access to care, non-implementation of community-based insurance and poor institutional logistical support hamper outreach oral care services. Provision of comprehensive and preventive services to school children, the elderly and disadvantaged persons by the dental school is recommended.

## REFERENCES

1. Kassebaum DK, Hendricson WD, Taft T, Haden NK. The dental curriculum at North American dental institutions in 2002-03: a survey of current structure, recent innovations, and planned changes. *J Dent Educ.* 2004;68(9):914-31.
2. Institute of Medicine. *Health Professions Education: A Bridge to Quality.* Washington, D.C: National Academy Press, 2003.
3. Lynch CD, Ash PJ, Chadwick BL. Current trends in community-based clinical teaching programs in U.K. and Ireland dental schools. *J Dent Educ.* 2013 May;77(5):604-11.
4. Feldman CA, Saporito RA, Cinotti W et al. Educating dentists in community-based settings. *Can J Community Dent.* 1997;12(1):15-21.
5. Skelton J, Raynor MR, Kaplan AL, West KP, Smith TA. University of Kentucky community-based field experience: program description. *J Dent Educ.* 2001;65:1238-42.
6. Elkind A. Outreach teaching: is this the future for dental education? *Br Dent J.* 2002; Jul 27;193(2):111-2.
7. Okello ES, Nankumbi J, Ruzaaza GN, Bakengesa E, Gumikiriza J, Arubaku W et al. Gaps and gains from engaging districts stakeholders for community-based health professions education in Uganda: a qualitative study. *Perspect Med Educ.* 2015;4(6):314-22.
8. Jeboda SO. Dental educational trends in African with special reference to Nigeria. *Int Dent J.* 1997;47:21–25.
9. Green J, Thorogood N. *Qualitative Methods for Health Research.* 2004; London: Sage Publications.
10. Mason RO, McKenney JL, Copeland DG. An Historical Method for MIS Research: Steps and Assumptions. *MIS Quarterly* 21.3(1997):307–320.
11. School of Dentistry. In College of Medical Sciences, University of Benin Brochure for 2009-2010. College of Medical Sciences. 2010.
12. Osuhor A. Utilization of health personnel in dental health activities in Nigeria. *Trop Doct.* 1985 Jul;15(3):135-8.
13. Alakija W. Dental caries in primary school children in Benin City, Nigeria. *J Trop Pediatr.* 1983 Dec;29(6):317-9.
14. Umweni AA, Osunbor G. Fluoride levels of major sources of drinking water in Edo State of Nigeria. *Nigeria Quarterly J Hosp Med* 2004;14:17–20.
15. Okeigbemen SA, Jeboda SO, Umweni AA. Prevalence and severity of dental caries among pensioners in Benin City, Nigeria. *Odontostomatol Tropicales* 2009;32(1):11-16.
16. Mamata H, Nagarajappa R. "Does school-based dental screening for children increase follow-up treatment at dental school clinics?" *J Dent Edu* 2005;69(3):382-86.
17. Michael D, Kinirons M. "Effectiveness of the school dental screening programme in stimulating dental attendance for children in need of treatment in Northern Ireland." *Comm Dent Oral Epidem* 2001; 29(2):143-149.
18. Muuta I. Medical education in Nigeria. *Medical teacher.* 2007;29(9):901-905.
19. Hoffman AM, Branson BG, Keselyak NT, Simmer-Beck M. Preventive services program: a model engaging volunteers to expand community-based oral health services for children. *J Dent Hyg.* 2014 Apr;88(2):69-77.
20. Skelton J, Raynor MR, Kaplan AL, West KP, Smith TA. University of Kentucky community-based field experience: program description. *J Dent Educ* 2001;65:1238-42.
21. Sohn W, Ismail A, Amaya A, Lepkowski J. Determinants of dental care visits among low-income African-American children. *J Am Dent Assoc* 2007;38:309–18.
22. Lewis CW. Dental care and children with special health care needs: a population-based perspective. *Acad Pediatr.* 2009 Nov-Dec;9(6):420-6. doi: 10.1016/j.acap.2009.09.005.
23. Van Palenstein Helderman W, Mikx F, Begum A, Adyatmaka A, Bajracharya M, Kikwilu E et al. Integrating oral health into primary health care--experiences in Bangladesh, Indonesia, Nepal and Tanzania. *Int Dent J.* 1999 Aug;49(4):240-8.
24. Anumanrajadhon T, Rajchagool S, Nitisiri P, Phantumvanit P, Songpaisan Y, Barmes DE et al. The community care model of the Intercountry Centre for Oral Health at Chiangmai, Thailand. *Int Dent J.* 1996 Aug;46(4):325-33.
25. Marshall SE, Cheng B, Northridge ME, Kunzel C, Huang C, Lamster IB. Integrating oral and general health screening at senior centers for minority elders. *Am J Public Health.* 2013 Jun;103(6):1022-5. doi: 10.2105/AJPH.2013.301259. Epub 2013 Apr 18.

26. Woods N, Whelton H, Kelleher V. Factors influencing the need for dental care amongst the elderly in the Republic of Ireland. *Community Dent Health*. 2009 Dec;26(4):244-9.
27. Junqi L, Fu Y. Recent changes in the curriculum of Chinese dental schools. *J Dent Educ*. 2007;71(11):1447-56.
28. Loomer PM, Masalu JR, Mughamba E, Perry DA. New curriculum in dentistry for Tanzania: Competency-based education for patient and population health (2008–2011). *J Public Health Policy*. 2012;33:S92-S109.
29. Garcia RI, Sohn W. The paradigm shift to prevention and its relationship to dental education. *J Dent Educ* 2012;76(1):36–45.
30. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century--the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2003;31(1);Suppl:3-23.
31. Kwan SY, Petersen PE, Pine CM, Borutta A. Health-promoting schools: an opportunity for oral health promotion. *Bulletin of the World Health Organization*. 2005;83(9):677-85.
32. Jones RB. The school-based dental care system of New Zealand and South Australia: a decade change. *J Publ Health Dent* 1984;44:120-24.
33. David L, Frosina C, Murray H, Wiebe D, Wiebe P. Identifying Children with Dental Care Needs: Evaluation of a Targeted School-based Dental Screening Program. *J Public Health Dent* 2004;64(2):63-70.
34. Oredugba, FA. Oral Health Care Knowledge and Practices of a Group of Deaf Adolescents in Lagos, Nigeria. *J Publ Hlth Dent*. 2004;64:118–20.
35. Ameer N, Palaparthi R, Neerudu M, Palakuru SK, Singam HR, Durvasula S. Oral hygiene and periodontal status of teenagers with special needs in the district of Nalgonda, India. *J Indian Soc Periodontol*. 2012;Jul;16(3):421-25.
36. Glassman P, Miller CE, Lechowick J. A dental school's role in developing a rural, community-based, dental care delivery system for individuals with developmental disabilities. *Special Care in Dentistry* 1996;16:188–193. doi: 10.1111/j.1754-4505.1996.tb00858.x.
37. Chalmers JM, Geriatric oral health issues in Australia. *Int Dent J*. 2001;51(3):188-99.
38. Erik PP, Yamamoto T. Improving the oral health of older people: the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2005;33(2):81-92.

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