

## Preventive Medicine Practices by Primary Care Providers in Karachi

Muhammad Junaid Patel, Nawal Salahuddin, Waqar Kashif, Mehmood Riaz, Muhammad Tariq, A. Jawwad Samdani, M. Shoaib Khan, Syed Imran Ayaz, Ayesha Sorathia and Muhammad Furqan

---

Preventive medicine is the cornerstone of any healthcare system. It has become an important aspect of medical practice in the West over the last decade and entails intervening before the disease starts, identifying and treating asymptomatic conditions and limiting further complications of the disease. Clinically, this includes vaccination, behavioural counseling, screening and primary prophylaxis.<sup>1</sup>

Disease prevention and health promotion are the most effective interventions for solving Pakistan's healthcare crisis. The burden of preventable diseases in the developing countries is escalating. An estimated 33.4 million deaths were caused by preventable diseases and injuries in 2002. Of these, 72% occurred in the developing countries.<sup>2,3</sup> Besides causing mortality, preventable diseases have great economic implications as they incur huge costs in care and lost productivity.<sup>2</sup>

A Primary Care Physician (PCP) is the one who provides both the first contact for a person with an undiagnosed health concern as well as continuing care of varied medical conditions, not limited by cause, organ system, or diagnosis. PCPs play a vital role in mitigating preventable health problems. Their relationship with patients enables them to assess risk factors, effect behavioural change, recommend screening and prescribe appropriate chemoprophylaxis.<sup>4</sup> Inadequate provision of preventive services has been described world over,<sup>4-6</sup> but there have been no recent studies on this subject in Pakistan. This study was performed to determine the current practice patterns of PCPs regarding preventive medicine in out-patient clinics in Karachi, Pakistan.

It was a cross-sectional study conducted at the Department of Medicine, Aga Khan University Hospital, Karachi, Pakistan. A standardized questionnaire was

given to PCPs attending Continued Medical Education (CME) activities at the University during November-December, 2006.

The three-page self-reported questionnaire was developed by an expert panel of internal medicine physicians and consisted of six sections. The first section was about the demographic details. The second portion sought information about prescribing adult immunizations including pneumonia, tetanus, influenza and hepatitis-B. The third part was regarding cancer screening. It asked questions about routine practices of performing mammograms for breast cancer, checking stool for occult blood for colon cancer, chest radiographs for lung cancer, Pap smears for cervical cancer and oral exam for oral cancer. Questions on behavioural counselling including tobacco, alcohol, and intravenous drug use, as well as advice for healthy diet, regular exercise and obesity were asked in the fourth section. Fifth section was about screening of Diabetes Mellitus (DM), hypercholesterolemia, osteoporosis, depression and dementia, for example screening osteoporosis with DEXA scan etc. The sixth section was designed to evaluate patterns of chemoprevention regarding use of Aspirin in different groups of patients.

Out of 91 PCPs, who were approached, 56 (62%) responded. Their mean age was 40 years with 68% males. The prescription pattern of adult vaccinations showed that a satisfactory number of PCPs advised hepatitis-B vaccine (89%) as compared to pneumococcal (48%), influenza (53%) and tetanus booster vaccines (66%). Seventy-six percent PCPs routinely screened their patients for cancers including lung (55%), oral (53%), breast (50%), colon (50%) and cervical (37%) carcinomas. Screening for DM was higher (92%) than hypercholesterolemia (73%), osteoporosis (46%), depression (62%), and dementia (26%). Major method used for screening osteoporosis was bone mineral density measurement by DEXA scan (74%). In terms of behavioural counselling, almost all PCPs advised balanced diet (96%), regular exercise (98%), obesity reduction (96%) and tobacco cessation (98%). Half (50%) of the PCPs recommended Aspirin prophylaxis to all patients over the age of 40 years but their number increased for patients with different risk factors (Table I).

On sub-group analysis (Table I), older PCPs ( $\geq 40$  years;  $n=28$ ) showed better practices in general, but in particular for influenza vaccinations ( $p=0.03$ ), screening for oral cancers ( $p=0.008$ ), and hypercholesterolemia ( $p=0.03$ ). In gender-based comparison, female physicians were noted to screen more often for breast cancer ( $p=0.004$ ), cervical cancer ( $p=0.01$ ) and osteoporosis ( $p=0.03$ ).

The study assessed the perception and behaviour of PCPs towards health promotion and disease prevention.

---

*Department of Medicine, The Aga Khan University Hospital, Karachi.*

**Correspondence:** Dr. Muhammad Junaid Patel, Rida Homes No. 301, Near Adamjee Science College, Garden East, Karachi.  
E-mail: junaid.patel@aku.edu

Received July 25, 2007; accepted December 12, 2007.

**Table I:** Practice pattern of primary care providers and comparison of preventive services by age group and gender.

Practices	All PCPs (n=56) %	Age-wise Comparison			Gender-wise comparison		
		<40 years (n=28) %	≥ 40 years (n=28) %	p	Male (n=38) %	Female (n=18) %	p
<b>Immunization</b>							
Influenza	54	39	68	0.03	53	56	0.83
Tetanus booster	66	57	75	0.15	61	78	0.20
Pneumococcal	48	50	46	0.79	45	56	0.44
Hepatitis-B	89	93	86	0.38	90	89	0.74
<b>Screening for cancer</b>							
Breast cancer	77	68	86	0.11	74	83	0.42
Colon cancer	50	43	57	0.28	37	78	0.004
Lung cancer	50	39	61	0.10	45	61	0.25
Cervical cancer	55	46	64	0.17	53	61	0.55
Oral cancer	38	29	46	0.16	26	61	0.01
	54	36	71	0.007	55	50	0.71
<b>Screening for chronic diseases</b>							
Diabetes	93	89	96	0.29	92	94	0.75
Hypercholesterolemia	73	61	86	0.03	76	66	0.44
Osteoporosis	46	36	57	0.10	37	66	0.03
Depression	68	64	71	0.56	71	61	0.45
Dementia	27	32	21	0.36	32	17	0.23
<b>Behavioural counselling</b>							
Advice for healthy diet	96	96	96	1.00	95	100	0.32
Advice for regular exercise	98	100	96	0.31	97	100	0.48
Advice for reducing obesity	96	96	96	1.00	95	100	0.32
Tobacco cessation	98	100	96	0.31	97	100	0.48
Alcohol abuse	86	89	82	0.44	87	83	0.72
I/V drug abuse	91	93	89	0.63	87	100	0.10
<b>Aspirin chemoprophylaxis</b>							
All adults >40 years	50	39	61	0.10	55	39	0.25
Patients with CAD	91	89	93	0.63	92	89	0.69
Patients with prior stroke	86	79	93	0.12	84	89	0.64
Patients with DM	77	68	89	0.05	79	78	0.92
Patients with hyperlipidemia	70	54	86	0.009	76	52	0.11
Family history of CAD	68	64	71	0.56	68	67	0.89

Note: PCPs = Primary Care Providers; n = Number of PCPs; CAD = Coronary Artery Disease; DM = Diabetes Mellitus

It was found that PCPs included in the survey were not practicing preventive medicine at an optimal level. Small differences in the self-report of delivery of clinical preventive services do exist between groups based on age and gender. Awareness is required at a national level to ensure integration of preventive services into our daily clinical practices. Regular CME activities to update physicians regarding preventive care, integration of the recertification process for practicing doctors, modification of the curriculum at medical school levels, health awareness programs for general public, implementation of the health care policies and more research oriented environment are some of the means which can help us provide better health care to our people which is their right not a privilege.

## REFERENCES

1. Prince MR. Clinical preventive medicine. Medscape Today [internet] 2006 [cited 2007 Feb 11] Available from: <http://www.medscape.com/viewarticle/530406>
2. Nishtar S. The National Action Plan for the prevention and control of non-communicable diseases and health promotion in Pakistan\_Prelude and finale. *J Pak Med Assoc* 2004; **54** (12 Suppl 3): S1-8.
3. World Health Organization. The world health report 2003-shaping the future. Geneva: WHO, 2003.
4. Yeazel MW, Lindstorm Bremer KM, Center BA. A validated tool for gaining insight into clinicians' preventive medicine behaviours and beliefs: the preventive medicine attitudes and activities questionnaire (PMAAQ). *Am J Prev Med* 2006; **43**:86-91.
5. Smith HE, Herbert CP. Preventive practice among primary care physicians in British Columbia: relation to recommendations of the Canadian Task Force on the periodic health examination. *CMAJ* 1993; **149**:1795-800.
6. Ewing GB, Selassie AW, Lopez CH, Mc Cutcheon EP. Self-report of delivery of clinical preventive services by U.S. physicians: Comparing specialty, gender, age, setting of practice, and area of practice. *Am J Prev Med* 1999; **17**:62-72.

