

各级医疗卫生机构结核病感染控制现状调查

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[摘要] **目的** 了解医疗卫生机构结核感染控制情况。**方法** 按照《医疗卫生机构结核感染预防控制监控和评价表》对北京、上海和内蒙古的 22 所医疗卫生机构进行调查, 收集和分析结核感染控制情况的相关数据。**结果** 被调查的 22 所医疗卫生机构中有 20 所制定了结核感染控制制度, 但只有 7 所机构定期开展结核感染控制监控和评价; 大多数机构能将门诊确诊和住院确诊的传染性疾病的患者与其他患者分开诊治, 但将咳嗽患者与其他患者分开的只有 5 所机构; 18 所机构有常规的紫外线灯维护计划, 但是候诊区、门诊区布局设计不尽合理; 有 14 所机构为工作人员提供医用防护口罩, 而工作人员接受医用防护口罩佩戴适合实验培训的只有 5 所。**结论** 被调查的医疗卫生机构在结核感染控制方面做了一些工作, 取得了一定成绩, 但是需要加强结核感染控制的监控与评价, 落实好分诊、隔离、布局设计及个人防护等措施, 以降低结核感染和患病的风险。

[关键词] 结核; 医疗卫生机构; 感染控制; 医院感染

[中图分类号] R52 R181.3⁺2 **[文献标识码]** A **[文章编号]** 1671-9638(2012)04-0247-05

Status of tuberculosis infection control in different levels of healthcare facilities

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[Abstract] **Objective** To investigate the status of tuberculosis (TB) infection control in healthcare facilities. **Methods** According to *Monitoring and evaluation form of tuberculosis infection control in healthcare facilities*, 22 healthcare facilities in Beijing, Shanghai and Inner Mongolia were surveyed, and data about TB infection control were collected and analyzed. **Results** Of 22 surveyed healthcare facilities, 20 developed TB infection control system, but only 7 regularly carried out monitoring and evaluation of TB infection control; most facilities isolated patients with infectious diseases from patients with other diseases, but only 5 isolated cough patients from other patients; 18 facilities regularly maintained ultraviolet lamps, however, the layout of waiting areas and outpatient department were not very well; 14 facilities provided medical protective masks for health care workers, but only 5 carried out fitness tests of medical protective masks and relevant trainings. **Conclusion** Some achievements about TB infection control in healthcare facilities have been obtained, TB infection control monitor and evaluation screen still need to be

[收稿日期] 2012-01-16

[基金项目] 重大传染病防治项目“结核病感染控制新技术平台的研究”(2009ZX10004-714)

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strengthened, triage, isolation, layout and personal protection in healthcare facilities should be reinforced to reduce the risk of TB.

[Key words] tuberculosis; healthcare facility; infection control; healthcare-associated infection

[Chin Infect Control, 2012, 11(4): 247-251]

目前,结核病(tuberculosis, TB)仍然是严重危害人类健康的主要传染病之一,是全球关注的公共卫生和社会问题。我国是全球 TB 高负担国家,患者数居全球第 2 位,同时也是耐多药 TB 患者数较多的国家之一^[1]。TB 对医务人员的职业危害认识已久^[2-4],由于人口流动频繁、TB/HIV 合并感染、耐药结核的出现等多种原因, TB 在医疗机构内出现暴发现象,已引起发达国家的关注。一些地方开展的结核感染控制相关研究^[4]表明,如果医院的结核感染控制措施不到位,医院将是肺结核等呼吸道传染性疾病暴发和传播的危险场所,医务人员的结核感染率和患病率均较高。本研究采用《医疗卫生机构结核感染预防控制监控和评价表》对 22 所医疗卫生机构进行调查^[5],了解医疗卫生机构结核感染控制情况。

1 对象与方法

1.1 调查对象 本研究选取的调查对象分布于北京、上海和内蒙古自治区 3 个省市、区 22 所结核病防治机构和医院。

1.2 调查方法 本研究为现况调查。采用统一的《医疗卫生机构结核感染预防控制监控和评价表》对上述医疗卫生机构进行调查。调查方式有观察法和测量法,查阅被调查机构相关资料和调查该医疗机构负责感染控制的人员。

1.3 统计分析 将填好的《医疗卫生机构结核感染预防控制监控和评价表》采用 Epidata 3.1 进行双录入,建立数据库,用 SPSS 17.0 和 Excel 软件进行统计分析。

2 结果

2.1 机构基本信息 22 所纳入调查的医疗卫生机构中,北京 7 所,上海 3 所,内蒙古 12 所;省(市)级机构 9 所,区(盟)级机构 7 所,旗(县)级机构 6 所。详见表 1。

2.2 组织管理 22 所医疗卫生机构实施结核感染控制的组织管理情况见表 2。

2.3 管理措施 22 所医疗卫生机构实施结核感染控制管理措施情况见表 3。

表 1 22 所医疗卫生机构的基本情况(所)

Table 1 Basic features of 22 healthcare facilities (No. of facilities)

Province	Facility territorial jurisdiction			Facility type			Facility level		
	Provincial	District	County	TB dispensary	Specialized hospital	General hospital	Third	Second	First
Peking	3	4	0	3	1	3	2	3	2
Shanghai	2	1	0	1	1	1	2	1	0
Inner Mongolia	4	2	6	7	1	4	4	2	6
Total	9	7	6	11	3	8	8	6	8

表 2 22 所医疗卫生机构实施结核感染控制的组织管理情况(所)

Table 2 The implementation status of the managerial activities of TB infection control in 22 healthcare facilities (No. of facilities)

Managerial activities	Implementation	
	Yes	No
Staff and system		
Establish TB infection control committee or designate TB infection control specialists	19	3
Establish TB infection control system	20	2
Establish a system of transferring suspected TB cases and diagnosed TB patients promptly	20	2
Plan and training		
Have written plans or check records of TB infection control	16	6
All staff receive training on TB infection control	16	6
Staff received training on TB infection control in 2009	14	8

续表 2 (Continued table 2)

Managerial activities	Implementation	
	Yes	No
Evaluation		
Conduct evaluation on facility design about TB infection control	11	11
Conduct evaluation on patients checking process	12	10
Evaluate and monitor TB infection control status regularly	7	15
DOT management		
Implementation of DOT management in accordance with national TB control guidelines	14	8
Relevant materials		
Save all registration materials about reported suspected TB cases and diagnosed TB patients	21	1
Supply patients or visitors with TB infection control materials	16	6

表 3 22 所医疗卫生机构实施结核感染控制的管理措施情况(所)

Table 3 The implementation status of administrative control measures in 22 healthcare facilities (No. of facilities)

Administrative control	Implementation	
	Yes	No
Screening and triage		
Screen cough symptom when patients enter the facility	11	10
Arrange cough patients at single waiting room	6	15
If there is no single waiting room, then give the priority	7	14
Have measures to shorten patient waits	7	14
Isolation		
Isolate cough patients from others	5	16
Isolate confirmed infectious diseases patients from others at the outpatient department	18	3
Isolate confirmed infectious diseases patients from others at the inpatient department	15	1
Isolate confirmed MDR-TB patients from others at the outpatient department	13	8
Isolate confirmed MDR-TB patients from others at the inpatient department	9	7
Publication and education		
Offer patients health education about cough etiquette and respiratory health	12	9
Attach promotional materials about cough etiquette at the outpatient department	15	6
Others		
Have specified sputum collection areas	11	10
Keep sputum collection areas away from other work areas	8	13
Health care workers have protective measures when collecting sputum specimen	19	2
Offer patients tissue or surgical masks	10	11
Keep record on all health care workers with TB	13	9

Six facilities had no bed quota and inpatients, and 1 facility had no outpatient department, so the total number of implementation and non-implementation was not 22.

2.4 环境与工程控制 详见表 4。门诊区布局设计不合理的方面除了不能合理分区和通风、紫外线消毒不足之外,还存在各类患者未分开诊疗,医患不

分区,与其他传染病诊室、实验室、痰检室在同一走廊等问题。

表 4 22 所医疗卫生机构结核感染控制的环境和工程情况(所)

Table 4 Implementation status of environmental and engineering control measures in 22 healthcare facilities (No. of facilities)

Enviromental and engineering controls	Implementation	
	Yes	No
Layout design		
Design of the waiting area is rational	10	11
Not crowded at the waiting room or waiting hall	15	6
Design of the outpatient department is rational	10	11
Design of the inpatient department is rational	11	5
Design of the laboratory is rational	16	5
Environmental ventilation		

续表 4 (Continued)

Enviromental and engineering controls	Implementation	
	Yes	No
Good ventilation at waiting areas	11	10
Good ventilation at the outpatient department	10	11
Good ventilation at the inpatient department	12	4
Good ventilation in laboratory	17	4
Equipment facility		
Locate signs properly to keep doors and windows open	4	17
Use ultraviolet lamp (radiate upwards) or ventilating equipment when patients at wards	5	11
Have ultraviolet lamp or ventilation equipment at TB wards	15	7
Inspection and maintenance		
Monitor natural ventilation and mechanical ventilation regularly	9	13
Maintain directional fans and exhaust fans regularly	10	12
Have routine plan of maintaining ultraviolet lamp	18	3
Check biological safety cabinets and change filter element	16	5

Six facilities had no bed quota and inpatients, and 1 facility had no outpatient department, so the total number of implementation and non-implementation was not 22.

2.5 个人防护 在被调查的 22 所医疗卫生机构中,有 14 所机构为工作人员提供了医用防护口罩,但工作人员接受医用防护口罩佩戴适合实验培训的只有 5 所。个人防护相关措施实施情况见表 5。

表 5 22 所医疗卫生机构结核感染控制个人防护相关措施实施情况(所)

Table 5 The implementation status of the personal protective measures in 22 healthcare facilities (No. of facilities)

Personal protective measures	Implementation	
	Yes	No
Supply health care workers with medical protective masks	14	7
Carry out training of fitness tests on medical protective masks	5	16
Offer training opportunity on TB infection control regularly and have relevant tests annually	12	9

Six facilities had no bed quota and inpatients, and 1 facility had no outpatient department, so the total number of implementation and non-implementation was not 22.

2.6 健康教育 在结核感染控制中的健康教育方面,22 所医疗卫生机构中有 20 所对到医疗机构就诊的患者开展了有关结核感染预防控制知识的健康教育。在健康教育资料的开发、在重要场所显要位置放置或播放有关结核感染预防控制的宣传资料及对结核病患者和公众等开展了有关结核感染预防控制的健康教育活动方面,有 19 所机构采取相关措施,但有 8 所机构未对政府领导有关结核感染预防控制的开发。详见表 6。

表 6 22 所医疗卫生机构结核感染控制的健康教育情况(所)

Table 6 The status of health education on TB infection control in 22 healthcare facilities (No. of facilities)

Health education measures	Implementation	
	Yes	No
Launch development of government leadership about relevant TB infection control	14	8
Produce relevant health education materials about TB infection control	19	3
Locate or broadcast publicity materials about TB infection control in important settings	19	3
Supply health education about knowledge of TB infection control to patients	20	2
Launch health education about TB infection control to TB patients and general public	19	3

3 讨论

结核感染预防控制主要由组织管理和 3 种控制

措施组成,包括管理措施、环境和工程控制及个人防护^[5]。在医疗卫生机构开展结核感染控制是降低结核感染和患病的有效措施之一。

组织管理主要包括:建立健全结核感染预防控

制管理组织,制定政策、计划和预算,评估感染风险,加强人力资源建设,合理设计建筑布局,开展健康教育,实施监控和评价,开展科学研究等内容^[5]。本研究通过对 22 所医疗卫生机构进行结核感染预防控制现况调查,收集医疗卫生机构结核感染控制相关数据并进行分析,结果表明,在组织管理工作方面,22 所医疗卫生机构基本都成立了结核感染控制管理组织,制定了相关政策制度、计划,配置了相应的人力资源,但在定期开展结核感染控制监控和评价、对机构的设施设计及患者就诊检查流程的结核感染控制评价、对员工进行结核感染控制培训的工作等方面均较滞后,执行力不够。

管理措施是指在诊断治疗传染性肺结核患者过程中,通过采取一系列控制措施防止产生飞沫核,从而降低感染结核分枝杆菌的风险^[5]。管理措施是感染预防控制的一个重要环节,是环境和工程控制及个人防护措施顺利开展的基础和前提^[5]。调查结果表明,22 所医疗卫生机构基本能做到医务人员在收集痰标本时采取相应的防护措施,能将门诊、住院确诊的传染性患者,尤其是呼吸道传染性患者与其他患者分开,但在咳嗽筛查、咳嗽者单独候诊区候诊、优先候诊、咳嗽礼仪宣传和健康教育、向患者提供纸巾或外科口罩等方面的管理控制工作存在不足。对于咳嗽、咳痰超过 2 周患者应怀疑患有肺结核病,在评价医疗卫生机构结核感染现状时尤其要强调此部分。文献^[6]证实,管理控制措施能有效降低结核感染的风险,应给予高度重视并优先实施。因此,我们应采取包括早发现、早诊断、早治疗、早隔离等在内的一系列管理措施,预防结核感染与传播。

环境工程控制主要指对建筑布局进行合理设计,对受到或可能受到结核分枝杆菌污染的环境进行处理,以降低空气中可吸入感染性微滴核的浓度^[5]。在环境和工程控制措施方面,22 所医疗卫生机构中多数机构的实验室和住院病房布局设计均较合理,但在候诊区和门诊的布局设计不尽合理,存在患者就诊比较拥挤的情况,各区域的自然和机械通风方面做得不充分,尤其是候诊区和门诊区。对于定期维护定向风扇和排气扇的工作有待加强,定期开展对自然通风和机械通风的监测,合理使用紫外线灯对门诊和病房进行消毒。

个人防护是感染控制的第 3 层控制措施,是管

理措施、环境和工程措施的有益补充^[5]。医护人员从事医疗卫生工作应采用正确的防护措施,包括合理使用医用防护口罩、手套、防护服等防护用品,且应根据不同的操作要求选用不同的防护用品^[5]。本次调查的 22 所医疗卫生机构大多数能为工作人员提供医用防护口罩,但缺少医用防护口罩的佩戴适合实验培训和相应的适合性实验,因此对于医用防护口罩的佩戴适合性实验有待加强。

本次调查的 22 所医疗卫生机构在结核感染控制的健康教育方面基本能充分有效地开展,但对政府领导有关结核感染预防控制的开发工作还有待加强。各医疗卫生机构的结核感染预防控制工作需加大对领导的开发力度,尤其是促使各地方政府领导作出加强结核感染控制,遏制结核的承诺。

总之,被调查的 22 所医疗卫生机构基本开展了一些结核感染控制工作,并取得一定成绩,但仍然存在一些问题。在目前人口流动频繁、TB/HIV 双重感染以及耐药结核病等挑战下,医疗卫生机构结核感染控制工作尤为重要。因此,需要加强医疗卫生机构结核感染控制工作,以降低结核分枝杆菌的传播,减少感染和患病的风险,达到控制结核病的目的。

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