E-mail: Masum.aryan@gmail.com : : :

.(Ebrahimi et al., 2008; Takdastan

& Jafarzadeh, 2005)

В

.(Salimiamroud, 2005)

(Alago"z, 2007; Alago"z, 2008)

(Kumar & Marg, (Altin et al., 2003)

(Nemathaga, 2008)

2004)

(Sawalem et al., 2009)

(Asgarian & Vakili, 2001; Sadeghi, 2002; Firouzmanesh *et al.*, 2008; Rayganshirazi & Maryaryad, 2008; Mirhoseini *et al.*, 2008; Amoee *et al.*, 2008; Monavari *et al.*, 2008; Yaghobifar & khamirchi, 2008; Mesgarankarimi *et al.*, 2008)

(PCB_S)

.(Salimiamroud, 2005)

¹ Sharps

² Polychlorinated biphenyls

WHO

11

» :

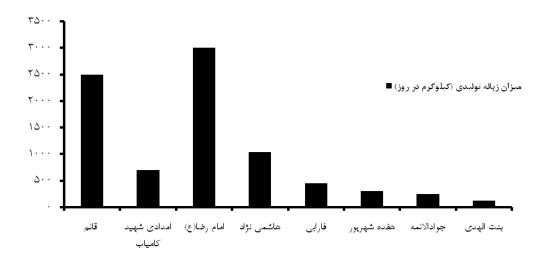
.(Monavari et al., 2008)

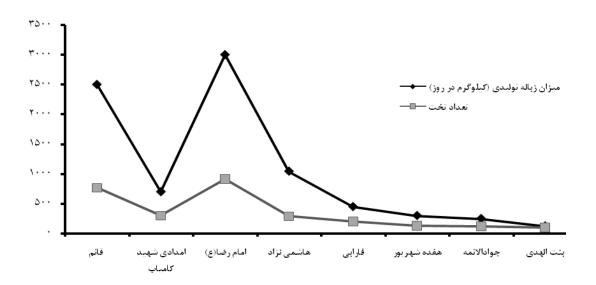
¹ Seperation ² Paching and Labelling ³ Collecting ⁴ Transportation ⁵ Waste Minimization ⁶ Treatment and Disposal

WHO

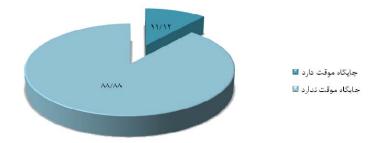
Excel

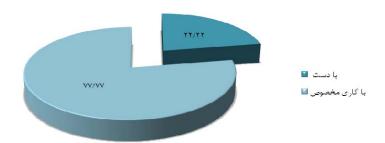
. 1

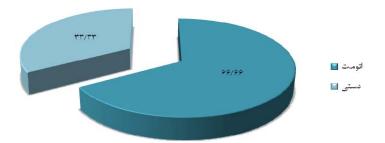




...







% _

```
(Rezaee et al., 2008)
                                                                                                       .(Pordad, 2008)
                                                                                                   .(Sadeghi, 2002)
                                                                                      .(Rezaee et al., 2008)
                                                                                            (WHO)
ا بر اساس آمار حاصل از اجرای طرح آزمایشی ساماندهی پسماندهای پزشکی که ^{\rm 1}
```

در سال ۸۶ در مشهد محاسبه گردیده است.

,

```
.(Rezaee et al., 2008)
                                                                                          .(Rezaee et al., 2008)
                                                                                           (Rezaee et al., 2008)
                  .(Sawalem et al., 2009)
                                                            .(Recycle and Material Conversion
       .(Alago"z & Kocasoy, 2007)
                                                            Organization of Mashhad Municipality, 2006)
                                                                              (Rezaee et al., 2008)
                                                            .(Zolfinejad
           ٔ رفرنسها بصورت اعداد در ستون پژوهشگران آمده است.
                                                                                                   et al., 2008)
در صورتی که اطلاعات برگرفته از پایان نامه باشند به صورت * نشان داده
```

()	/			
1 1					
1				*	
1				*	
1				*	
1					
1					
1					
1					
1					
1					
1					
1					
1					
1					
1					
1					
1					
1 1					
1			 		

()	()	/
./			
1			*
1			
			1
		1	1
1			
1			
1			

...

References

- Alago"z, A.Z. Kocasoy, G. Determination of the best appropriate management methods for the health-care wastes in Istanbul. Waste Management 28, 2008, pp. 1227–1235.
- Alago z, A.Z. Kocasoy, G. Treatment and disposal alternatives for health-care waste in developing countries a case study in Istanbul, Turkey. Waste Management & Research, Vol. 25, No. 1, 2007, pp. 83-89
- Altin, S. Altin, A. Elevli, E. Cerit, O. Determination of Hospital Waste Composition and Disposal Methods: a Case Study. Polish Journal of Environmental Studies Vol. 12, No. 2. 2003, pp. 251-255
- Amooyi, A., Asqarnia, H., Gudarzi, J., Salehi, A., Miri, A. (2008) Study Of Quality And Quantity Of Solid Wastes In Babol Educational Hospitals, The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Asgarian, M., Vakili M., An investigation on the status of educational hospital waste disposal in Fars province in 2001, Journal of Medical Research, 1(4), 2003, 41-51.
- Asian Institute of Technology ELECTRONIC DOCUMENTATION FORM
- Ebrahimi, A., Hashemizade, B., Foladifard, R. (2008) Proposal On Process And Disposal Management Of Hospital Wastes; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Firouzmanesh, M., Qavami, A., Shahmoradi, B., Rahimi, Y. (2008) Study Of Quality And Quantity Of Hospital Waste Management In Sanandaj Medical And Health Centers In 2005, The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008
- Industrial and medical waste control unit, 2006, management and control of medical wastes "from production to final disposal" recycling and material conversion organization of Mashhad municipality.
- Kumar, R. Marg, M.G. A survey of Trace Metals Determination in Hospital Waste Incinerator in Lucknow City, India. Volume 3; Issue 2, 2004.

- Mesgaran Karimi, B., Marezlou, H., Qarib Shamsabadi, S., Hosseini Vardayi, M. (2008) Study Of Infectious Wastes In Hospitals Of Golestan Province, The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Mirhosseini, H., Dahestani Athar, S., Vaseqi, F. (2008) Investigation Of Solid Waste Management In Khoramabad Hospitals In 2008; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Monavari, S., Omrani, GH., Rezaee, F. (2008) Study Of Hospital Waste Management Trend In Private Hospitals Of Tehran; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Nemathaga, F. Maringa, S. Chimuka, L. Hospital solid waste management practices in Limpopo Province, South Africa: A case study of two hospitals. Waste Management 28, 2008, pp. 1236–1245
- Noorisepehr, M., 2008. The Necessity Of Hospital Waste Management And The Role Of Local People Contribution; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Pordad, B., 2008. An Investigation on environmental health status in Mashhad City. M.Sc. thesis. Faculty Of Health And Institute Of Health Research, Tehran Medical University. Iran.
- Raygan Shirazi, A., Mary Ariad, H. (2008) An Investigation On The Status Of Hospital Waste Management In Yasuj City In 2006, The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Rezaee, E., Mansormoghadam, Z., Amanishahri, A. (2008) The Location Of Waste Separation In Hospital Waste Management; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008
- Sadeghi, A., 2002. Assessment of engineering and management of collection and disposal of Mashhad hospital wastes. M.Sc. thesis. Faculty Of Civil Engineering, Tarbiat Modarres University. Iran.
- Salimiamroud, M., 2005. An Investigation on hospital waste management in Rasht City. M.Sc. thesis. Faculty of Health And Institute Of Health Research, Tehran Medical University. Iran.
- Sawalem, M. Selic, E. Herbell, J-D. Hospital waste management in Libya: A case study. Waste Management 29, 2009. pp. 1370–1378
- Takdastan, A., Jafarzade, N., Pazoki, M. (2008) Study Of Quality And Quantity Of Hospital Wastes And Introducing Methods For Safety, Minimization, Treatment And Disposal Management Of Hospital Wastes In Iran, The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008.
- Yaqubifar, M., Khamirchi, R. (2008) Investigation of the status of collection and disposal of hospital wastes in hospitals and medical centers of Sabzevar, Asrar Journal (2) 128-134.
- Zolfinejed, K., Dayan, B., Sarbazi, M., Hosemi, P., Sabermaash, N., Khanjani, F., Abolfathi, M., Ghadiri, Z. (2008) Study Of Methods Of Hospital Wastes Process And Disposal In Gilan Province And Proposing The Proper And Economic Models Using GIS; The 4th National Conference On Waste Management; Mashhad Recycling Organization, Mashhad, 22-23 April 2008

Management of Hospital Wastes in Mashhad

M. Ariyaee*1and A. H. Hamidian²

¹MSc. Faculty of Natural Resources, University of Tehran, Karaj, I.R. Iran ²Assistant Professor, Faculty of Natural Resources, University of Tehran, Karaj, I.R. Iran (Received: 19/02/2011, Accepted: 11/06/2011)

Abstract

The management of hospital wastes is of high importance, because of their infectious and hazardous potential. This is a cross-sectional study based on questionnaire, interview, observation and meetings performed in major Mashhad Hospitals in 2009. Weight and per capita waste production were determined. Moreover, the status of production, separation, storage, collection, treatment, transportation and disposal of these wastes were also determined. Total active beds in eight surveyed hospital (except Naft Hospital with no information available) were 2833 beds, which produced 8369 kg/d of solid wastes, and the per bed production of wastes was 2.95 kg/d. This growth of hospital waste production per capita is in the median of global waste production per capita and if the growth rate is stable, it is predicted that in 2016 Mashhad hospitals will produce around 20 tons of wastes per day.

Based on the quality and quantity of hospital wastes and their environmental effects, separation of infectious and hazardous wastes from ordinary wastes, burning of infectious wastes in a central incinerator outside the city and preferably in municipal wastes landfill, and proper engineered disposal of ordinary wastes and incinerator ash into the landfill were proposed for the better management of these wastes.

Fax: +98 21 44171154

Keywords: Management, Wastes, Hospital, Mashhad