Effects on quality of communicable diseases notification achieved by provision of access to the EU case definitions for primary care physicians in Tuzla, Bosnia and Herzegovina

Denisa Jakubcová, Martin Rusnák, Viera Rusnáková, *Trnava University in Trnava, Faculty of Health Sciences and Social Work, Department of Public Health, Slovakia*
Predrag Đurić, *Department of Epidemiology, Faculty of Medicine, University of Novi Sad, Vojvodina, Serbia*

17th-18th September, Poland

Introduction

- Surveillance system provides data useful for early warning, outbreak detection, following trends of endemic diseases, evaluation of public health programs.
- **Because of key role for public health- system should be regularly evaluated in terms of quality and effectiveness**
- Quality standards for surveillance:
  - *completeness,*
  - *timelines,*
  - *usefulness,*
  - *simplicity,*
  - *flexibility,*
  - *sensitivity and specificity,*
  - *positive predictive value.*

Introduction

- Primary care physicians play the most important role in disease notification.
- Dedication of primary care physicians to disease notification is crucial for the quality of surveillance.
- In Bosnia and Herzegovina, there was The Public Health Reform II project
  - Aim- to strengthen public health services in controlling public health threats
  - Training for primary care physicians to improve communicable disease surveillance system

Methods

- We compared quality of reporting data, done by physicians from Tuzla before training and after training which took place 15th of March 2013, by one of quality standards-timeliness.
- Timeliness reflects time interval between first symptoms of diseases and reporting.
- We compared medians of timeliness before and after training by Wilcox test and averages of timelines by t.test using R project with level of significance $p<0.05$.

Results

- Total number of reported cases: 980

	n	%
Number of cases before the training	784	80%
Number of cases after the training	196	20%

- Total number of physicians who did reporting: 147
  - 140 physicians before the training
  - 69 physicians after the training

	Timeliness (Days)			
Total Sample				
Sample	Total	Before	After	Statistical Significance
Cases	980	784	196	
Median	1	6	1	p<0.05
Average	12	20.2	9.2	p<0.05
Range	0-152	0-152	0-133	
Tuberculosis (A15)				
Cases	159	99	60	
Median	58	60	13	p<0.05
Average	57.1	57.6	27	p<0.05
Range	0-152	0-152	0-133	

Enteritis (A09)				
Cases	132	86	46	
Median	2	3	2	p<0.05
Average	3,7	3,2	2,7	NS
Range	0-41	0-41	0-23	
Scarlet fever (A38)				
Cases	33	17	16	
Median	0	1	0	NS
Average	1,8	1,6	1,5	NS
Range	0-13	0-13	0-13	
Scabies (B86)				
Cases	98	71	27	
Median	0	1	0	NS
Average	1,7	3,9	2,7	NS
Range	0-37	0-37	0-13	

Discussion

- Surveillance system in Bosnia and Herzegovina is not stabilized yet
  - Lack of funds and organization strategies
  - Syndromic surveillance, underreporting
- **Effect of training- reduce of timeliness notification**
- Congruent result with similar studies
  - Lower median of timeliness after intervention [1,2,3].
  - Importance of standard case definition using [4].
  - Higher completeness of reporting [5,6].
- Limitations:
  - Timeliness of a surveillance system depends on a number of factors
  - Proportion of case before and after the training

Conclusion

- **Result of the training in Tuzla:**
  - *Significant reduce in time response between first symptoms and disease diagnosis*
  - *Better quality of reported data*
  - *Premise for effective surveillance*

References

[1] Samoff, E. et al. Improvements in Timeliness Resulting from Implementation of Electronic Laboratory Reporting and an Electronic Disease Surveillance System. In Public Health Reports. 2013; 128:5, 393:398.
[2] Trepka, M., Zhang, G., Leguen, F. An intervention to improve notifiable disease reporting using ambulatory clinics. In Epidemiology and Infection. 2009, 137, 22-29.
[3] Jansonn, A. Timeliness of case reporting in the Swedish statutory surveillance of communicable diseases 1998-2002. In Scandinavian Journal of Infectious Diseases. 2004; 36: 11, 865-872.
[4] Jajosky, R. A., Groseclose, S. Evaluation of reporting timeliness of public health surveillance systems for infectious diseases. In BMC Public Health. 2004; 4:29.
[5] Turnberg, W., Daniell, W., Duchin, J. Notifiable infectious disease reporting awareness among physicians and registered nurses in primary care and emergency department settings. In American Journal of Infection Control. 2010; 38:5, 410-413.
[6] Keramarou, M., Evans, M.R. Completeness of infectious disease notification in the United Kingdom: A systematic review. In Journal of Infection. 2012; 64:6, 555-564.

Thank you for your attention!