

An antimicrobial resistance surveillance in the AFHSC-GEIS network

William G Meyer^{1*}, Julie A Pavlin², Duane Hospenthal³, Clinton K Murray³, Kurt Jerke⁴, Anthony Hawksworth⁵, David Metzgar⁵, Todd Myers⁶, Douglas Walsh⁷, Max Wu⁷, Rosa Ergas⁸, Uzo Chukwuma⁸, Steven Tobias⁹, John Klena¹⁰, Isabelle Nakhla¹⁰, Maha Talaat¹⁰, Ryan Maves¹¹, Michael Ellis¹², Glenn Wortmann¹², David L Blazes¹, Luther Lindler¹

Abstract

International infectious disease surveillance has been conducted by the United States (U.S.) Department of Defense (DoD) for many years and has been consolidated within the Armed Forces Health Surveillance Center, Division of Global Emerging Infections Surveillance and Response System (AFHSC-GEIS) since 1998. This includes activities that monitor the presence of antimicrobial resistance among pathogens. AFHSC-GEIS partners work within DoD military treatment facilities and collaborate with host-nation civilian and military clinics, hospitals and university systems. The goals of these activities are to foster military force health protection and medical diplomacy. Surveillance activities include both community-acquired and health care-associated infections and have promoted the development of surveillance networks, centers of excellence and referral laboratories. Information technology applications have been utilized increasingly to aid in DoD-wide global surveillance for diseases significant to force health protection and global public health. This section documents the accomplishments and activities of the network through AFHSC-GEIS partners in 2009.

Introduction and background

International infectious disease surveillance has been conducted by the United States (U.S.) Department of Defense (DoD) for many years and has been consolidated within the Armed Forces Health Surveillance Center, Division of Global Emerging Infections Surveillance and Response System (AFHSC-GEIS) since 1998. This includes activities that monitor the presence of antimicrobial resistance among pathogens. AFHSC-GEIS partners work within DoD military treatment facilities and collaborate with host-nation civilian and military clinics, hospitals and university systems. The goals of these activities are to foster military force health protection and medical diplomacy. Surveillance activities include both community-acquired and health care-associated infections and have promoted the development of surveillance networks, centers of excellence and referral laboratories. Information technology applications have been utilized increasingly to aid in DoD-wide global surveillance for diseases significant to force health protection and global public health. This section documents the accomplishments and activities of the network through AFHSC-GEIS partners in 2009.

International infectious disease surveillance has been conducted by the United States (U.S.) Department of Defense (DoD) for many years and has been consolidated within the Armed Forces Health Surveillance Center, Division of Global Emerging Infections Surveillance and Response System (AFHSC-GEIS) since 1998. This includes activities that monitor the presence of antimicrobial resistance among pathogens. AFHSC-GEIS partners work within DoD military treatment facilities and collaborate with host-nation civilian and military clinics, hospitals and university systems. The goals of these activities are to foster military force health protection and medical diplomacy. Surveillance activities include both community-acquired and health care-associated infections and have promoted the development of surveillance networks, centers of excellence and referral laboratories. Information technology applications have been utilized increasingly to aid in DoD-wide global surveillance for diseases significant to force health protection and global public health. This section documents the accomplishments and activities of the network through AFHSC-GEIS partners in 2009.

(), ,

1. 2 (-2)

2 D 2006. D
4,751

2. -2
D 12,000

1,142 (11),

300 (2)

D. 107

25 1,20.

21,22.

23.

107

15.

2

(0.5 / ,

2006

200

3, 5, 44, 6 75.

75

5

2006 2007.

(2 (1)), (6), (1).

(1).

(0).

()

7

(67).

(52).

26.

Electronic surveillance of antimicrobial resistance

D D-

().

7 (7)

D D

25.

().

6,300

2,467 D D

2005 200 .

34

(2,13)

45

0

5

25.

6.5

(40).

36

57

33

15

7

25.

D D

175,000

D D

3 1,022 2 25 .

Future direction and initiatives

D D-

- Associa ed Wi h Diarrheal Pa ien s In Indonesia. *Am J Trop Med H g* 2003, 68(6):666-670.
2. Kasper MR, Sokhal B, Blair PJ, Wierzba TF, Putnam SD: Emergence of m l i d r g-resis an Salmonella en erica sero ar T phi i h red ced s scep ibili o fl oroq inolones in Cambodia. *Diagn Microbiol Infect Dis* 2009, Epub.
 3. NAMRU-2 Annual Report: The iden ifica ion of en eropa hogens among pedia ric pa ien s i h ac e diarrhea. *GEIS Ops Proposal C0063_09_N2*.
 4. AFRIMS Annual Report: O brea k and Con ingenc F nd. *GEIS Ops Proposal C0065_09_AF*.
 5. NAMRU-3 Annual Report: Es ablishmen of a Vibrio cholerae and ro a ir s microbiolog and molec lar biolog reference cen er for he Middle Eas and Africa. *GEIS Ops Proposal C0071_09_N3*.
 6. OEF, OIF: [http://siadapp.dmdc.osd.mil/personnel/CASUALTY/oefwia.pdf], http://siadapp.dmdc.osd.mil/personnel/CASUALTY/oif-wounded-total.pdf.
 7. Talaat M, Hafez S, Saied T, Elfeky R, El-Shoubary W, Pimentel G: S r eillance of ca he er-associa ed rinar rac infec ion in 4 in ensi e care ni s a Ale andria ni ersi hospi als in Eg p . *Am J Infect Control* 2010, 38(3):222-228, Epub 2009 Oct 17.
 8. NAMRU-3 Annual Report: Projec Ti le: Molec lar charac eri a ion of E ended Spec r m Be a-lac amase (ESBL) Gram-nega i e rods and Ac r , baç , ba a s from Eg p and Jordan. *GEIS Ops Proposal C0041_09_N3*.
 9. NAMRU-3 Annual Report: Projec Ti le: S r eillance of Heal hcare-acq ired Infec ions (HAI) and An imicrobial Resis ance (AMR) in Eg p and Jordan. *GEIS Ops Proposal C0002_09_N3*.
 10. Murray CK, Yun HC, Griffith ME, Thompson B, Crouch HK, Monson LS, Aldous WK, Mende K, Hospenthal DR: Reco er of m l i-d r g resis an bac eria from comba personnel e ac a ed from Iraq and Afghanis an a a single mili ar rea men facili . *Mil Med* 2009, 174:598-604.
 11. Akers KS, Mende K, Yun HC, Hospenthal DR, Beckius ML, Murray CK: Te rac cline s scep ibili es ing and resis ance genes in isola es of Ac r , baç , ba a s -ca c ac , s , comple from a U.S. mili ar hospi al. *Antimicrob Agents Chemoth* 2009, 53:2693-2695.
 12. Keen EF 3rd, Murray CK, Robinson BJ, Hospenthal DR, Co EM, Aldous WK: Changes in he incidences of m l i d r g-resis an and e ensi el dr g-resis an organisms isola ed in a mili ar medical cen er. *Infect Control Hosp Epidemiol* 2010, 31(7):728-732.
 13. LPMC Annual Report: M l i-d r g Resis an Organism (MDRO) S r eillance in he EUCOM AOR. *GEIS Ops Proposal C0055_09_MC*.
 14. Huang XZ, Frye JG, Chahine MA, Cash DM, Barber MG, Babel BS, Kasper MR, Whitman TJ, Lindler LE, Bowden RA, Nikolich MP: Geno pic and Pheno pic Correla ions of M l i d r g Resis an Acine obac er ba manni- calcoace ic s Comple S rains Isola ed from Pa ien s a he Na ional Na al Medical Cen er. *J Clin Microbiol* 2010, [Epub ahead of print].
 15. Ressler RA, Griffith ME, Beckius ML, Pimentel G, Miller RS, Mende K, Fraser SL, Galloway RL, Hospenthal DR, Murray CK: An imicrobial s scep ibili es of geographicall di erse clinical h man isola es of *L r , r , a*. *Antimicrob Agents Chemother* 2008, 52:2750-2754.
 16. Murray CK, Pimentel G, Parker T, Beckius ML, Samir A, Rhman BA, Mende K, Galloway RL, Hospenthal DR: An imicrobial s scep ibili of clinical h man isola es of *L r , r , a* from Eg p . In *Am J Trop Med H g, Volume 79*. 57th Annual Meeting of the American Society for Tropical Medicine and Hygiene: 7-11 December 2008; New Orleans, LA; 2008:(Suppl):78.
 17. Hinkle MK, Green JA, Martin GJ, Kochel TJ, Hall ER, Villaran M, Garcia J, Scott P, Bautista CT, Sateran WB, Gray M, Murray CK, Hospenthal DR, Maves RC: Seros r e of lep ospirosis in Per ian mili ar personnel deplo ed o Hai i. In *Am J Trop Med H g, Volume 79*. 57th Annual Meeting of the American Society for Tropical Medicine and Hygiene: 7-11 December 2008; New Orleans, LA; 2008:(Suppl):79.
 18. Robertson JL, Becker SJ, Yu X, Hawley JA, Griffith ME, Beckius ML, Hospenthal DR, Mende K, Murray CK: De ec ion of lep ospiral DNA from inoc la ed blood and rine samples sing fi e PCR primers. In *Am J Trop Med H g, Volume 79*. 57th Annu Mtg Am Soc Trop Med Hyg, New Orleans, LA, 7-11 December 2008; 2008:(Suppl):80.
 19. BAMC Annual Report: Con in ed de elopmen of a m l ipl -d r g resis an (MDR) bac eria molec lar epidemiolog referral labora or . *GEIS Ops Proposal C0096_09_MC*.
 20. Murray CK, Holmes RL, Ellis MW, Mende K, Wolf SE, McDougal LK, Guymon CH, Hospenthal DR: T en -fi e ear epidemiolog of in asi e me hicillin-resis an *S a c c a r , a i r* (MRSA) isola es reco ered a a b r n cen er. *Burns* 2009, 35(8):1112-1117, Epub 2009 May 27.
 21. Keen EF 3rd, Robinson BJ, Hospenthal DR, Aldous WK, Wolf SE, Chung KK, Murray CK: Pre alence of m l i d r g-resis an organisms reco ered a a mili ar b r n cen er. *Burns* 2010, 36(6):819-825, Epub 2010 Jan 18.
 22. Glasser JS, Guymon CH, Mende K, Wolf SE, Hospenthal DR, Murray CK: Ac i i of opical an imicrobial agen s agins m l i d r g-resis an bac eria reco ered from b r n pa ien s. *Burns* 2010, [Epub ahead of print] PMID: 20542641.
 23. Akers KS, Mende K, Yun HC, Hospenthal DR, Beckius ML, Murray CK: Te rac cline s scep ibili es ing and resis ance genes in isola es of Ac r , baç , ba a s -ca c ac , s , comple from a U.S. mili ar hospi al. *Antimicrob Agents Chemoth* 2009, 53:2693-2695.
 24. Metzgar D, Baynes D, Hansen CJ, McDonough EA, Cabrera DR, et al: Inference of An ibio ic Resis ance and Vir lence among Di erse Gro p A S rep occc s S rains Using emm Seq encing and M l iloc s Geno ping Me hods. *PLoS ONE* 2009, 4(9):e6897.
 25. NMCPHC Annual Report: Me hods for charac eri a ion of an imicrobial resis ance sing elec ronic da abases. *GEIS Ops Proposal C0095_09_NE*.
 26. NMCPHC Annual Report: Rapid Response S sem for Earl Iden ifica ion of Emerging Pa hogens and An imicrobial Resis an Organisms. *GEIS Ops Proposal C0044_09_NE*.

doi:10.1186/1471-2458-11-S2-S8

Cite this article as: Meyer et al.: An imicrobial resis ance s r eillance in he AFHSC-GEIS ne ork. *BMC Public Health* 2011 11(Suppl 2):S8.

Submit your next manuscript to BioMed Central and take full advantage of: