# Transporting the Infectious Patient

# Date search conducted

03 May 2020

# Source(s)

All though [HDAS](http://hdas.nice.org.uk)

Medline

Cinahl

Embase

Emcare

Pubmed

Google / Microsoft Academic Search for additional sources.

# Search strategy

|  |  |
| --- | --- |
| ((prehospital ADJ3 transport\*) OR (pre-hospital ADJ3 transport\*) OR (hospital ADJ3 Transfer\*) OR (convey\* ADJ3 hospital) OR (patient\* ADJ3 transport\*) OR (patient\* ADJ3 convey\*) OR (patient ADJ3 transfer\*) OR (ambulance ADJ3 transport\*) OR (ambulance ADJ3 transfer\*) OR (ambulance ADJ3 convey\*)).ti |  |
|  | AND |
| (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab |  |

All results limited to years 2004-2020. In addition they were hand sorted to eliminate erroneous material.

# Audience/Context

Ambulance Service Managers and Research Paramedics.

# Additional material

Search Google, Microsoft Academic Search

Guidelines

COVID-19: guidance for Ambulance Trusts <https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts/covid-19-guidance-for-ambulance-trusts>

PANDEMIC (H1N1) 2009 INFLUENZA. Summary infection control guidance for ambulance services during an influenza pandemic

<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/356986/Pandemic_influenza_guidance_for_infection_control_in_ambulance_services.pdf>

Example: Standard Operating Procedure (SOP) for Patient Handoff between a Healthcare Facility and a Transporting Ambulance [CDC} <https://www.cdc.gov/vhf/ebola/clinicians/emergency-services/patient-handoff.html>

Additional References

Coignard-Biehler H, Isakov A, Stephenson J. Pre-hospital transportation in western countries for Ebola patients, comparison of guidelines. Intensive Care Med. 2015; 41(8): 1472–1476.

Isakov A, Miles W, Gibbs S, Lowe J, Jamison A, Swansiger R. Transport and management of patients with confirmed or suspected Ebola virus disease. Ann of Emerg Med. 2015; 66(3):297-305.

Swansiger, R.G., Walters, W.A., Isakov, A.P., Gibbs, S.G., Lowe, J.J. 2014. BioContainment Ground Transport Standard Operating Procedures. Office of Medical Services Operational Medicine. United States Department of State.

Isakov, Alexander, et al. “Safe Management of Patients With Serious Communicable Diseases: Recent Experience With Ebola Virus.” Annals of Internal Medicine, vol. 161, no. 11, 2014, pp. 829–830.

# Results – MEDLINE, CINAHL, EMBASE, EMCARE, PUBMED (HDAS)

**1. Fixed Wing Patient Air Transport during the Covid-19 Pandemic**

**Author(s):** Martin D.T. (ccat.aeromedical@gmail.com)

**Source:** Air Medical Journal; 2020

**Publication Date:** 2020

**Publication Type(s):** Letter

**DOI:** [http://dx.doi.org/10.1016/j.amj.2020.04.001](http://doi.org/10.1016/j.amj.2020.04.001)

**ISSN:** 1067-991X

**Place of Publication:** United States

**Publisher:** Mosby Inc. (E-mail: customerservice@mosby.com)

**Accession Number:** 2005548197

Available at [Air Medical Journal](https://linkinghub.elsevier.com/retrieve/pii/S1067991X20300729?goto=sd) - from Journals Consult

Available at [Air Medical Journal](https://doi.org/10.1016/j.amj.2020.04.001) - from Unpaywall

**Keywords: Subject Terms:** adult; air transportation; human; letter; pandemic; wing; adult; \*air transportation; human; letter; \*pandemic; \*wing

**Database:** EMBASE

**2. Safe patient transport for COVID-19.**

**Author(s):** Liew, Mei Fong; Siow, Wen Ting; Yau, Ying Wei; See, Kay Choong

**Source:** Critical care (London, England); Mar 2020; vol. 24 (no. 1); p. 94

**Publication Date:** Mar 2020

**Publication Type(s):** Letter Comment

**DOI:** [http://dx.doi.org/10.1186/s13054-020-2828-4](http://doi.org/10.1186/s13054-020-2828-4)

**ISSN:** 1466-609X

**Place of Publication:** England

**PubMedID:** 32183864

**Accession Number:** 32183864

Available at [Critical care (London, England)](https://ccforum.biomedcentral.com/articles/10.1186/s13054-020-2828-4) - from BioMed Central

Available at [Critical care (London, England)](https://link.springer.com/10.1186/s13054-020-2828-4) - from SpringerLink - Open Access

Available at [Critical care (London, England)](http://europepmc.org/search?query=(DOI:10.1186/s13054-020-2828-4)) - from Europe PubMed Central - Open Access

Available at [Critical care (London, England)](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32183864) - from EBSCO (MEDLINE Complete)

Available at [Critical care (London, England)](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1364-8535&volume=24&issue=1&spage=94) - from ProQuest (Health Research Premium) - NHS Version

Available at [Critical care (London, England)](https://ccforum.biomedcentral.com/track/pdf/10.1186/s13054-020-2828-4) - from Unpaywall

**Keywords: Subject Terms:** Betacoronavirus; Coronavirus Infections; Critical Care; Humans; Influenza, Human; Pandemics; Pneumonia, Viral; Index Medicus; \*Betacoronavirus; \*Coronavirus Infections; Critical Care; Humans; \*Influenza, Human; \*Pandemics; \*Pneumonia, Viral; Index Medicus

**Database:** Medline

**3. [Emergency plan for inter-hospital transfer of newborns with SARS-CoV-2 infection].**

**Author(s):** Chen, Zheng; DU, Li-Zhong; Fu, Jun-Fen; Shu, Qiang; Chen, Zhi-Min; Shi, Li-Ping; Wang, Wei; Chen, Shuo-Hui; Ma, Xiao-Lu; Ye, Sheng; Sun, Wei; Chen, Ming-Yan; Zhu, Hai-Hong; Huang, Guo-Lan; Luo, Fei-Xiang

**Source:** Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics; Mar 2020; vol. 22 (no. 3); p. 226-230

**Publication Date:** Mar 2020

**Publication Type(s):** Journal Article

**ISSN:** 1008-8830

**Place of Publication:** China

**PubMedID:** 32204758

**Accession Number:** 32204758

**Keywords: Subject Terms:** Betacoronavirus; Coronavirus Infections; Hospitals; Humans; Infant, Newborn; Pneumonia, Viral; Index Medicus; Betacoronavirus; \*Coronavirus Infections; Hospitals; Humans; Infant, Newborn; \*Pneumonia, Viral; Index Medicus

**Abstract:**Since December 2019, the outbreak of coronavirus disease (COVID-19) has become the most serious public health issue. As the special population with immature immune function, newborns with COVID-19 have been reported. Newborns with suspected or confirmed COVID-19 should be transferred to designated hospitals for isolation treatment. An emergency transfer response plan for newborns with COVID-19 has been worked out. This plan puts forward the indications for neonatal COVID-19 transfer, organization management, protection strategies for medical staff, work procedures, and disinfection methods for transfer equipment, in order to provide guidance and suggestions for the inter-hospital transfer of suspected or confirmed neonatal COVID-19.

**Database:** Medline

**4. [Expert consensus on preventing nosocomial transmission during respiratory care for critically ill patients infected by 2019 novel coronavirus pneumonia].**

**Author(s):** Respiratory care committee of Chinese Thoracic Society

**Source:** Zhonghua jie he he hu xi za zhi = Zhonghua jiehe he huxi zazhi = Chinese journal of tuberculosis and respiratory diseases; Feb 2020; vol. 17 (no. 0); p. E020

**Publication Date:** Feb 2020

**Publication Type(s):** English Abstract; Journal Article

**DOI:** [http://dx.doi.org/10.3760/cma.j.issn.1001-0939.2020.0020](http://doi.org/10.3760/cma.j.issn.1001-0939.2020.0020)

**ISSN:** 1001-0939

**Place of Publication:** China

**PubMedID:** 32077661

**Accession Number:** 32077661

**Keywords: Subject Terms:** COVID-19; Nosocomial infection; Protective measures; Respiratory therapy; Severe and critical infections; COVID-19; Nosocomial infection; Protective measures; Respiratory therapy; Severe and critical infections

**Abstract:**Definite evidence has shown that the novel coronavirus (COVID-19) could be transmitted from person to person, so far more than 1,700 bedside clinicians have been infected. A lot of respiratory treatments for critically ill patients are deemed as high-risk factors for nosocomial transmission, such as intubation, manual ventilation by resuscitator, noninvasive ventilation, high-flow nasal cannula, bronchoscopy examination, suction and patient transportation, etc, due to its high possibility to cause or worsen the spread of the virus. As such, we developed this consensus recommendations on all those high-risk treatments, based on the current evidence as well as the resource limitation in some areas, with the aim to reduce the nosocomial transmission and optimize the treatment for the COVID-19 pneumonia patients. Those recommendations include: (1) Standard prevention and protection, and patient isolation; (2) Patient wearing mask during HFNC treatment; (3) Using dual limb ventilator with filters placed at the ventilator outlets, or using heat-moisture exchanger (HME) instead of heated humidification in single limb ventilator with HME placed between exhalation port and mask; avoid using mask with exhalation port on the mask; (4) Placing filter between resuscitator and mask or artificial airway; (5) For spontaneous breathing patients, placing mask for patients during bronchoscopy examination; for patients receiving noninvasive ventilation, using the special mask with bronchoscopy port to perform bronchoscopy; (6) Using sedation and paralytics during intubation, cuff pressure should be maintained between 25-30 cmH(2)O; (7) In-line suction catheter is recommended and it can be used for one week; (8) Dual-limb heated wire circuits are recommended and only changed with visible soiled; (9. For patients who need breathing support during transportation, placing an HME between ventilator and patient; (10) PSV is recommended for implementing spontaneous breathing trial (SBT), avoid using T-piece to do SBT. When tracheotomy patients are weaned from ventilator, HME should be used, avoid using T-piece or tracheostomy mask. (11) Avoid unnecessary bronchial hygiene therapy; (12) For patients who need aerosol therapy, dry powder inhaler metered dose inhaler with spacer is recommended for spontaneous breathing patients; while vibrating mesh nebulizer is recommended for ventilated patients and additional filter is recommended to be placed at the expiratory port of ventilation during nebulization.

**Database:** PubMed

**5. Syndromic surveillance using ambulance transfer data in Tokyo, Japan.**

**Author(s):** Sugishita, Yoshiyuki; Sugawara, Tamie; Ohkusa, Yasushi; Ishikawa, Takatoshi; Yoshida, Michihiko; Endo, Hiroyoshi

**Source:** Journal of infection and chemotherapy : official journal of the Japan Society of Chemotherapy; Jan 2020; vol. 26 (no. 1); p. 8-12

**Publication Date:** Jan 2020

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1016/j.jiac.2019.09.011](http://doi.org/10.1016/j.jiac.2019.09.011)

**ISSN:** 1437-7780

**Place of Publication:** Netherlands

**PubMedID:** 31611069

**Accession Number:** 31611069

**Keywords: Subject Terms:** Index Medicus; Index Medicus

**Abstract:**Bioterrorism attacks become more probable when important high-profile international or political events are held, such as G7 summit meetings or mass gathering events including Olympic and Paralympic games and FIFA World Cup tournaments. Outbreaks of infectious disease and widespread incidents of food poisoning are also public health concerns at such times. In Japan, the Tokyo Metropolitan Government operates Ambulance Transfer Syndromic Surveillance (ATSS), which can help monitor such incidents. The present study presents and assesses the ATSS framework. During the study period of October 2017 through November 2018, we monitored 33 areas for symptoms of 9 categories: vomiting/nausea, dizziness, palpitation, unconsciousness, breathing disorder, fever, spasm/paralysis, collapse/weakness, and bloody emesis/nasal hemorrhage. Among all symptoms, we found 9929 low-level aberrations, 2537 medium-level aberrations, and 577 high-level aberrations, with respective frequencies of 9.2%, 2.3%, and 0.5%. Of those, Tokyo Metropolitan Institute of Public Health reported the information to Tokyo Metropolitan Government 28 times during the period. Of the 28 identified clusters, Tokyo Metropolitan Government judged the necessity for investigating 7. All of those were investigated at hospitals by the jurisdictional public health center. Because ATSS covers almost the entire Tokyo metropolitan area, with about 13.8 million residents, it is definitely the largest syndromic surveillance in the world.

**Database:** Medline

**6. Perceived barriers and enablers for preventing the spread of carbapenem producing gram-negative bacteria during patient transfers: a mixed methods study among healthcare providers.**

**Author(s):** van Dulm, Eline; van der Veldt, Wendy; der Meiden, Katja Jansen-van; van Renselaar, Gerry; Bovée, Lian; Ros, Jeanette; Davidovich, Udi; van Duijnhoven, Yvonne

**Source:** BMC infectious diseases; Dec 2019; vol. 19 (no. 1); p. 1050

**Publication Date:** Dec 2019

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.1186/s12879-019-4684-x](http://doi.org/10.1186/s12879-019-4684-x)

**ISSN:** 1471-2334

**Place of Publication:** England

**PubMedID:** 31829149

**Accession Number:** 31829149

Available at [BMC infectious diseases](https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-019-4684-x) - from BioMed Central

Available at [BMC infectious diseases](https://link.springer.com/10.1186/s12879-019-4684-x) - from SpringerLink - Open Access

Available at [BMC infectious diseases](http://europepmc.org/search?query=(DOI:10.1186/s12879-019-4684-x)) - from Europe PubMed Central - Open Access

Available at [BMC infectious diseases](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=31829149) - from EBSCO (MEDLINE Complete)

Available at [BMC infectious diseases](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1471-2334&volume=19&issue=1&spage=1050) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC infectious diseases](https://bmcinfectdis.biomedcentral.com/track/pdf/10.1186/s12879-019-4684-x) - from Unpaywall

**Keywords: Subject Terms:** Aged; Anti-Bacterial Agents -- adverse effects; Anti-Bacterial Agents -- pharmacology; Carbapenems -- adverse effects; Carbapenems -- pharmacology; Diagnostic Tests, Routine; Disease Transmission, Infectious -- prevention & control; Drug Resistance, Bacterial; Female; Gram-Negative Bacteria -- drug effects; Gram-Negative Bacteria -- physiology; Health Personnel; Humans; Male; Middle Aged; Netherlands; Patient Transfer; Risk; Index Medicus; Aged; Anti-Bacterial Agents -- adverse effects; \*Anti-Bacterial Agents -- pharmacology; Carbapenems -- adverse effects; \*Carbapenems -- pharmacology; Diagnostic Tests, Routine; \*Disease Transmission, Infectious -- prevention & control; \*Drug Resistance, Bacterial; Female; Gram-Negative Bacteria -- drug effects; \*Gram-Negative Bacteria -- physiology; \*Health Personnel; Humans; Male; Middle Aged; Netherlands; \*Patient Transfer; Risk; Index Medicus

**Abstract:**BACKGROUNDAntimicrobial resistance (AMR) increasingly threatens public health. Carbapenem-producing gram-negative bacteria (CPB) pose the biggest threat. The risk for CPB spread is heightened during the transfer of a CPB-positive patient between different healthcare institutions or healthcare providers. We aimed to gain insight into the frequency of CPB-positive patients in the Dutch provinces of Noord-Holland (NH) and Flevoland (FL). Secondly, we aimed to obtain a deeper understanding of the communication between healthcare providers during transfers of CPB-positive patients and explore possible communication-related risk situations for CPB spread.METHODSThis mixed-methods study consisted of a quantitative and qualitative section. For the quantitative section, 14 laboratories that provide diagnostics in NH and FL voluntarily reported carbapenem-producing Enterobacteriaceae (CPE) positive patients between February 2018 and February 2019. Additionally, two laboratories reported carbapenem-resistant Acinetobacter spp. (CRA) and carbapenem-resistant Pseudomonas aeruginosa (CRP) positive patients. For the qualitative section, healthcare providers of reported patients were interviewed about information exchange during patient transfers, precautionary measures and knowledge and beliefs concerning CPB.RESULTSIn total, 50 CPE-positive, 10 CRA-positive and 4 CRP-positive patients were reported during the inclusion period. Eighteen index-specific and 2 general interviews were conducted with 20 different care providers of 9 patients. The interviews revealed that, in most cases, information concerning the patient was transferred timely, but often a standardized method for sharing the information within and between institutions was lacking. Factors that enhanced care providers' motivation to adhere to precautionary measures were taking responsibility for the health of other patients, (pregnant) colleagues and for ones own health. Factors that reduced motivation were not acknowledging the relevance of the precautionary measures, a perceived negative impact of the measures on patients' recovery, differences in precautionary measures between healthcare settings and incomprehension for changes in precautionary measures.CONCLUSIONSCPB-positivity occurred more frequently than expected in the Dutch provinces of NH and FL. Standardizing the transference of information concerning CPB-positive patients, implementing transmural agreements, training personnel on CPB knowledge and procedures, launching a national website on CPB and assigning one or several designated employees for CPB within healthcare institutions could improve communication between healthcare providers and thereby decrease the risk of CPB transmission.

**Database:** Medline

**7. Communication during patient transfers: Describing gaps in the infectious status information pipeline**

**Author(s):** Mayer J.; Horth R.; Todd M.; Nakashima A.K.; Gruninger R.

**Source:** Open Forum Infectious Diseases; Oct 2019; vol. 6

**Publication Date:** Oct 2019

**Publication Type(s):** Conference Abstract

**DOI:** [http://dx.doi.org/10.1093/ofid/ofz360.2158](http://doi.org/10.1093/ofid/ofz360.2158)

**ISSN:** 2328-8957

**Place of Publication:** Netherlands

**Publisher:** Oxford University Press

**Accession Number:** 630691191

Available at [Open Forum Infectious Diseases](http://europepmc.org/search?query=(DOI:10.1093/ofid/ofz360.2158)) - from Europe PubMed Central - Open Access

Available at [Open Forum Infectious Diseases](https://academic.oup.com/ofid/article/6/Supplement_2/S859/5605763) - from Oxford Journals - Open Access

Available at [Open Forum Infectious Diseases](https://academic.oup.com/ofid/article-pdf/6/Supplement_2/S859/30274980/ofz360.2158.pdf) - from Unpaywall

**Keywords: Subject Terms:** adult; conference abstract; documentation; emergency care; female; Gram negative bacterium; health care facility; human; human tissue; infection control; major clinical study; male; nonhuman; nurse; patient transport; pipeline; retrospective study; Utah; carbapenem; adult; conference abstract; documentation; emergency care; female; Gram negative bacterium; health care facility; human; human tissue; infection control; major clinical study; male; nonhuman; nurse; \*patient transport; \*pipeline; retrospective study; Utah; carbapenem

**Abstract:**Background. Fragmented communication of patients' infectious status across healthcare networks impact regional spread of multidrug-resistant organisms (MDRO). This study aimed to quantify gaps in communication of patient MDRO status across Utah healthcare facilities and to identify opportunities to improve. Methods. This is a cross-sectional retrospective mixed-methods study of patient transfers from three purposively selected healthcare facilities: an acute care (ACF), long-term acute care (LTAC), and skilled-nursing facility (SNF). Patients with known MDRO transferred out of these facilities over the previous week were identified in bimonthly samples spanning 2 months. Infection preventionists and admission nurses from facilities receiving these patients were interviewed. Results. Of 293 patients transferred to another facility, 13% (n = 38) had an active infection or colonization with an MDRO. These 38 patients were transferred to 26 healthcare facilities within the state (4 ACF, 3 LTAC, 19 SNF). Gram-negative organisms with resistance to a carbapenem accounted for 15.8% of those transferred with an MDRO. There was no documentation of the state infection control transfer form (ICTF) at the sending facility for 68.5% of MDRO patient transfers. Of 22 admitting nurses interviewed, 19 (86.4%) did not receive an ICTF, 6 (27.3%) received no communication regarding patients' infectious status, and 11 (50%) had to contact the sending facility for additional information. Moreover, 18.2% of patients had not been put on appropriate precautions. Several nurses expressed confusion with MDRO definitions and lack of guidance regarding care of MDRO colonized patients. Among infection preventionists asked about general MDRO transfers (n = 26), 26.9% reported that communication on infectious status of MDRO patients was received in under 40% of incoming transfers. When asked about a planned statewide MDRO registry, 80.8% felt that such a system would be actively searched at their facility, and 96.2% felt that a system that pushes out alerts would be useful. Conclusion. Given the widespread gaps in communication of infectious status of patients with MDROs transferred across the healthcare facilities sampled, efforts to standardize and improve MDRO communication in the region is warranted.

**Database:** EMBASE

**8. Transportation capacity for patients with highly infectious diseases in Europe: a survey in 16 nations.**

**Author(s):** Schilling, S; Maltezou, H C; Fusco, F M; De Iaco, G; Brodt, H-R; Bannister, B; Brouqui, P; Carson, G; Puro, V; Gottschalk, R; Ippolito, G; EuroNHID Study-group

**Source:** Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases; Apr 2019; vol. 21

**Publication Date:** Apr 2019

**Publication Type(s):** Journal Article Review

**DOI:** [http://dx.doi.org/10.1111/1469-0691.12290](http://doi.org/10.1111/1469-0691.12290)

**ISSN:** 1469-0691

**Place of Publication:** England

**PubMedID:** 24750421

**Accession Number:** 24750421

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](http://www.clinicalmicrobiologyandinfection.com/article/S1198743X15005352/pdf) - from Unpaywall

**Keywords: Subject Terms:** Ambulances -- standards; Ambulances -- supply & distribution; Communicable Diseases -- therapy; Cross-Sectional Studies; Disinfection; Europe; Health Care Surveys; Hospitals, Isolation -- legislation & jurisprudence; Hospitals, Isolation -- standards; Hospitals, Isolation -- statistics & numerical data; Humans; Infection Control -- legislation & jurisprudence; Infection Control -- organization & administration; Infection Control -- standards; Patient Isolation -- instrumentation; Patient Isolation -- legislation & jurisprudence; Patient Isolation -- standards; Transportation of Patients -- legislation & jurisprudence; Transportation of Patients -- standards; Transportation of Patients -- statistics & numerical data; Index Medicus; Ambulances -- standards; Ambulances -- supply & distribution; \*Communicable Diseases -- therapy; Cross-Sectional Studies; Disinfection; Europe; Health Care Surveys; Hospitals, Isolation -- legislation & jurisprudence; Hospitals, Isolation -- standards; \*Hospitals, Isolation -- statistics & numerical data; Humans; Infection Control -- legislation & jurisprudence; Infection Control -- organization & administration; \*Infection Control -- standards; Patient Isolation -- instrumentation; Patient Isolation -- legislation & jurisprudence; \*Patient Isolation -- standards; Transportation of Patients -- legislation & jurisprudence; Transportation of Patients -- standards; \*Transportation of Patients -- statistics & numerical data; Index Medicus

**Abstract:**Highly infectious diseases (HIDs) are defined as being transmissible from person to person, causing life-threatening illnesses and presenting a serious public health hazard. In most European Union member states specialized isolation facilities are responsible for the management of such cases. Ground ambulances are often affiliated with those facilities because rapid relocation of patients is most desirable. To date, no pooled data on the accessibility, technical specifications and operational procedures for such transport capacities are available. During 2009, the 'European Network for HIDs' conducted a cross-sectional analysis of hospitals responsible for HID patients in Europe including an assessment of (a) legal aspects; (b) technical and infrastructure aspects; and (c) operational procedures for ground ambulances used for HID transport. Overall, 48 isolation facilities in 16 European countries were evaluated and feedback rates ranged from 78% to 100% (n = 37 to n = 48 centres). Only 46.8% (22/47) of all centres have both national and local guidelines regulating HID patient transport. If recommended, specific equipment is found in 90% of centres (9/10), but standard ambulances in only 6/13 centres (46%). Exclusive entrances (32/45; 71%) and pathways (30/44; 68.2%) for patient admission, as well as protocols for disinfection of ambulances (34/47; 72.3%) and equipment (30/43; 69.8%) exist in most centres. In conclusion, the availability and technical specifications of ambulances broadly differ, reflecting different preparedness levels within the European Union. Hence, regulations for technical specifications and operational procedures should be harmonized to promote patient and healthcare worker safety.

**Database:** Medline

**9. HHS conducts large-scale drill for transporting infectious patients.**

**Author(s):** MORGAN, JAMIE

**Source:** Health Facilities Management; Jun 2018; vol. 31 (no. 5); p. 8-8

**Publication Date:** Jun 2018

**Publication Type(s):** Trade Publication

**ISSN:** 08996210

**Place of Publication:** Chicago, Illinois

**Publisher:** Health Forum

**Accession Number:** Some(130218075)

Available at [Health Facilities Management](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0899-6210&volume=31&issue=5&spage=8) - from ProQuest (Health Research Premium) - NHS Version

**Database:** CINAHL

**10. Communication Failures Let Multidrug-resistant Bug Spread Between Settings: Oregon law now requires that transferring facilities flag patient status.**

**Author(s):**

**Source:** Hospital Infection Control & Prevention; Nov 2017; vol. 44 (no. 11); p. 5-7

**Publication Date:** Nov 2017

**Publication Type(s):** Periodical

**ISSN:** 19459653

**Place of Publication:** Morrisville, North Carolina

**Publisher:** AHC Media LLC

**Accession Number:** Some(125956335)

Available at [Hospital Infection Control & Prevention](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1945-9653&volume=44&issue=11&spage=5) - from ProQuest (Health Research Premium) - NHS Version

**Keywords: Subject Terms:** Acinetobacter Infections; Disease Outbreaks Oregon; Drug Resistance, Multiple; Drug Resistance, Microbial; Communication Standards; Interinstitutional Relations; Transfer, Discharge; Infection Control; Oregon; Clostridium Infections; United States Centers for Medicare and Medicaid Services; Government Regulations; Disease Surveillance; \*Acinetobacter Infections; \*Disease Outbreaks Oregon; \*Drug Resistance, Multiple; \*Drug Resistance, Microbial; \*Communication Standards; \*Interinstitutional Relations; \*Transfer, Discharge; \*Infection Control; Oregon; Clostridium Infections; United States Centers for Medicare and Medicaid Services; Government Regulations; Disease Surveillance

**Abstract:**The article reports that an outbreak of extremely drug resistant Acinetobacter baumannii at several facilities in Oregon led to a state law that requires a transferring healthcare institution to flag a patient status. Topics mentioned include a proposed rule by the U.S. Centers for Medicare & Medicaid Services to address the patient transfer issue, and reluctance of investigators to assign blame, and thoughts from infectious disease physician Genevieve L. Buser, M.D. on the investigation.

**Database:** CINAHL

**11. Editorial Commentary: Network Models, Patient Transfers, and Infection Control.**

**Author(s):** Polgreen, Philip M; Segre, Alberto M

**Source:** Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Oct 2016; vol. 63 (no. 7); p. 894-895

**Publication Date:** Oct 2016

**Publication Type(s):** Editorial Comment

**DOI:** [http://dx.doi.org/10.1093/cid/ciw465](http://doi.org/10.1093/cid/ciw465)

**ISSN:** 1537-6591

**Place of Publication:** United States

**PubMedID:** 27486119

**Accession Number:** 27486119

Available at [Clinical Infectious Diseases](https://academic.oup.com/cid/article-pdf/63/7/894/7081830/ciw465.pdf) - from Unpaywall

**Keywords: Subject Terms:** Humans; Infection Control; Patient Transfer; Index Medicus; Humans; \*Infection Control; \*Patient Transfer; Index Medicus

**Database:** Medline

**12. Considerations for safe EMS transport of patients infected with Ebola virus.**

**Author(s):** Lowe, John J; Jelden, Katelyn C; Schenarts, Paul J; Rupp, Lloyd E; Hawes, Kingdon J; Tysor, Benjamin M; Swansiger, Raymond G; Schwedhelm, Shelly S; Smith, Philip W; Gibbs, Shawn G

**Source:** Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors; 2015; vol. 19 (no. 2); p. 179-183

**Publication Date:** 2015

**Publication Type(s):** Journal Article

**DOI:** [http://dx.doi.org/10.3109/10903127.2014.983661](http://doi.org/10.3109/10903127.2014.983661)

**ISSN:** 1545-0066

**Place of Publication:** England

**PubMedID:** 25380073

**Accession Number:** 25380073

Available at [Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors](https://www.tandfonline.com/doi/pdf/10.3109/10903127.2014.983661) - from Taylor and Francis Online - Current Content

**Keywords: Subject Terms:** Clinical Protocols; Ebolavirus -- pathogenicity; Emergencies; Emergency Medical Services -- standards; Hemorrhagic Fever, Ebola -- prevention & control; Hemorrhagic Fever, Ebola -- transmission; Humans; Infection Control; Infectious Disease Transmission, Patient-to-Professional -- prevention & control; Patient Isolation; Safety Management; Transportation of Patients -- standards; Index Medicus; Clinical Protocols; \*Ebolavirus -- pathogenicity; Emergencies; \*Emergency Medical Services -- standards; \*Hemorrhagic Fever, Ebola -- prevention & control; Hemorrhagic Fever, Ebola -- transmission; Humans; \*Infection Control; \*Infectious Disease Transmission, Patient-to-Professional -- prevention & control; Patient Isolation; Safety Management; \*Transportation of Patients -- standards; Index Medicus

**Abstract:**The Nebraska Biocontainment Unit through the Nebraska Medical Center in Omaha, Nebraska, recently received patients with confirmed Ebola virus from West Africa. The Nebraska Biocontainment Unit and Omaha Fire Department's emergency medical services (EMS) coordinated patient transportation from airport to the high-level isolation unit. Transportation of these highly infectious patients capitalized on over 8 years of meticulous planning and rigorous infection control training to ensure the safety of transport personnel as well as the community during transport. Although these transports occurred with advanced notice and after confirmed Ebola virus disease (EVD) diagnosis, approaches and key lessons acquired through this effort will advance the ability of any EMS provider to safely transport a confirmed or suspected patient with EVD. Three critical areas have been identified from our experience: ambulance preparation, appropriate selection and use of personal protective equipment, and environmental decontamination.

**Database:** Medline

**13. Rahmenhygieneplan fur Rettungs- und Krankentransportdienste des "Lander-Arbeitskreises zur Erstellung von Hygieneplanen nach 36 IfSG"A framework hygiene policy for emergency medical services and patient transport developed by an ad-hoc Working Committee of the States of the Federal Republic of Germany**

**Author(s):** Haak J. (josefine.haak@lagus.mv-regierung.de); Poldrack R.

**Source:** Hygiene + Medizin; 2013; vol. 38 (no. 1); p. 40-43

**Publication Date:** 2013

**Publication Type(s):** Article

**ISSN:** 0172-3790

**Place of Publication:** Germany

**Publisher:** mhp-Verlag GmbH (E-mail: info@mhp-verlag.de)

**Accession Number:** 368863487

**Keywords: Subject Terms:** ambulance; bacterium; contamination; disinfection; emergency health service; Germany; hand washing; health; human; hygiene; infection; laundry; medical device; patient; patient transport; policy; processing; protective equipment; safety; waste; workplace; \*ambulance; bacterium; contamination; disinfection; \*emergency health service; \*Germany; hand washing; \*health; \*human; \*hygiene; infection; laundry; medical device; patient; \*patient transport; \*policy; processing; protective equipment; \*safety; waste; \*workplace

**Abstract:**There are numerous uncertainties concerning hygiene requirements in emergency medical services (EMS) and protective equipment during ambulance transport of infectious patients. An ad-hoc Working Committee of the States of the Federal Republic of Germany published a framework hygiene policy for EMS in March 2011. This master plan should serve as basis for the local hygiene policies adapted to the require-ments of the various institutions. It gives many important instructions, e. g. on hand hygiene, cleaning, disinfection, processing of medical devices, laundry and disposal of wastes. Furthermore it contains useful tables listing specific measures for control of most infectious diseases, for cleaning and disinfection and precautions in the event of contamination with multiresistant bacteria.

**Database:** EMCARE

**14. Hospital networks and the dispersal of hospital-acquired pathogens by patient transfer.**

**Author(s):** Donker, Tjibbe; Wallinga, Jacco; Slack, Richard; Grundmann, Hajo

**Source:** PloS one; 2012; vol. 7 (no. 4); p. e35002

**Publication Date:** 2012

**Publication Type(s):** Research Support, Non-u.s. Gov't Comparative Study Journal Article

**DOI:** [http://dx.doi.org/10.1371/journal.pone.0035002](http://doi.org/10.1371/journal.pone.0035002)

**ISSN:** 1932-6203

**Place of Publication:** United States

**PubMedID:** 22558106

**Accession Number:** 22558106

Available at [PloS one](http://europepmc.org/search?query=(DOI:10.1371/journal.pone.0035002)) - from Europe PubMed Central - Open Access

Available at [PloS one](http://dx.plos.org/10.1371/journal.pone.0035002) - from Public Library of Science (PLoS)

Available at [PloS one](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=22558106) - from EBSCO (MEDLINE Complete)

Available at [PloS one](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1932-6203&volume=7&issue=4&spage=e35002) - from ProQuest (Health Research Premium) - NHS Version

Available at [PloS one](https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0035002&type=printable) - from Unpaywall

**Keywords: Subject Terms:** Bacteremia -- epidemiology; Computer Simulation; Cross Infection -- epidemiology; Cross Infection -- transmission; Disease Transmission, Infectious -- statistics & numerical data; England; Humans; Incidence; Methicillin-Resistant Staphylococcus aureus; Models, Theoretical; National Health Programs; Netherlands; Patient Transfer -- statistics & numerical data; Staphylococcal Infections -- epidemiology; Staphylococcal Infections -- transmission; Index Medicus; Bacteremia -- epidemiology; Computer Simulation; \*Cross Infection -- epidemiology; \*Cross Infection -- transmission; \*Disease Transmission, Infectious -- statistics & numerical data; England; Humans; Incidence; \*Methicillin-Resistant Staphylococcus aureus; Models, Theoretical; National Health Programs; Netherlands; \*Patient Transfer -- statistics & numerical data; \*Staphylococcal Infections -- epidemiology; \*Staphylococcal Infections -- transmission; Index Medicus

**Abstract:**Hospital-acquired infections (HAI) are often seen as preventable incidents that result from unsafe practices or poor hospital hygiene. This however ignores the fact that transmissibility is not only a property of the causative organisms but also of the hosts who can translocate bacteria when moving between hospitals. In an epidemiological sense, hospitals become connected through the patients they share. We here postulate that the degree of hospital connectedness crucially influences the rates of infections caused by hospital-acquired bacteria. To test this hypothesis, we mapped the movement of patients based on the UK-NHS Hospital Episode Statistics and observed that the proportion of patients admitted to a hospital after a recent episode in another hospital correlates with the hospital-specific incidence rate of MRSA bacteraemia as recorded by mandatory reporting. We observed a positive correlation between hospital connectedness and MRSA bacteraemia incidence rate that is significant for all financial years since 2001 except for 2008-09. All years combined, this correlation is positive and significantly different from zero (partial correlation coefficient r = 0.33 (0.28 to 0.38)). When comparing the referral pattern for English hospitals with referral patterns observed in the Netherlands, we predict that English hospitals more likely see a swifter and more sustained spread of HAIs. Our results indicate that hospitals cannot be viewed as individual units but rather should be viewed as connected elements of larger modular networks. Our findings stress the importance of cooperative effects that will have a bearing on the planning of health care systems, patient management and hospital infection control.

**Database:** Medline

**15. Severe respiratory illness caused by a novel coronavirus, in a patient transferred to the United Kingdom from the Middle East, September 2012.**

**Author(s):** Bermingham, A; Chand, M A; Brown, C S; Aarons, E; Tong, C; Langrish, C; Hoschler, K; Brown, K; Galiano, M; Myers, R; Pebody, R G; Green, H K; Boddington, N L; Gopal, R; Price, N; Newsholme, W; Drosten, C; Fouchier, R A; Zambon, M

**Source:** Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin; Oct 2012; vol. 17 (no. 40); p. 20290

**Publication Date:** Oct 2012

**Publication Type(s):** Case Reports Journal Article

**ISSN:** 1560-7917

**Place of Publication:** Sweden

**PubMedID:** 23078800

**Accession Number:** 23078800

Available at [Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=23078800) - from EBSCO (MEDLINE Complete)

Available at [Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin](https://www.ncbi.nlm.nih.gov/pubmed/23078800) - from PubMed

Available at [Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin](http://hdl.handle.net/1765/92297) - from handle.net

**Keywords: Subject Terms:** Animals; Coronavirus -- classification; Coronavirus -- isolation & purification; Coronavirus -- pathogenicity; Coronavirus Infections -- diagnosis; Coronavirus Infections -- microbiology; Coronavirus Infections -- virology; Disease Notification; Disease Reservoirs; Gene Expression Profiling; Humans; Intensive Care Units; London; Male; Middle Aged; Patient Transfer; Real-Time Polymerase Chain Reaction; Respiratory Insufficiency -- complications; Respiratory Insufficiency -- therapy; Saudi Arabia; Sensitivity and Specificity; Severe Acute Respiratory Syndrome -- etiology; Severe Acute Respiratory Syndrome -- microbiology; Severe Acute Respiratory Syndrome -- therapy; Travel; Index Medicus; Animals; Coronavirus -- classification; \*Coronavirus -- isolation & purification; Coronavirus -- pathogenicity; \*Coronavirus Infections -- diagnosis; Coronavirus Infections -- microbiology; Coronavirus Infections -- virology; Disease Notification; Disease Reservoirs; Gene Expression Profiling; Humans; Intensive Care Units; London; Male; Middle Aged; \*Patient Transfer; Real-Time Polymerase Chain Reaction; Respiratory Insufficiency -- complications; Respiratory Insufficiency -- therapy; Saudi Arabia; Sensitivity and Specificity; \*Severe Acute Respiratory Syndrome -- etiology; Severe Acute Respiratory Syndrome -- microbiology; Severe Acute Respiratory Syndrome -- therapy; \*Travel; Index Medicus

**Abstract:**Coronaviruses have the potential to cause severe transmissible human disease, as demonstrated by the severe acute respiratory syndrome (SARS) outbreak of 2003. We describe here the clinical and virological features of a novel coronavirus infection causing severe respiratory illness in a patient transferred to London, United Kingdom, from the Gulf region of the Middle East.

**Database:** Medline

**16. Transporting patients with highly infectious diseases: A survey in 14 EU member states**

**Author(s):** Schilling S.; Maltezou H.; Fusco F.M.; Brodt H.R.; Bannister B.; Brouqui P.; Puro V.; Gottschalk R.; Ippolito G.

**Source:** Clinical Microbiology and Infection; May 2011; vol. 17

**Publication Date:** May 2011

**Publication Type(s):** Conference Abstract

**DOI:** [http://dx.doi.org/10.1111/j.1469-0691.2011.03558.x](http://doi.org/10.1111/j.1469-0691.2011.03558.x)

**ISSN:** 1198-743X

**Publisher:** Blackwell Publishing Ltd

**Accession Number:** 70599997

Available at [Clinical Microbiology and Infection](https://linkinghub.elsevier.com/retrieve/pii/S1198743X14648989) - from IngentaConnect - Open Access

Available at [Clinical Microbiology and Infection](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-0691.2011.03558.x) - from Wiley Online Library Free Content - NHS

Available at [Clinical Microbiology and Infection](http://www.clinicalmicrobiologyandinfection.com/article/S1198743X14648989/pdf) - from Unpaywall

**Keywords: Subject Terms:** human; patient; infection; traffic and transport; hospital; hazard; male; disinfection; European Union; patient transport; monitoring; ambulance; patent; general aspects of disease; emergency; \*human; \*patient; \*infection; traffic and transport; hospital; hazard; male; disinfection; European Union; patient transport; monitoring; ambulance; patent; general aspects of disease; emergency

**Abstract:**Objectives: Highly Infectious Diseases (HIDs) are defined as transmissible from person to person, causing life threatening illness and presenting a serious hazard to the public. A harmonised response to natural or man-made HIDs plays a vital role in the management of such emergencies. In most European Union (EU) member states (MS), specialised hospitals are responsible for the management of such cases. Ground vehicle transportation capacities for HID patients are often colocated with such facilities but lack a common design. To date, no data on technical specifications and operational procedures of ground vehicles for HID transport are available in the EU. Method(s): Until 2010, the European Network for HIDs conducted a cross-sectional analysis of 46 hospitals in 14 MS responsible for the management of HID patients. The availability of ground vehicle capacities and management procedures regarding HID patient transport were assessed. Categories evaluated included (i) legal issues; (ii) technical and infrastructure issues; (iii) management procedures; and (iv) promotion and monitoring of procedures. Result(s): Only half of all centres evaluated have guidelines for the transportation of HID patients (n = 23/46), neither national nor local guidelines are in place in the majority of MS assessed (n = 10/14). In contrary, the majority of centres evaluated do have access to ground vehicles (n = 24/42 centres; 8 MS). In MS with specific regulations adherence broadly differs: If specifically designed vehicles are recommended, 90% of centres (10/11) do adhere to such regulations; adherence to recommendations without technical specifications is found in only 5/14 centres evaluated. Exclusive pathways for the admission of patients and transport within the facility exist in the majority of centres (31/43 and 29/24, respectively). Protocols for the disinfection of ambulances and equipment exist in 33 and 29 centres, respectively; adherence to correct practice while transporting patents is monitored in 29/42 centres. Conclusion(s): Within the EU, quantity and technical specification of ground vehicles broadly differs. Although all centres evaluated are responsible for the management of HIDs only 50% provide specific or reserved ground vehicles. As rapid and short-distance relocation are most desirable for HID patients, regulations for domestic and cross-border transportation to the closest HLIU should be harmonised throughout the EU.

**Database:** EMBASE

**17. Infektionspravention im Krankentransport und Rettungsdienst - Hinweise zur Umsetzung von HygienestandardsInfection prevention in patient transport and rescue services - Instructions on applying hygiene standards**

**Author(s):** Nassauer A. (NassauerA@rki.de); Mielke M.

**Source:** Notfall und Rettungsmedizin; 2010 ; p. 1-14

**Publication Date:** 2010

**Publication Type(s):** Article In Press

**DOI:** [http://dx.doi.org/10.1007/s10049-010-1347-2](http://doi.org/10.1007/s10049-010-1347-2)

**ISSN:** 1434-6222

**Accession Number:** 51065330

**Keywords: Subject Terms:** hygiene; pathogenesis; hospital patient; patient; patient transport; rescue personnel; infection prevention; personnel; risk; emergency health service; diagnosis; emergency patient; physician; protection; Neisseria meningitidis; tuberculosis; ambulance; solid; emergency physician; infection; methicillin resistant Staphylococcus aureus; \*hygiene; \*pathogenesis; \*hospital patient; \*patient; \*patient transport; \*rescue personnel; \*infection prevention; personnel; risk; emergency health service; diagnosis; emergency patient; physician; protection; Neisseria meningitidis; tuberculosis; ambulance; solid; emergency physician; infection; methicillin resistant Staphylococcus aureus

**Abstract:**Dealing with patients with infectious diseases, or suspicion thereof, often arouses (not unjustified) concern in treating personnel, which can lead to excessive and thereby unnecessary measures. The current article discusses the basic considerations behind the initiation of necessary measures in order to minimize risk. All patients transported by ambulance or emergency services are - in the absence of a diagnosis - potentially infectious. This in turn requires close adherence to hygiene standards. In individual cases where further measures are indicated, special instructions which can be specifically ordered by the treating physician as well as by qualified assisting personnel are required. According to the knowledge we have gained at the Robert Koch Institute from our inquiries, intensive further training on the characteristics and facts relating to the transmission of specific pathogens is required for all personnel involved in rescue services. In addition to standard hygiene, respiratory protection is required when a patient releases airborne pathogens. The pathogens specifically discussed in this article - MRSA (among other pathogens with particular resistance and multiresistance, MRE), influenzavirus, meningococcus, M. tuberculosis and noroviruses - represent pathogens with particular characteristics. The measures discussed here form the standard for hygiene plans for diseases caused by pathogens with comparable characteristics. In the case of emergency patient transport or rescue services, personnel rely on the solid and comprehensive information of the dispatching centre or the treating emergency physician. Only in rare cases are measures over and above standard hygiene measures necessary. © 2010 Springer-Verlag.

**Database:** EMBASE

**18. Safety through redundancy: a case study of in-hospital patient transfers.**

**Author(s):** Ong, Mei-Sing; Coiera, Enrico

**Source:** Quality & safety in health care; Oct 2010; vol. 19 (no. 5); p. e32

**Publication Date:** Oct 2010

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**DOI:** [http://dx.doi.org/10.1136/qshc.2009.035972](http://doi.org/10.1136/qshc.2009.035972)

**ISSN:** 1475-3901

**Place of Publication:** England

**PubMedID:** 20671076

**Accession Number:** 20671076

Available at [Quality & safety in health care](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1475-3898&volume=19&issue=5&spage=e32) - from ProQuest (Health Research Premium) - NHS Version

Available at [Quality & safety in health care](https://qualitysafety.bmj.com/content/19/5/e32.full.pdf) - from Unpaywall

**Keywords: Subject Terms:** Causality; Hospitals, Teaching; Humans; Inpatients; Medical Errors -- prevention & control; Organizational Case Studies; Patient Transfer -- standards; Prospective Studies; Radiology Department, Hospital; Reproducibility of Results; Safety Management -- methods; Safety Management -- organization & administration; Health administration; Causality; Hospitals, Teaching; Humans; \*Inpatients; Medical Errors -- prevention & control; Organizational Case Studies; \*Patient Transfer -- standards; Prospective Studies; Radiology Department, Hospital; Reproducibility of Results; \*Safety Management -- methods; Safety Management -- organization & administration; Health administration

**Abstract:**OBJECTIVESTo study the extent and execution of redundant processes during inpatient transfers to Radiology, and their impact on errors during the transfer process; to explore the use of causal and reliability analyses for modelling error detection and redundancy in the transfer process; and to provide guidance on potential system improvements.METHODSA prospective observational study at a metropolitan teaching hospital. 101 patient transfers to Radiology were observed over a 6-month period, and errors in patient transfer process were recorded. Fault Tree Analysis was used to model error paths and identify redundant steps. Reliability Analysis was used to quantify system reliability.RESULTS420 errors were noted, an average of four errors per transfer. No incidents of patient harm were recorded. Inadequate handover was the most common error (43.1%), followed by failure to perform patient identification checks (41.9%), patient inadequately prepared for transfer (7.4%), inadequate infection control precautions (2.9%), inadequate clinical escort (2.1%), inadequate transport vehicle (2.1%) and equipment failure (0.2%). Four redundant steps for communicating patients' infectious status were identified (reliability=0.07, 0.37, 0.26, 0.31). Collectively, these yielded a system reliability of 0.7. The low reliability of each individual step was due to its low rate of execution.CONCLUSIONSAnalysis of the transfer process revealed a number of redundancies that safeguard against transfer errors. However, they were relatively ineffective in preventing errors, due to the poor compliance rate. Thus, the authors advocate increasing compliance to existing redundant processes as an improvement strategy, before investing resources on new processes.

**Database:** Medline

**19. European concepts for the domestic transport of highly infectious patients.**

**Author(s):** Schilling, S; Follin, P; Jarhall, B; Tegnell, A; Lastilla, M; Bannister, B; Maria Fusco, F; Biselli, R; Brodt, H-R; Puro, V

**Source:** Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases; Aug 2009; vol. 15 (no. 8); p. 727-733

**Publication Date:** Aug 2009

**Publication Type(s):** Journal Article Review

**DOI:** [http://dx.doi.org/10.1111/j.1469-0691.2009.02871.x](http://doi.org/10.1111/j.1469-0691.2009.02871.x)

**ISSN:** 1469-0691

**Place of Publication:** England

**PubMedID:** 19523164

**Accession Number:** 19523164

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](http://www.ingentaconnect.com/openurl?genre=article&issn=1198-743X&volume=15&issue=8&spage=727) - from IngentaConnect - Open Access

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1469-0691.2009.02871.x) - from Wiley Online Library Free Content - NHS

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=19523164) - from EBSCO (MEDLINE Complete)

Available at [Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases](http://openurl.ebscohost.com/linksvc/linking.aspx?genre=article&issn=1198-743X&volume=15&issue=8&spage=727) - from EBSCO (Biomedical Reference Collection - Comprehensive)

**Keywords: Subject Terms:** Case Management; Communicable Diseases -- drug therapy; Communicable Diseases -- therapy; Communicable Diseases -- transmission; Disease Transmission, Infectious -- prevention & control; Europe; Home Care Services; Humans; Infection Control -- methods; Patient Isolation -- methods; Transportation of Patients -- methods; Index Medicus; \*Case Management; Communicable Diseases -- drug therapy; Communicable Diseases -- therapy; \*Communicable Diseases -- transmission; \*Disease Transmission, Infectious -- prevention & control; Europe; \*Home Care Services; Humans; \*Infection Control -- methods; \*Patient Isolation -- methods; \*Transportation of Patients -- methods; Index Medicus

**Abstract:**Highly infectious diseases involve clinical syndromes ranging from single to multiorgan infections and pose a constant threat to the public. In the absence of a definite treatment for most causative agents, patients benefit from maximum supportive care as clinical conditions may deteriorate in the short term. Hence, following initial case identification and isolation, rapid transportation to a specialized treatment unit must be considered in order to minimize the risk of secondary infections, but this is limited by available infrastructure, accessible care en route and the patient's clinical condition. Despite the development of consensus curricula for the clinical management of highly infectious patients, medical transportation lacks a common European approach. This article describes, as examples, three current European concepts for the domestic relocation of highly infectious patients by ground vehicles and aircraft with respect to national legislation and geography.

**Database:** Medline

**20. Der Sonderisoliertransport von gemeingefahrlichen Infektionserkrankungen und die Zusammenarbeit mit den Kompetenz- und BehandlungszentrenThe special isolation transport of patients with dangerous infectious diseases and the collaboration with competence and treatment centers**

**Author(s):** Steffler R. (reinhard.steffler@freenet.de)

**Source:** Krankenhaushygiene und Infektionsverhutung; Jun 2009; vol. 31 (no. 3); p. 82-86

**Publication Date:** Jun 2009

**Publication Type(s):** Article

**DOI:** [http://dx.doi.org/10.1016/j.khinf.2009.05.012](http://doi.org/10.1016/j.khinf.2009.05.012)

**ISSN:** 0720-3373

**Place of Publication:** Germany

**Publisher:** Elsevier GmbH

**Accession Number:** 50546790

**Embase Accession Number:** 2009405529

**Keywords: Subject Terms:** article; competence; disinfection; health care personnel; human; infection; patient care; patient transport; protective equipment; article; competence; disinfection; health care personnel; human; \*infection; patient care; \*patient transport; protective equipment

**Abstract:**The transport of highly contagious patients is a special task for transport units which keep a close contact with the corresponding competence and treatment center including a commontraining. The specific challenges regarding pro-tective equipment and disinfection are presented besides the technique of the transport vehicles.

**Database:** EMBASE

**21. [Aero-transport of a MDR-TB affected patient with bio-containment systems].**

**Author(s):** Lastilla M; Bisetti R; Autore A; Aragonese F; Di Stefano M; Sarlo O

**Source:** Le infezioni in medicina; 2007 ; p. 43-46

**Publication Date:** 2007

**Publication Type(s):** English Abstract; Journal Article

**ISSN:** 1124-9390

**Place of Publication:** Italy

**PubMedID:** 17598993

**Accession Number:** 17598993

**Abstract:**The Italian Air Force medical service, in order to attend to its duty, has to deal with the search, rescue and aero-medical evacuation of the wounded and sick. Due to the increase of air transportation, the likelihood of contracting disease, such as haemorrhagic fevers has risen and it is necessary to know how to treat a patient abroad suffering from severe infectious disease without running any risk either for the medical personnel or for the air crew. The military sanitary service of the Air Force has been preparing for this purpose through a meticulous preparation in Italy and in the USA in order to satisfy these need and through the use of stretchers specifically designed to transport highly contagious patients: Aircraft Transit Isolators (ATIs) and Stretcher Transit Isolators (STIs). These particular medical tools are provided by filter HEPA and they are completely insulated in a PVC envelope. The former (ATI) is used to transport the patient by airplane, the latter is used for road travel. Last January 24th the first real mission was performed transporting a severe TBC-MDR (case) from Alghero to Milan. All went well and the patient left the hospital of Sondalo two months later.

**Database:** PubMed

**22. Performance analysis of a medical decision algorithm to mitigate spread of SARS due to interfacility patient transfers.**

**Author(s):** MacDonald, Russell D; Henry, Bonnie; Stuart, Rebecca

**Source:** Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors; 2006; vol. 10 (no. 3); p. 383-389

**Publication Date:** 2006

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**ISSN:** 1090-3127

**Place of Publication:** England

**PubMedID:** 16801285

**Accession Number:** 16801285

Available at [Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors](https://www.tandfonline.com/doi/pdf/10.1080/10903120600725892) - from Taylor and Francis Online - Current Content

Available at [Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=48113&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=1090-3127&volume=10&issue=3&spage=383) - from ProQuest (Health Research Premium) - NHS Version

**Keywords: Subject Terms:** Algorithms; Cross Infection -- prevention & control; Decision Making; Humans; Ontario -- epidemiology; Patient Transfer; Risk Management; Sentinel Surveillance; Severe Acute Respiratory Syndrome -- epidemiology; Index Medicus; \*Algorithms; \*Cross Infection -- prevention & control; \*Decision Making; Humans; Ontario -- epidemiology; \*Patient Transfer; Risk Management; Sentinel Surveillance; Severe Acute Respiratory Syndrome -- epidemiology; Index Medicus

**Abstract:**OBJECTIVETo determine performance of a medical decision algorithm to mitigate spread of severe acute respiratory syndrome (SARS) from interfacility patient transfers during the Toronto SARS outbreak.METHODSRecords from the Provincial Transfer Authorization Centre and Toronto Public Health from April 1 to July 31, 2003, were linked using probabilistic methods. Authorization decision (transfer authorized or denied) and SARS status (probable case, suspect case, or patient under investigation for SARS; or non-SARS case) were obtained for linked records. Primary outcome was the number of patients where correct authorization decisions were made based on SARS status at the time of request. Secondary outcome was the number for whom, in retrospect, authorization decision was correct knowing final SARS status. Algorithm sensitivity, specificity, and predictive values were determined.RESULTSThere were 14,571 requests for transfer and 2,132 patients investigated for SARS during the study period. The algorithm authorized 14,551 and did not authorize 20 requests. Sensitivity and specificity to make appropriate authorization decisions at the time of request were 100% (95% confidence interval [CI], 77.2%-100%) and 99.95% (95% CI, 99.9-100%), respectively. Positive and negative predictive values were 65% (95% CI, 44.1%-85.9%) and 100% (95% CI, 98.4%-100%), respectively. Sensitivity and specificity, in retrospect, within ten days of the transfer request were 100% (95% CI, 80.6%-100%) and 99.97% (95% CI, 99.9%-100%), respectively. Positive and negative predictive values were 80% (95% CI, 62.5%-97.5%) and 100% (95% CI, 98.4%-100%), respectively. Seven of the 20 patients with nonauthorized requests were not known to have SARS at the time of request. Within ten days, three of seven were under investigation for, a suspect case of, or a probable case of SARS.CONCLUSIONSThe medical decision algorithm was highly sensitive and specific in correctly authorizing transfers. Despite its highly sensitive and specific algorithm, it did incorrectly deny authorization to a very small number of patients without SARS.

**Database:** Medline

**23. [Precautions in the care of patients hospitalized with H5N1 avian influenza].**

**Author(s):** Fica C A; Cifuentes D M; Ajenjo H MC; Delpiano M L; Febre V N; Medina L W; Parada E Y

**Source:** Revista chilena de infectologia : organo oficial de la Sociedad Chilena de Infectologia; Dec 2006; vol. 23 (no. 4); p. 290-296

**Publication Date:** Dec 2006

**Publication Type(s):** English Abstract; Journal Article; Practice Guideline

**DOI:** [http://dx.doi.org//S0716-10182006000400001](http://doi.org/S0716-10182006000400001)

**ISSN:** 0716-1018

**Place of Publication:** Chile

**PubMedID:** 17186075

**Accession Number:** 17186075

**Abstract:**Several agencies have proposed infection control guidelines for management of patients admitted with the diagnosis of avian influenza. These guidelines aim to prevent transmission from the patient to hospital personnel and other inpatients. The guidelines presented here by the Advisory Committee of Nosocomial Infections have been elaborated for the local medical community after reviewing currently available recommendations. Key recommendations include admission to an isolation ward, cohorting of confirmed cases, hand hygiene with antiseptic solutions, use of N95 type masks, non-sterile disposable gloves and eye protection equipment during examination or when performing aerosols-generating procedures. Use of patient-exclusive clinical instruments, daily disinfection of the hospital ward, implementation of measures to reduce risk of needle stick injuries and eye splashing, and reinforcement of appropriate sampling and transport of blood and other corporal fluids, are also recommended.

**Database:** PubMed

**24. [Disease outbreak monitoring system based on ambulance transport data].**

**Author(s):** Bork, Kristian Hveysel; Klein, Bjarke Mirner; Pedersen, Ulrik Bo; Trautner, Sven; Heegaard, Erik Deichmann

**Source:** Ugeskrift for laeger; Sep 2005; vol. 167 (no. 36); p. 3401-3402

**Publication Date:** Sep 2005

**Publication Type(s):** Journal Article

**ISSN:** 1603-6824

**Place of Publication:** Denmark

**PubMedID:** 16159492

**Accession Number:** 16159492

**Keywords: Subject Terms:** Ambulances -- statistics & numerical data; Bioterrorism -- prevention & control; Denmark -- epidemiology; Disaster Planning; Disease Outbreaks -- statistics & numerical data; Emergency Medical Service Communication Systems -- statistics & numerical data; Emergency Medical Services -- statistics & numerical data; Humans; Population Surveillance -- methods; Index Medicus; \*Ambulances -- statistics & numerical data; Bioterrorism -- prevention & control; Denmark -- epidemiology; \*Disaster Planning; \*Disease Outbreaks -- statistics & numerical data; \*Emergency Medical Service Communication Systems -- statistics & numerical data; Emergency Medical Services -- statistics & numerical data; Humans; \*Population Surveillance -- methods; Index Medicus

**Abstract:**INTRODUCTIONDisease outbreak monitoring is relevant not only for naturally occurring diseases but also for detecting a biological terror event. Surveillance systems are already operational in Denmark, but none of these has the high update frequencies necessary for early warning, and the majority monitor specific infectious diseases.MATERIALS AND METHODSAn early-warning system for detection of disease outbreaks in Denmark based on ambulance transport frequency was developed and tested employing a biological outbreak scenario.RESULTSThe system, termed "Bioalarm", demonstrated an ability to adapt to minor statistical variations due to, e.g., mild influenza epidemics and at the same time to elicit an early warning in the event of a outbreak consistent with a bioterrorist attack.CONCLUSIONBioalarm not only is relevant for early warning of a disease outbreak as a result of a biological attack but also facilitates early detection of naturally occurring outbreaks.

**Database:** Medline

**25. [The isolation of patients with highly contagious diseases].**

**Author(s):** Buianov VV; Kolesnikov NV; Malyshev NA; Suprun IP

**Source:** Vestnik Rossiiskoi akademii meditsinskikh nauk; 2004 (no. 1); p. 38-40

**Publication Date:** 2004

**Publication Type(s):** English Abstract; Journal Article

**ISSN:** 0869-6047

**Place of Publication:** Russia (Federation)

**PubMedID:** 15022553

**Accession Number:** 15022553

**Abstract:**The paper deals with the issue of how to prevent the spread (in the environment) of pathogens of extra dangerous infections, whose source could be a patients (not isolated in Meltzer box) with a highly contagious disease. Autonomous filtering stretchers of a special design are suggested for the transportation of patients; the design is sufficient to protect the habitat and medical personnel against being contaminated with related microbes and does not affect the physiological-and-hygienic indices of an isolated patient.

**Database:** PubMed

**26. Transporting patient with suspected SARS.**

**Author(s):** Tsai, Shin-Han; Tsang, Chiu-Man; Wu, Hsueh-Ru; Lu, Li-Hua; Pai, Yung-Chia; Olsen, Mark; Chiu, Wen-Ta

**Source:** Emerging infectious diseases; Jul 2004; vol. 10 (no. 7); p. 1325-1326

**Publication Date:** Jul 2004

**Publication Type(s):** Research Support, Non-u.s. Gov't Letter Comment

**ISSN:** 1080-6040

**Place of Publication:** United States

**PubMedID:** 15338533

**Accession Number:** 15338533

Available at [Emerging infectious diseases](http://europepmc.org/search?query=(DOI:10.3201/1007.030608)) - from Europe PubMed Central - Open Access

Available at [Emerging infectious diseases](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=15338533) - from EBSCO (MEDLINE Complete)

Available at [Emerging infectious diseases](http://openurl.ebscohost.com/linksvc/linking.aspx?genre=article&issn=1080-6040&volume=10&issue=7&spage=1325) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [Emerging infectious diseases](https://www.ncbi.nlm.nih.gov/pubmed/15338533) - from PubMed

Available at [Emerging infectious diseases](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3323337/) - from PubMed Central

**Keywords: Subject Terms:** Adult; Containment of Biohazards; Humans; Male; Patient Isolators; Patient Transfer -- methods; SARS Virus; Severe Acute Respiratory Syndrome -- prevention & control; Index Medicus; Adult; \*Containment of Biohazards; Humans; Male; \*Patient Isolators; Patient Transfer -- methods; SARS Virus; \*Severe Acute Respiratory Syndrome -- prevention & control; Index Medicus

**Database:** Medline

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| **#** | **Database** | **Search term** | **Results** |
| 1 | Medline | (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab | 305937 |
| 2 | Medline | ((prehospital ADJ3 transport\*) OR (pre-hospital ADJ3 transport\*) OR (hospital ADJ3 Transfer\*) OR (convey\* ADJ3 hospital) OR (patient\* ADJ3 transport\*) OR (patient\* ADJ3 convey\*) OR (patient ADJ3 transfer\*) OR (ambulance ADJ3 transport\*) OR (ambulance ADJ3 transfer\*) OR (ambulance ADJ3 convey\*)).ti | 3025 |
| 3 | Medline | (1 AND 2) | 24 |
| 4 | Medline | 3 [DT 2004-2020] [Languages English] | 17 |
| 5 | CINAHL | (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab | 25587 |
| 6 | CINAHL | ((prehospital ADJ3 transport\*) OR (pre-hospital ADJ3 transport\*) OR (hospital ADJ3 Transfer\*) OR (convey\* ADJ3 hospital) OR (patient\* ADJ3 transport\*) OR (patient\* ADJ3 convey\*) OR (patient ADJ3 transfer\*) OR (ambulance ADJ3 transport\*) OR (ambulance ADJ3 transfer\*) OR (ambulance ADJ3 convey\*)).ti | 1754 |
| 7 | CINAHL | (5 AND 6) | 9 |
| 8 | EMBASE | (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab | 160416 |
| 9 | EMBASE | ((prehospital ADJ3 transport\*) OR (pre-hospital ADJ3 transport\*) OR (hospital ADJ3 Transfer\*) OR (convey\* ADJ3 hospital) OR (patient\* ADJ3 transport\*) OR (patient\* ADJ3 convey\*) OR (patient ADJ3 transfer\*) OR (ambulance ADJ3 transport\*) OR (ambulance ADJ3 transfer\*) OR (ambulance ADJ3 convey\*)).ti | 3042 |
| 10 | EMBASE | (8 AND 9) | 21 |
| 11 | EMCARE | (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab | 31050 |
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| 13 | EMCARE | (11 AND 12) | 8 |
| 14 | PubMed | (Contag\* ADJ3 patient\*) OR (infectious\* ADJ3 patient\*) OR (Contag\* ADJ3 disease\*) OR (infectious\* ADJ3 disease\*) OR (COVID-19).ti,ab OR \*CORONAVIRUS/ OR (coronavirus).ti,ab OR ("Corona virus").ti,ab OR ("2019-nCoV").ti,ab OR ("SARS-CoV").ti,ab OR ("MERS-CoV").ti,ab OR ("Severe Acute Respiratory Syndrome").ti,ab OR ("Middle East Respiratory Syndrome").ti,ab | 467257 |
| 17 | PubMed | ((prehospital ADJ3 transport\*) OR (pre-hospital ADJ3 transport\*) OR (hospital ADJ3 Transfer\*) OR (convey\* ADJ3 hospital) OR (patient\* ADJ3 transport\*) OR (patient\* ADJ3 convey\*) OR (patient ADJ3 transfer\*) OR (ambulance ADJ3 transport\*) OR (ambulance ADJ3 transfer\*) OR (ambulance ADJ3 convey\*)).ti,ab | 1991 |
| 18 | PubMed | (14 AND 17) | 47 |