

SHIPSAN Routine Inspections between 2018 and 2022 †

Leonidas Kourentis ¹, Eleni P. Christoforidou ¹, Mauro Dionisio ², Miguel Dávila-Cornejo ³, Antonis Kantonis ⁴, Boris Kopilovic ⁵, Erika Grigorevičė ⁶, Iveta Dubrovova ⁷, Martina Pilková ⁷, Mairin Boland ⁸, Martin Dirksen-Fischer ⁹, Natalja Vozelevskaja ¹⁰, Raf Van Den Bogaert ¹¹, Thijs Veenstra ¹², Jaret Ames ¹, Antonello Campagna ², Nikolaos Bitsolas ¹, Christos Hadjichristodoulou ¹, Varvara Mouchtouri ^{1,*} and the EU HEALTHY GATEWAYS Joint Action Partnership ‡

- ¹ Department of Hygiene and Epidemiology, Faculty of Medicine, University of Thessaly, 41222 Larissa, Greece
 - ² Directorate General for Health Prevention, Ministry of Health, 00144 Rome, Italy
 - ³ Deputy Directorate General of Foreign Health, Directorate General for Public Health, Ministry of Health, 28014 Madrid, Spain
 - ⁴ Food Control and Environmental Health Services, Ministry of Health, Nicosia 1449, Cyprus
 - ⁵ Centre for Communicable Diseases, National Institute of Public Health, SI-1000 Ljubljana, Slovenia
 - ⁶ National Public Health Centre under the Ministry of Health, LT-08221 Vilnius, Lithuania
 - ⁷ Department of Chief Public Health Officer, Ministry of Transport and Construction of the Slovak Republic, 810 05 Bratislava, Slovakia
 - ⁸ Public Health Medicine, Health Services Executive, D20 DV79 Dublin, Ireland
 - ⁹ Institute for Occupational and Maritime Medicine, Hamburg Port Health Center, 20537 Hamburg, Germany
 - ¹⁰ Department of CD Surveillance and Control, Health Board, 10617 Tallinn, Estonia
 - ¹¹ Internationale Betrekkings-Public Health Emergency, Saniport Public Health Authority, 2018 Antwerpen, Belgium
 - ¹² National Coordination Centre for Communicable Disease Control (LCI), National Institute of Public Health and the Environment, 3720 BA Bilthoven, The Netherlands
- * Correspondence: mouchtourib@med.uth.gr
- † Presented at the Public Health Congress on Maritime Transport and Ports 2022: Sailing to the Post-COVID-19 Era, Athens, Greece, 21–22 October 2022.
- ‡ The members of the EU HEALTHY GATEWAYS Joint Action Partnership are list in Acknowledgments.



Citation: Kourentis, L.; Christoforidou, E.P.; Dionisio, M.; Dávila-Cornejo, M.; Kantonis, A.; Kopilovic, B.; Grigorevičė, E.; Dubrovova, I.; Pilková, M.; Boland, M.; et al. SHIPSAN Routine Inspections between 2018 and 2022. *Med. Sci. Forum* **2022**, *13*, 18. <https://doi.org/10.3390/msf2022013018>

Academic Editor: Volker Harth

Published: 2 December 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract: The aim of the study is to describe the routine inspections conducted by competent Public Health Authorities (PHAs) on board passenger ships (cruise ships, inland vessels or ferries) sailing in European countries during the EU HEALTHY GATEWAYS joint action and according to the hygiene standards set out in the European Manual for Hygiene Standards and Communicable Disease Surveillance on Passenger Ships (Edition 2nd, April 2016). From 2018 to the end of April 2022, 138 inspection reports were submitted by PHAs in 38 ports in SIS by 76 inspectors, three SHIPSAN experts, 16 inspectors in training and 31 observers, along with 130 Corrective Action Statements by shipping companies or officers of ships.

Keywords: routine inspection; follow-up inspection; cruise ship; inland vessel; ferries; EU HEALTHY GATEWAYS; European Manual

1. Introduction

The aim of the study is to describe the routine inspections that were conducted by competent Public Health Authorities (PHAs) on board passenger ships (cruise ships, inland vessels or ferries) sailing in European countries during the EU HEALTHY GATEWAYS joint action between 2018 and 2022. The ships from any passenger ship company sailing in the EU were eligible for inspection if they fell under the following description: “*Passenger ship/ship: Any seagoing or inland passenger ship (with more than 12 passengers) on an international voyage, sailing within the EU waters, providing accommodation and/or food (other than “prepacked” food items that are prepared on a licensed premises ashore) to passengers, and/or potable water from the ship water distribution system to passengers.*” Inspections were conducted following inspection

protocol and according to the hygiene standards set out in the European Manual for Hygiene Standards and Communicable Disease Surveillance on Passenger Ships (Edition 2nd, April 2016) [1] and particularly concerning medical facilities, communicable disease surveillance, food safety, potable water safety, recreational water safety, pest management, housekeeping and facilities, hazardous chemical agents, waste management and ballast water management.

2. Material and Methods

Inspections were conducted after a 24/48-h notification by the port health officers working at the PHAs that have the responsibility to conduct inspections on ships. Inspection reports were uploaded to the EU Common Ship Sanitation Database (former SHIPSAN ACT Information System (SIS) <https://sis.shipsan.eu/> (accessed on 1 October 2022)). In order for the routine inspections to be conducted in European ports, the work package 7 leader (University of Thessaly) contacted the partners of the associated and collaborating countries in order for them to arrange the inspections via official routes (i.e., ministries), issue circulars in their country, and develop an inspection schedule for each year. Inspection reports were to be finalized and a notification email to be sent to the company/ship (including the grade) within a period of 15 days from the inspection date, and Corrective Action Statements (CAS) were to be completed and submitted by the company/ship within the period of 21 days from the date of notification email according to the inspection protocol. Since June 2019, the inspection results have been graded (A, B, C, D). According to the consortium agreement of the joint action, the competent authorities authorized the leader of work package 7 to publish the list of all ships inspected, highlighting those with “A” inspection grades, in the EU HEALTHY GATEWAYS web portal [2].

3. Results

From 2018 to the end of April 2022, 138 inspection reports were submitted by PHAs in SIS, along with 130 Corrective Action Statements (CAS) by shipping companies or officers of ships. Out of 138 inspections that took place, 134 were routine, and 4 were follow-up inspections. Table 1 presents the numbers of inspection reports, deficiencies, CAS, non-compliances with requirements of the EU legislation, and non-followed recommended standards of the *European Manual and Notations* from 2018 to 2022. Table 2 presents inspection reports and CAS in SIS per country and port. Table 3 presents the 10 most frequent inspection findings. Seventy-seven inspection reports resulted in a grade. Up to now, 76 grades have been published. Out of the 76 published grades, 60 were “A” grades, and 16 were “B”, “C”, or “D” grades. During 2020 and 2021, because cruise ship operations were suspended due to the COVID-19 pandemic, and because priority was given to focused inspections for COVID-19, only 11 inspections were conducted. Since the beginning of 2022, cruise lines have resumed sailing gradually. The average number of passengers and crew of the inspected ships was 1454 and 553, respectively. During 2020, the inspections took place on board cruise ships with no passengers and only crew on board. Inspections were conducted in 38 ports by 76 inspectors, three SHIPSAN experts, 16 inspectors in training and 31 observers. In total, 191 inspectors completed the e-learning from 2018 to 2022. In 2018 and 2019, 26 audits by three experts were conducted in European Member States (EU MS) ports. Fifteen consultations and clarifications in written form were provided to the shipping industry upon request, in 2019.

Table 1. The number of inspection reports, deficiencies, CAS, non-compliances with requirements of the EU legislation, and non-followed recommended standards of the *European Manual* and Notations from 2018 to 2022.

	2018	2019	2020	2021	2022 during EU HEALTHY GATEWAYS ¹	2022 after EU HEALTHY GATEWAYS	Total
Inspection reports	47 (including 6 unofficial inspections)	86	10	1	0	7 (as of 4 August 2022)	151
Deficiencies	440	909	167	2	0	62 (as of 4 August 2022)	1580
Corrective Action Statements	44	64	22	0	0	0 (as of 4 August 2022)	130
Non-compliances with requirements of the EU legislation	130	289	90	-	-	19	528
Non-followed recommended standards of the <i>European Manual</i>	300	569	67	2	-	43	981
Notations	10	51	10	-	-	-	71

¹ EU HEALTHY GATEWAYS lasted from 2018 to 30 April 2022.

Table 2. Inspection reports and Corrective Action Statements in SHIPSAN ACT Information System (SIS) per country and port during EU HEALTHY GATEWAYS (from 2018 to 30 April 2022).

Country	Port	Inspection Reports	CAS
Belgium	Zeebrugge	4	5
Croatia	Opatija	1	1
	Split	1	2
Cyprus	Limassol	10	10
Estonia	Tallinn	1	1
	Vanasadam	3	2
Germany	Hamburg	16	16
Greece	Heraklion (Iraklion)	3	3
	Kavala	5	6
	Piraeus (Pireefs)	17	17
	Thessaloniki	1	1
Ireland	Cork	2	1
	Dublin	4	4
Italy	Bari	2	2
	Catania	1	1
	Giardini Naxos	3	3
	Livorno	3	3
	Messina	1	1
	Napoli	2	2
	Palermo	1	1
	Savona	1	1
	Vado Ligure	1	
Venice	4	4	
Lithuania	Klaipeda	4	4

Table 2. *Cont.*

Country	Port	Inspection Reports	CAS
Netherlands	Amsterdam	2	3
	Rotterdam	2	2
	Velsen (IJmuiden)	1	1
Slovakia	Bratislava	11	3
Slovenia	Koper	6	6
Spain	Algeciras	3	1
	Alicante	3	4
	Bilbao	1	
	Ceuta		1
	Gijon	2	2
	Las Palmas de Gran Canaria	5	5
	Santander	3	2
	Valencia	7	7
	Vigo	1	2
Total		138	130

Table 3. Top 10 inspection findings concerning inspections during EU HEALTHY GATEWAYS (from 2018 to 30 April 2022).

Item Number	Description of Item	Frequency	% of Total *
3.6.1	Cleaning of utensils and equipment	51	3.4
3.5.5.1	Condition of equipment	45	3.0
3.4.13	Labelling of foodstuffs	38	2.5
4.46	Hot water distribution system temperature	32	2.1
3.3.10	Cleaning and disinfection	26	1.7
4.56	Monitoring of temperature	26	1.7
7.2.4	Equipment of hand washing facilities and toilets	26	1.7
3.4.10	Protection against contamination	25	1.6
1.6.2	Medical waste management	23	1.5
3.6.11	Protection	19	1.3

* (%) of total items cited in inspections.

4. Discussion and Conclusions

In order to improve the quality of routine inspections and bring a consistent and proportionate approach to the inspection of all ship types, it is essential to provide on-the-job training, issue yearly inspection schedules, and operate information tools for the recording/sharing of inspection results. Inspections represent an important opportunity to increase the competency and knowledge of all involved stakeholders. The General Assembly members of the joint action agreed and assigned tasks required for the continuation of passenger ship inspection activities and capacity-building after the joint action concluded (from 1 May 2022) to the EU SHIPSAN Association (European Scientific Association for Health and Hygiene in Maritime Transport). Therefore, an inspection schedule has been developed, including 62 inspections on board cruise ships and inland vessels in twenty-five European ports in eleven European countries.

Author Contributions: Conceptualization, C.H. and V.M.; methodology, V.M.; software, L.K. and N.B.; formal analysis, E.P.C., L.K. and N.B.; data curation, N.B.; writing—original draft preparation, E.P.C. and L.K.; writing—review and editing, L.K., E.P.C., M.D., M.D.-C., A.K., B.K., E.G., I.D., M.P., M.B., M.D.-F., N.V., R.V.D.B., T.V., J.A., A.C., N.B., C.H. and V.M.; supervision, the EU HEALTHY GATEWAYS Joint Action Partnership; project administration, E.P.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was co-funded by the European Commission’s Consumers, Health, Agriculture and Food Executive Agency (CHAFEA) EU’s Third Health Programme (2014–2020) in the framework of the 2017 Work Programme, grant number 801493.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data available on request due to privacy restrictions. The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Acknowledgments: Group Authors: the EU HEALTHY GATEWAYS partnership: Aikaterini Bolosi, Alberto Fernandez Fuenteseca, Alessandra Salvadori, Ana Crespo Alonso, Ángela Alcade Cebas, Antonello Campagna, Antonio Bermejo Gonzalez, Antonis Kantonis, Audrone Lavruvianec, Aukse Adomaityte, Ausra Subotkeviciene, Bernadette Murray, Björn Helewaut, Boris Kopilovic, Cal McCarthy, Carlo Kaminsky, Carmela Buonocore, Charalampos Vasileiou, Christina Fokialaki, Christina Kapoula, Christos Papadopoulos, Cristina Alvarez Cuadrado, Danira Sirinic, Diederik Van Reusel, Dorothea Panagiotou, Elena Rodriguez Lorente, Elisabeth Hewelt, Elsa Maria Gambuzza, Emily Gunn, Emma Breen, Erika Grigoreviče, Evangelos Sotiropoulos, Felix Martinez Alcover, Finan Gallagher, Francisco Javier Aguilar Martínez, Gavin McDonnell, Georgios Tsirtsikos, Germa Peterse, Gitta Wiedner, Hella Kok, Hasse Helewaut, Inge Steenhout, Irene Gutierrez Martin, Iveta Dubrovova, Ivica Delonga, Janneke Broekhuijsen, Jelena Rjabinina, Jose Francisco Gallegos Braun, Juan Ramon Martinez Alvarez, Juan-Francisco Santana-Armas, Koraljika Knezic, Maria Teresa Carbajal González, Marina Viktorova, Marko Colaric, Martin Dirksen-Fischer, Martina Negretto, Martine Doherty, Mathias Kalkowski, Matteo Sponga, Monica Jones, Myrto Mpaltatzi, Natalja Vözelevskaja, Padraic O’ Dowd, Paolo Rosati, Phil Curran, Raf Van den Bogaert, Sandra Diaz Rodriguez, Sarah Ennis, Saskia Tejlund, Scarlett Kleine-Kampmann, Silvia Corrales Izquierdo, Siobhan Grace, Stavros Giannou, Svetlana Vanina, Tanja Hartog, Thomas Bischof, Vito Gigante. Elina Kostara.

Conflicts of Interest: The authors declare no conflict of interest. The content represents the views of the author only and is their sole responsibility; it cannot be considered to reflect the views of the European Commission or the Consumers, Health, Agriculture and Food Executive Agency (CHAFEA) or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for the use that may be made of the information it contains.

References

1. EU SHIPSAN ACT Joint Action European Manual for Hygiene Standards and Communicable Disease Surveillance on Passenger Ships, Second Edition. Larissa, Greece, April 2016. Available online: <http://www.shipsan.eu/Home/EuropeanManual.aspx> (accessed on 1 October 2022).
2. EU HEALTHY GATEWAYS web portal, Inspection Grading System. Available online: <https://www.healthygateways.eu/Inspection-Grading-System> (accessed on 1 October 2022).