

## 112 SERVICE SURVEY

### FINAL OVERALL REPORT

#### GENERAL CONTENTS

1. INTRODUCTION	03
2. GOALS	06
3. PARTNERS	08
4. METHODOLOGY	11
5. IMPLEMENTATION	15
6. SAMPLE CHARACTERISTICS	18
7. ANALYSIS OF RESULTS	22
7.1. Analysis of time to reach 112	22
7.1.1. Call answered on first attempt	22
7.1.2. Number of call attempts to reach 112	25
7.1.3. Wait time for a 112 call to be answered	27
7.2. Type of answering service	30
7.2.1. Immediate operator identification	30
7.2.2. Operator identification mode	32
7.3. Type of information requested by the call centre	33
7.3.1. Event type identification	33
7.3.1.1. General event type identification	33
7.3.1.2. Detailed event type identification	35
7.3.1.3. Information about victims	37
7.3.2. Event location	39
7.3.3. Caller data identification	40
7.3.3.1. Requested caller information	43
7.4. Evaluating the call centre service	44
7.4.1. General call evaluation	45
7.4.2. Call evaluation per language	48
a) Friendliness	48
b) Rudeness	48
c) Call transfer	48
d) Hung up	49
7.4.3. Call evaluation according to the time frame	50

a) Friendliness	50
b) Call transfer	50
7.4.4. Call evaluation per scenario	52
a) Transmitted calm	52
b) Friendliness	52
c) Indicated procedures	52
d) Indicated another number	52
7.5. Emergency services arrival time	54
7.5.1. Emergency services arrival time vs. Scenario	55
7.5.2. Emergency services arrival time vs. Language	56
7.5.3. Emergency services arrival time vs. Time Frame	57
7.6. Evaluation of emergency services arrival time	58
7.6.1. Non-arrival of emergency services	58
7.6.1.1. Non-arrival of emergency services – general analysis	58
7.6.1.2. Non-arrival of emergency services – Scenario	61
7.6.1.3. Non-arrival of emergency services – Time Frame	62
7.6.1.4. Non-arrival of emergency services - Language	64
7.6.2. Arrival of emergency services	66
7.6.2.1. Ambulance – General analysis	68
7.6.2.1.1. Ambulance – Analysis per scenario	70
7.6.2.1.2. Ambulance – Analysis per time frame	70
7.6.2.1.3. Ambulance – Analysis per call language	70
7.6.2.2. Firefighters – General analysis	77
7.6.2.2.1. Firefighters – Analysis per scenario	79
7.6.2.2.2. Firefighters – Analysis per time frame	79
7.6.2.2.3. Firefighters – Analysis per call language	79
7.6.2.3. Police – General Analysis	86
7.6.2.3.1. Police – Analysis per scenario	88
7.6.2.3.2. Police – Analysis per time frame	88
7.6.2.3.3. Police – Analysis per call language	88
8. HIGHLIGHTS	95
9. FINAL GENERAL CONCLUSIONS	97
10. ACKNOWLEDGEMENT	103
11. INDEXES	104
11.1. Table Index	104
11.2 Graph Index	106
12. ANNEXES	107

## 1. INTRODUCTION

The “112 Service Survey,” hereinafter called “112 Survey,” was a cross-study on the collaboration and understanding among various entities to ascertain whether they guaranteed an essential public service.

The project was headed by the recently formed National Fire and Civil Protection Service and by the Portuguese Consumer Protection Association – DECO. The project called for a partnership study about the operation mode of the 112 emergency number in Portugal.

Generally, we wanted to analyse four aspects: the time to contact a 112 operator; the call centre’s service quality for calls made in Portuguese, English, French and Spanish; the type of information requested when the call is answered; and the emergency services made available and their response time.

The study allowed us, and will allow us, to gather information, to check and diagnose the system’s main limitations and its obstacles to the appropriate and effective operation of the 112 emergency service, according to the said survey criteria.

There was a pressing need to evaluate the whole emergency system that is triggered whenever a telephone call is made to the 112 emergency number. We took into account, among other factors, that Portugal’s 112 emergency system had never been diagnosed and the importance of doing so because of the upcoming Euro 2004. This is an event of great importance for the whole country during which the 112 emergency service’s correct and effective operation may come to be fundamental.

The study was therefore essential and opportune. It analysed, among other factors, the service quality for calls in Portuguese (60%), English (20%), French (10%) and Spanish (10%).

We therefore decided to perform a study that would evaluate the operation of the 112 emergency system. This study took into account the services rendered by the National Fire and Civil Protection Service – the entity that manages and coordinates all civil protection activities in Portugal – and was performed according to the statutory rights of the Portuguese Consumer Protection Association – DECO, which is a Public Service Association that mainly protects legitimate consumer interests.

The study called for protocols among the entities coordinating the country's other emergency systems, in particular systems coordinated by the Public Security Police, by the National Republican Guard, by the then National Fire Service and by the National Medical Emergency Institute.

It was also necessary to obtain sponsorship to perform the study from the European Commission, particularly since the study methodology, implementation and national coverage would require considerable logistics.

The European Commission's sponsorship required that the project also be implemented in Spain through the "Confederación de Consumidores y Vecinos," which would be responsible for developing the SOS – 112 project in Spain.

We would like to thank the European Commission for its sponsorship and for its confidence in the study partners, particularly in the Portuguese Consumer Protection Association – DECO.

This report compiles the study's data and results and provides a detailed description of the goals, methodology, implementation, formalities and the various vicissitudes.

We would like to thank all partners that participated in this project for their availability, efforts and unquestionable professionalism.

## 2. GOALS

The application submitted by the Portuguese Consumer Protection Association – DECO to the European Commission – Directorate-General of the Environment, Department of Environmental Quality and Natural Resources was meant to obtain the necessary financing for a study that the two entities thought to be pressing and of particular importance.

The study aimed to evaluate the 112 emergency system's effectiveness, since it is absolutely necessary that it function properly, and to analyse its performance from different perspectives.

The study would allow us to evaluate the 112 emergency service for any emergency situation which triggered its operation and covered the whole Portuguese territory.

Our proposed general objectives, which were the only way to carry out a well-founded study, soon exposed the magnitude of the necessary means.

Having determined the simulated events, participation by any of the various types of 112 emergency services and the study's national coverage, we then had to select the specific 112 service aspects that the study would focus on.

Those aspects are, clearly, those determining the emergency service's effectiveness and, ultimately, that justify its very existence and its emphasis on providing fast service when necessary.

We thus laid out specific aspects to be analysed: the time to reach a 112 operator; the type of call centre service; the type of information requested during the call; and, lastly, the wait time for the respective emergency service.

As for checking the call centre service quality, note that calls were made in Portuguese, English, French and Spanish.

There had been no previous independent or verisimilar indicators for an in-depth analysis of the 112 emergency system. We therefore felt that this was the best means of determining and checking the call centres' compliance with standards of quality and effectiveness when providing service to emergency situations.

Moreover, the European Commission also determined that this survey was needed. The Commission coordinated Portugal's study with the study to be performed in Spain, so that it may evaluate the operation of these systems and thereby create proper mechanisms and procedures to possibly standardise procedures and regulations within the EU to improve the effectiveness of these systems.

Lastly, we felt that this study's results, after having been analysed and processed, should be compiled in a final global report written by DECO. The report is also meant for the National Civil Protection System that would disclose its findings to the other participating partners.

The study must also be disclosed to the media, particularly so that the public may have access to the general results.

### 3. PARTNERS

The study about the 112 emergency number's operation mode, within the terms laid out, naturally required an agreement between the Portuguese Consumer Protection Association – DECO and the National Civil Protection Service.

In fact, according to the National Civil Protection System's duties – as laid out by article 8 of Decree-Law no. 203/93 of June 3, amended by Decree-Law no. 152/99 of May 10 – the said entity, as the supervisor and coordinator of all national civil protection activities, among others, must take inventory of and inspect the country's available civil protection services, means and resources.

For this purpose, the National Civil Protection Service has the power to promote exercises to test the operation capacity of emergency plans, to maintain the effectiveness and promptness of civil protection agents, and to take measures to evaluate the civil protection system's services.

The Portuguese Consumer Protection Association – DECO, a Public Utility Association, acts mainly to protect legitimate consumer rights and interests. To do so, it employs means of informing, training and mobilising Portuguese Consumers.

DECO must, in particular, disclose study results and analyses for products and services covered by various projects, either on its own or in partnership with national and foreign entities. DECO must also disclose all information susceptible of developing Portuguese Consumers' capacity for critical analysis and thereby improve services rendered to them, with the ultimate motive of improving their quality of life.



Moreover, currently, within the terms of Decree-Law no. 73/97 of April 3, the national 112 emergency telephone number covers the emergency systems available within the national territory, particularly those coordinated by security forces – Public Security Police and the National Republican Guard – by the National Civil Protection Service, by the National Fire Service and by the National Medical Emergency Institute.

As such, the partnership to be established and protocolled between the Portuguese Consumer Protection Association - DECO and the National Civil Protection Service should also include involvement and direct participation by entities that head the emergency systems available in the national territory *covered* by the 112 number, as was the case.

The said entities in fact participated within their expected range of action and in harmony with the fundamental role that all of them play in the various emergency services that they render.

Therefore, the National Fire Service's general duties, within the terms of their Organic Law, are to orientate, coordinate and inspect activities of the Fire Brigades. The National Fire Service has the specific duty to foster the spirit of volunteerism to obtain public participation in the prevention, safety, fire-fighting and other rescue means entrusted to Fire Brigades, as well to establish cooperation agreements with national and international entities in matters related with the action of Fire Brigades.

The National Medical Emergency Institute, within the terms of its Organic Law, is in charge of articulating actions that, within the scope of medical emergencies, are performed by any public or private entities to guarantee their indispensable efficiency.

As for the National Republican Guard, within the terms of the Organic Law, in addition to its general mission to maintain public order, ensuring the rights, liberty and guarantees of citizens, by law it must also collaborate with public or private entities that request their services to guarantee the security of persons and goods.

Lastly, the Public Security Police, within the terms of its Regulations and Operation Law, maintain public order, security and public peace, provide assistance to the community and emergency assistance to accident victims, and also cooperate with other entities that have the same goals.

Within this framework, the said entities signed the 112 Emergency Service Survey Protocol that set forth each participant's participation terms to ensure that the study to evaluate the 112 emergency system's operation would be performed properly.

#### 4. METHODOLOGY

The study to evaluate the 112 emergency system's operation would be based on 1,040 telephone calls to this service throughout the country, according to the geographic distribution of the Portuguese population based on the *2001 census* and according to the administrative division of the Portuguese continental territory, specified in NUTS III, covering 0.01% of the national population.

The calls were made in Portuguese, English, French and Spanish. Each telephone call was based on a credible accident scenario or need for assistance that would allow us to collect the information necessary to complete the study's objectives.

The National Civil Protection Service was specifically in charge of defining the content of the telephone surveys by simulating specific event scenarios.

The following scenarios were used to simulate typical everyday emergency situations handled by the National Civil Protection Service and reported by a telephone call:

- a) Scenario 1 – “Fire in a 3<sup>rd</sup> storey apartment in a building with 3 floors. There is nobody inside. A neighbour makes the call. There is a lot of smoke in the building's stairwell. Flames are coming out of the window. No further information is known;”
- b) Scenario 2 – “A couple living on the ground floor of a building are having a violent argument during which the husband is beating his wife and threatening to kill her. They frequently argue and the wife was already hospitalised 2 years ago when her husband broke her arm. Nobody

dares to knock on the door since the husband does not get along with any of the neighbours;”

- c) Scenario 3 – “An accident between a car and a motorcycle. The car ran off the road, rolled over and trapped the driver inside. The victim is not responding and his condition is unknown. The motorcyclist is lying on the pavement, has a broken leg, is bleeding badly and in great pain. There’s oil on the road. The person making the call is very nervous and hangs up without providing any more information other than saying that the accident took place in the town of XXX;”
- d) Scenario 4 – “A 64-year-old man is having strong chest pain. He is overweight ( $\pm 100$  kg). He has just finished eating (note the calling hour) and went into the bathroom with severe diarrhoea. He is sweating and says he has difficult breathing. The caller is the victim’s son/daughter and is alone at home. The father has never had health problems and can’t even remember having gone to the doctor. The victim is spending a few days at the son’s/daughter’s home but usually lives in Aveiro (in the call from the district of Aveiro, the victim lives in Covilhã);”
- e) Scenario 5 – “A woman who is 8 months pregnant breaks her water bag and has strong contractions. She woke up in the middle of the night, after having spent the afternoon tidying up the house. It’s her first child but she has previously aborted twice. The husband made the call, is in total panic and can’t explain anything else.”

The information and data collected through each phone call simulating a specific event would make it possible to cover all specific goals laid out. These goals included an analysis of the time for the call to get through, the type of answering service for each language, the type of information requested when the call is answered and an analysis of the wait time for the service in question.

Based on a *survey* prepared in advance and approved by all partners, each call is thus a means of checking the 112 emergency number. A brief analysis report was written for each call to be later compiled and to determine the study results in a final overall report.

The study surveys were performed by 35 specifically trained collaborators of the Portuguese Consumer Protection Association – DECO. Members of the National Civil Protection Service always followed-up the operations on location, and all participants displayed easily recognisable identification badges.

DECO survey personnel received specific training for this purpose at the association's headquarters in Lisbon, which included the following measures:

- a) general project presentation;
- b) framework of underlying legal aspects;
- c) in-house procedures and processing aspects for carrying out the project in the field and contacts with the national coordination;
- d) questionnaire processing and filling out;
- e) the National Civil Protection Service presented the planned scenarios and appropriate procedures, and scripts were written for each scenario;
- f) practical simulations.

Although the Ministries in charge of the various services assigned to 112 were notified of this study in advance, the actual content was kept in complete secrecy to ensure the survey's effectiveness and the reliability of its results. The National Civil Protection Service was also free to suspend the methods and procedures at any time in order to safeguard the emergency system's effectiveness during the study.

We carefully analysed the provisions of article 306 of the Portuguese Penal Code covering “Abuse and Simulation of Danger Signals” and took precautions to safeguard any legal-penal relevance of the study procedures to be applied regarding the simulation of emergency situations when making the planned telephone calls.

Therefore, we asked the State Attorney General to issue an opinion on the legal-penal framework of the project’s actions. The said opinion indicated that the study procedures had no legal or penal relevance.

In truth, the Portuguese Penal Code protects the normal operation of the public assistance mechanisms.

Therefore, the State Attorney General considered that calls to the 112 emergency service are abusive only when they cause a deviation in this service’s purposes.

The study’s survey calls were also part of the Emergency System’s services since the study strived to improve the said system.

As such, we may say that this study survey, which was partly carried out by telephone calls, was not an abusive deviation of the emergency service’s purposes and in fact was part of that emergency system’s goals, therefore not comprising any legal obstacle to their implementation.

Within these terms, the State Attorney General, which in Portugal has the exclusive powers over investigation and studies of criminal action, recognised the evident need to determine and check the emergency service’s compliance with standards of response quality and effectiveness in emergency situations.

## 5. IMPLEMENTATION

During the study's implementation stage, it soon became apparent that the study would require very complex logistics and procedures.

Although the study's sponsorship application submitted to the European Commission was approved in June 2002, by which the contract was forwarded, the actual survey in the field began only in November 2002.

After the survey began, successive requests were made to delay the planned project completion period which had initially been stipulated at only four months.

The said four-period was insufficient because of various formalities and unforeseen events.

The process took off to a slow start from the very beginning since it was necessary to formalise other partners' participation, particularly entities that supervise 112 emergency systems. Establishing these formalities became absolutely essential due to the selected methodology and the complexity of the field surveys according to the parameters laid out.

We planned to ensure the greatest consensus possible and the broadest and most useful study coordination in the field without undermining the selected methodology. We also planned to absolutely safeguard the system's effectiveness during the study and its prompt emergency service in real situations.

Other measures were also taken into account, particularly the request that the State Public Attorney issue an Opinion on the legal-penal framework about the said actions to be carried out for the project.

Similarly, the surveyors/inquirers were trained differently than what was initially planned. The initial plan called for surveys performed by 10 inquirers, through 2-person teams who would cover the country in three months. Each team would collect the necessary information by making five calls per day at each previously determined location.

However, various coordination difficulties in the field required that the number of surveyors/inquirers be substantially larger than what had been initially planned

Additionally, in November 2002, after the field surveys had begun, the study was suspended during the Christmas and New Year's season because of the greater need for emergency services and the means assigned to them during this time. There were also other unusual situations such as floods in Oporto and the potential collapse of a dam in Ribatejo.

After this period, the study was being performed as planned when various factors determined a new suspension. The entities in charge of 112 emergency services decided to suspend the study for various reasons: because of an unforeseen incident; because the services in charge of the 112 emergency system were restructured; and because most of the system's previous supervisors were replaced both at the central and local level.

Due to the aforementioned factors, the government entity in charge decided to review the study methods. Although the system never decreased its response capacity in real situations during the survey, as agreed and guaranteed, an addendum was made to the existing clauses.

The addendum generally stipulated that in scenarios involving intervention by INEM (National Medical Emergency Institute), in the minute following the survey call, the National Civil Protection Service would call the physician on duty at the



CODU (Orientation Centre for Urgent Patients) informing him/her about the simulated call. If, for any reason, it was not possible to contact CODU, within the minute following the attempt to make that call, the National Civil Protection Service would make a new call to the 112 emergency system notifying the operator about the simulated survey call.

The addendum in question and the respective provisions, which required an addendum to the questionnaire, additional information about the locations covered by the CODU and the respective telephone numbers, delayed the project even longer.

The delay was even longer, as stated, since the National Civil Protection Service and the National Fire Service were eliminated by a government decision. These services gave way to the current National Civil Protection and Fire Service. This change was a real setback for the study since the majority of District Civil Protection Coordinators were replaced, and therefore new contacts had to be made to plan and restart the remaining survey inquiries.

Due to the aforementioned, the survey in the field resumed only in early June 2003, a month in which almost all the remaining inquiries were carried out.

## 6. SAMPLE CHARACTERISTICS

We made 957 telephone calls to the 112 emergency number throughout the country according to the NUTS III administrative division of the Portuguese continental territory.

Those calls comprised this study sample distributed as shown in table 1.

Table 1

NUTS III	Total
Alentejo Central	19
Alentejo Litoral	10
Algarve	40
Alto Alentejo	11
Alto Trás Montes	21
Ave	27
Baixo Alentejo	10
Baixo Mondego	42
Baixo Vouga	39
Beira Interior Norte	1
Cávado	31
Cova da Beira	10
Dão Lafões	29
Douro	16
Entre Douro e Vouga	30
Grande Lisboa	196
Grande Porto	118
Lezíria Tejo	24
Médio Tejo	19
Minho-Lima	30
Oeste	36
Pinhal Interior Norte	18
Pinhal Interior Sul	9
Pinhal Litoral	34
Serra da Estrela	8
Setúbal	70
Tâmega	59
<b>Total</b>	<b>957</b>

The following table shows the sample distribution per time frame and per NUT, for which only 956 inquiries were valid since one questionnaire was not fully filled out.

Table 2

NUTS III	Time Frame			Total
	1	2	3	
Alentejo Central	11	5	3	19
Alentejo Litoral	4	3	3	10
Algarve	15	14	11	40
Alto Alentejo	5	3	3	11
Alto Trás Montes	6	10	5	21
Ave	4	15	8	27
Baixo Alentejo	4	4	2	10
Baixo Mondego	16	16	10	42
Baixo Vouga	15	14	10	39
Beira Interior Norte		1		1
Cávado	5	17	9	31
Cova da Beira	8	2		10
Dão Lafões	13	10	6	29
Douro	7	6	3	16
Entre Douro e Vouga	11	11	8	30
Grande Lisboa	87	89	20	196
Grande Porto	47	43	28	118
Lezíria Tejo	12	10	2	24
Médio Tejo	16	3		19
Minho-Lima	17	11	2	30
Oeste	12	16	8	36
Pinhal Interior Norte	9	6	3	18
Pinhal Interior Sul	4	3	2	9
Pinhal Litoral	16	12	6	34
Serra da Estrela	4	3	1	8
Setúbal	33	27	10	70
Tâmega	23	20	15	58
<b>Total</b>	<b>404</b>	<b>374</b>	<b>178</b>	<b>956</b>

Table three shows the sample distribution per scenario and per NUT, covering only 954 inquiries since three questionnaires were not fully filled out.

Table 3

NUTS III	Scenario					Total
	1	2	3	4	5	
Alentejo Central	3	3	5	5	2	18
Alentejo Litoral	1	1	4	3	1	10
Algarve	6	8	10	10	6	40
Alto Alentejo	1	1	4	4	1	11
Alto Trás Montes	4	4	5	6	2	21
Ave	4	9	6	3	5	27
Baixo Alentejo	1	1	4	3	1	10
Baixo Mondego	6	8	11	11	6	42
Baixo Vouga	7	7	9	7	9	39
Beira Interior Norte			1			1
Cávado	5	6	9	5	6	31
Cova da Beira	1	2	3	3	1	10
Dão Lafões	4	6	7	8	4	29
Douro	2	4	4	4	2	16
Entre Douro e Vouga	5	6	9	6	4	30
Grande Lisboa	36	37	40	42	41	196
Grande Porto	24	26	22	25	21	118
Lezíria Tejo	2	7	4	4	7	24
Médio Tejo	4	3	4	3	5	19
Minho-Lima	4	4	10	8	4	30
Oeste	7	12	9	5	2	35
Pinhal Interior Norte	3	3	5	5	2	18
Pinhal Interior Sul	1	1	4	2	1	9
Pinhal Litoral	8	11	7	3	5	34
Serra da Estrela	1		4	2	1	8
Setúbal	11	17	15	15	12	70
Tâmega	10	11	17	10	10	58
<b>Total</b>	<b>161</b>	<b>198</b>	<b>232</b>	<b>202</b>	<b>161</b>	<b>954</b>

Table four shows the sample distribution per language and per NUT, covering only 948 inquiries since nine questionnaires were not completely filled out.

Table 4 Language

Table 4

NUTS III	Language				Total
	1	2	3	4	
Alentejo Central	10	4	2	2	18
Alentejo Litoral	6	2	1	1	10
Algarve	24	8	4	4	40
Alto Alentejo	7	2	1	1	11
Alto Trás Montes	12	5	2	2	21
Ave	21	3	1	1	26
Baixo Alentejo	8	1	1		10
Baixo Mondego	31	6	4	1	42
Baixo Vouga	22	9	3	5	39
Beira Interior Norte	1				1
Cávado	23	4	3	1	31
Cova da Beira	10				10
Dão Lafões	21	4	2	2	29
Douro	9	3	2	2	16
Entre Douro e Vouga	18	7	2	3	30
Grande Lisboa	118	40	20	18	196
Grande Porto	78	20	9	11	118
Lezíria Tejo	22	2			24
Médio Tejo	15	2		2	19
Minho-Lima	19	6	3	2	30
Oeste	23	8	1	2	34
Pinhal Interior Norte	16		1	1	18
Pinhal Interior Sul	6	2	1		9
Pinhal Litoral	22	5	5	2	34
Serra da Estrela	6	1		1	8
Setúbal	43	14	7	2	66
Tâmega	34	12	6	6	58
<b>Total</b>	<b>625</b>	<b>170</b>	<b>81</b>	<b>72</b>	<b>948</b>

## 7. ANALYSIS OF RESULTS

As indicated, the results analysis does not always include all the 957 survey inquiries for all parameters (questions) since some of the questionnaires were not completely filled out.

### 7.1 Analysis of the time to reach 112

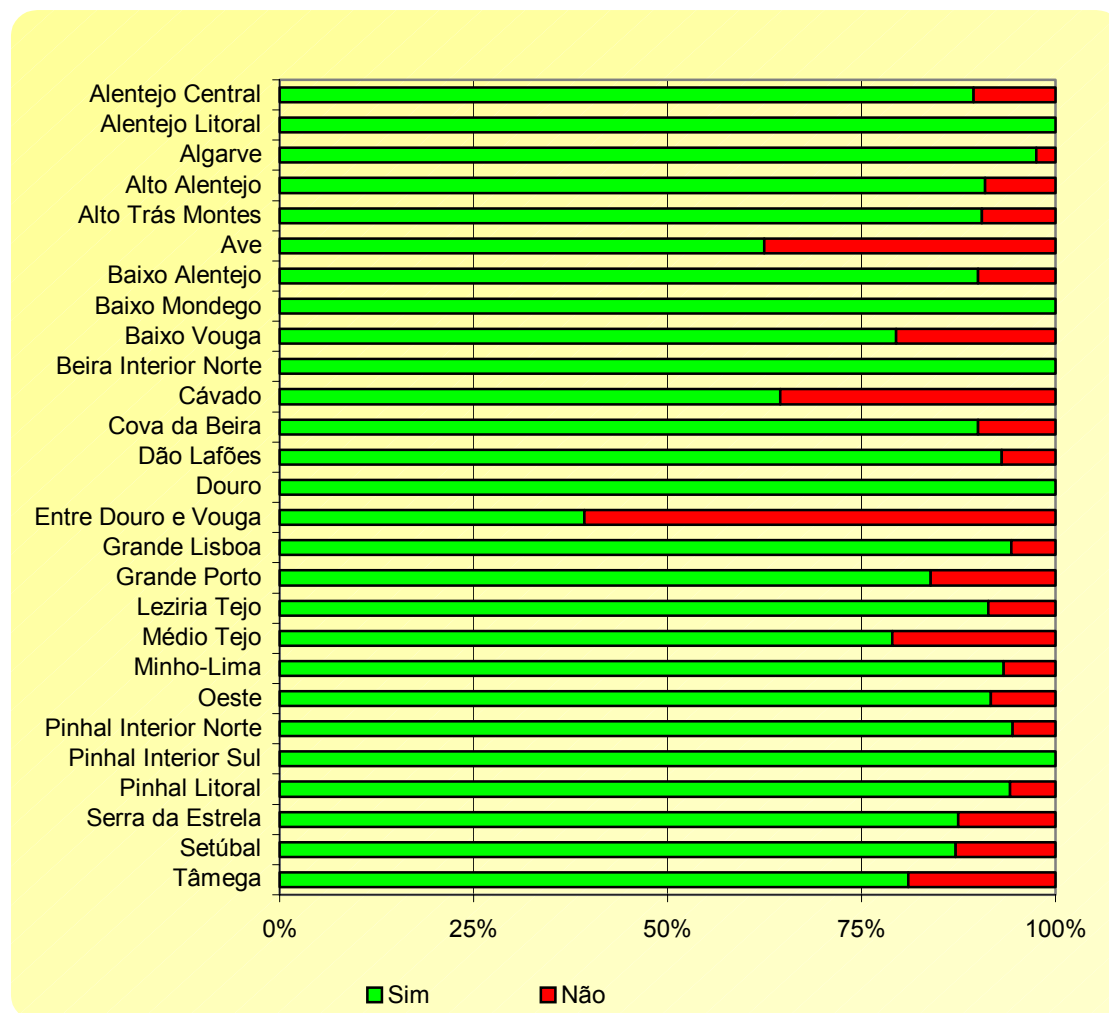
#### 7.1.1 Call answered on first attempt

Table 5. Call answered on first attempt

Time Frame	9H00 - 17H00				17H00 - 01H00				01H00 - 09H00				All Time Frames			
NUTS III	Yes		No		Yes		No		Yes		No		Yes		No	
Alentejo Central	10	91%	1	9%	5	100%			2	67%	1	33%	17	89%	2	11%
Alentejo Litoral	4	100%			3	100%			3	100%			10	100%	0	
Algarve	15	100%			14	100%			10	91%	1	9%	39	98%	1	3%
Alto Alentejo	4	80%	1	20%	3	100%			3	100%			10	91%	1	9%
Alto Trás Montes	5	83%	1	17%	9	90%	1	10%	5	100%			19	90%	2	10%
Ave	2	67%	1	33%	8	57%	6	43%	5	71%	2	29%	15	63%	9	38%
Baixo Alentejo	3	75%	1	25%	4	100%			2	100%			9	90%	1	10%
Baixo Mondego	16	100%			16	100%			10	100%			42	100%	0	
Baixo Vouga	10	67%	5	33%	12	86%	2	14%	9	90%	1	10%	31	79%	8	21%
Beira Interior Norte					1	100%							1	100%	0	
Cávado	3	60%	2	40%	10	59%	7	41%	7	78%	2	22%	20	65%	11	35%
Cova da Beira	7	88%	1	13%	2	100%							9	90%	1	10%
Dão Lafões	11	85%	2	15%	10	100%			6	100%			27	93%	2	7%
Douro	7	100%			6	100%			3	100%			16	100%	0	
Entre Douro e Vouga	4	40%	6	60%	2	20%	8	80%	5	63%	3	38%	11	39%	17	61%
Grande Lisboa	81	95%	4	5%	81	92%	7	8%	20	100%			182	94%	11	6%
Grande Porto	42	89%	5	11%	35	81%	8	19%	22	79%	6	21%	99	84%	19	16%
Lezíria Tejo	10	91%	1	9%	10	100%			1	50%	1	50%	21	91%	2	9%
Médio Tejo	12	75%	4	25%	3	100%							15	79%	4	21%
Minho-Lima	15	88%	2	12%	11	100%			2	100%			28	93%	2	7%
Oeste	10	83%	2	17%	16	100%			7	88%	1	13%	33	92%	3	8%
Pinhal Interior Norte	8	89%	1	11%	6	100%			3	100%			17	94%	1	6%
Pinhal Interior Sul	4	100%			3	100%			2	100%			9	100%	0	
Pinhal Litoral	14	88%	2	13%	12	100%			6	100%			32	94%	2	6%
Serra da Estrela	3	75%	1	25%	3	100%			1	100%			7	88%	1	13%
Setúbal	29	88%	4	12%	22	81%	5	19%	10	100%			61	87%	9	13%
Tâmega	21	91%	2	9%	17	85%	3	15%	9	60%	6	40%	47	81%	11	19%
<b>Total</b>	<b>350</b>	<b>88%</b>	<b>49</b>	<b>12%</b>	<b>324</b>	<b>87%</b>	<b>47</b>	<b>13%</b>	<b>153</b>	<b>86%</b>	<b>24</b>	<b>14%</b>	<b>827</b>	<b>87%</b>	<b>120</b>	<b>13%</b>

The proportion of calls answered on first attempt was the same. There was no significant difference of calls answered on first attempt according to the time frame.

Graph 1 – Call answered on first attempt



In the 947 inquiries, we found that 87% of calls (827) were answered on first attempt. Obviously, and more relevant, this means that in 13% of calls (120) we had to call 112 more than once to notify an emergency situation.

In a more detailed analysis, according to the NUTS III covered, we found that generally (for all time frames) there were regions with even poorer results. This was the case, for example, in the NUTS Entre Douro e Vouga, Cávado, Tâmega, Ave and Baixo Vouga.

In Entre Douro e Vouga, in 17 of the 28 calls (61%) we had to repeat the calls before they were answered. In Cávado, that happened in 11 of the 31 calls (35%). In Tâmega, also in 11 times (19%) we had to repeat the call. In Ave and Baixo Vouga we had to call again 9 (38%) and 8 (21%) times, respectively.

However, there were also cases of success, such as in the NUTS of Alentejo Litoral, Baixo Mondego, Douro and Pinhal Interior Sul, where all (100%) calls were answered on first attempt.

An analysis of the “answer on first attempt” according to the call’s time frame reveals that there were no statistically significant differences ( $\alpha=0.05$ ) between the three determined time frames. That is, the proportion of answers on first attempt was the same regardless of the call’s time of day.

Similarly, failure on the first call attempt wasn’t in any way linked to the network used – fixed or mobile (TMN, Vodafone and Optimus) – since there were no significant statistical differences ( $\alpha=0.05$ ) among these.



Table 6

Network Used	Wired Network		Vodafone		Optimus		TMN		All Networks	
NUTS III	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Alentejo Central			3 100%		7 78%	2 22%	7 100%		17 89%	2 11%
Alentejo Litoral	1 100%		6 100%				3 100%		10 100%	0
Algarve	7 100%		4 80%	1 20%	4 100%		24 100%		39 98%	1 3%
Alto Alentejo					8 100%		2 67%	1 33%	10 91%	1 9%
Alto Trás Montes	3 100%		2 100%		4 100%		8 80%	2 20%	17 89%	2 11%
Ave	2 100%		1 100%		3 60%	2 40%	9 56%	7 44%	15 63%	9 38%
Baixo Alentejo	3 75%	1 25%					6 100%		9 90%	1 10%
Baixo Mondego	1 100%		27 100%		8 100%		6 100%		42 100%	0
Baixo Vouga			6 100%		1 100%		24 75%	8 25%	31 79%	8 21%
Beira Interior Norte							1 100%		1 100%	0
Cávado					9 56%	7 44%	11 73%	4 27%	20 65%	11 35%
Cova da Beira			1 100%				8 100%		9 100%	0
Dão Lafões			2 50%	2 50%			25 100%		27 93%	2 7%
Douro	3 100%		8 100%				5 100%		16 100%	0
Entre Douro e Vouga	1 14%	6 86%		1 100%			10 50%	10 50%	11 39%	17 61%
Grande Lisboa	26 90%	3 10%	60 97%	2 3%	7 100%		85 93%	6 7%	178 94%	11 6%
Grande Porto	58 82%	13 18%	21 84%	4 16%	10 91%	1 9%	9 90%	1 10%	98 84%	19 16%
Lezíria Tejo					11 92%	1 8%	9 90%	1 10%	20 91%	2 9%
Médio Tejo					2 100%		13 76%	4 24%	15 79%	4 21%
Minho-Lima					5 100%		22 92%	2 8%	27 93%	2 7%
Oeste			7 100%		3 100%		23 88%	3 12%	33 92%	3 8%
Pinhal Interior Norte			16 94%	1 6%	1 100%				17 94%	1 6%
Pinhal Interior Sul					2 100%		7 100%		9 100%	0
Pinhal Litoral			3 100%				29 94%	2 6%	32 94%	2 6%
Serra da Estrela							7 88%	1 13%	7 88%	1 13%
Setúbal	14 93%	1 7%	19 79%	5 21%	10 91%	1 9%	15 94%	1 6%	58 88%	8 12%
Tâmega	22 79%	6 21%	13 87%	2 13%	9 90%	1 10%	4 67%	2 33%	48 81%	11 19%
<b>Total</b>	<b>141 82%</b>	<b>30 18%</b>	<b>199 92%</b>	<b>18 8%</b>	<b>104 87%</b>	<b>15 13%</b>	<b>372 87%</b>	<b>55 13%</b>	<b>816 87%</b>	<b>118 13%</b>

The proportion of answers on first attempt was the same. There was no significant difference in answer at first attempt among the networks used.

## 7.1.2 Number of attempts to reach 112

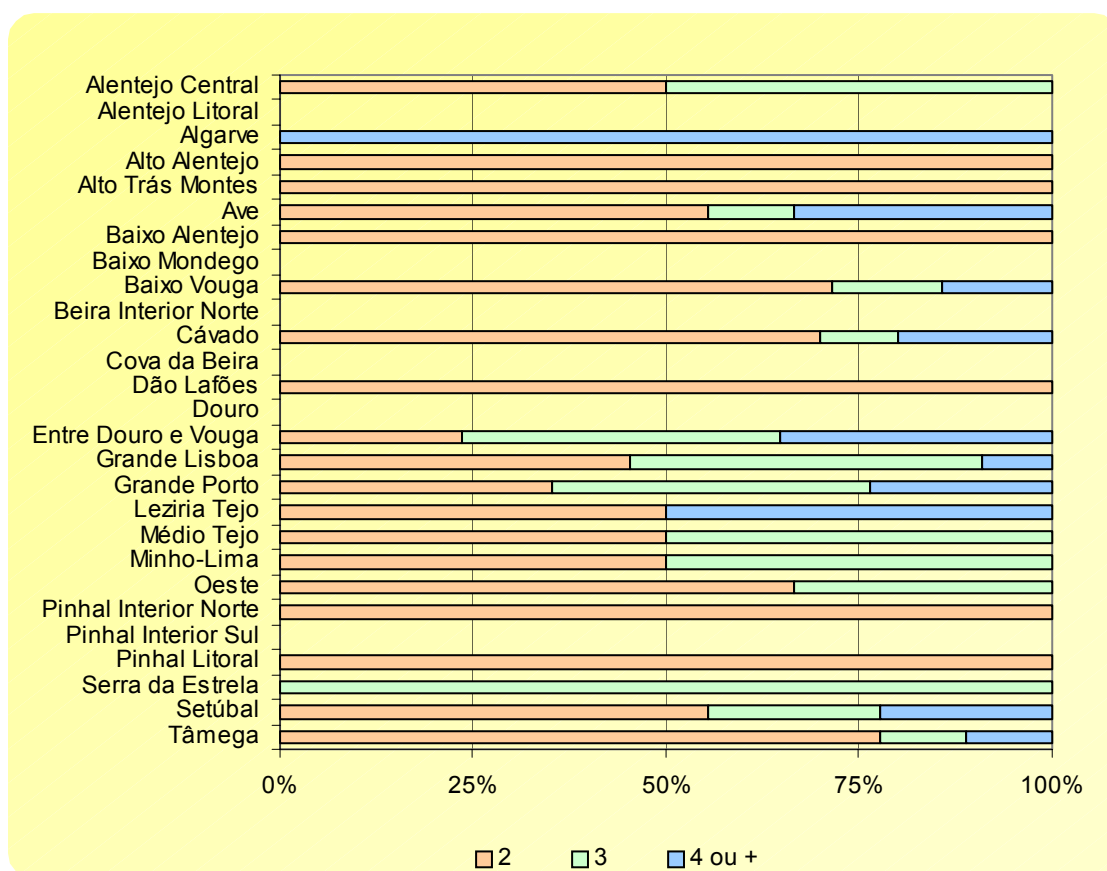
For a call not answered on first attempt, we analysed the number of times the call had to be repeated until being answered.

The conclusion is that, generally, one more call was sufficient. In fact, calls were answered on the second attempt in 52% of times (58 calls). However, in 20% of cases (22 calls) it was necessary to call 4 or more times.

In an analysis per NUTS we found 3 regions – Entre Douro e Vouga, Greater Lisbon and Greater Oporto – where the majority of repeated calls were repeated 3 or more times. In Greater Lisbon, 45% (5 calls) required three attempts and 10% (1 call) 4 attempts. In Greater Oporto, 7 (41%) were repeated three times and 4 (24%) required more attempts, one requiring 12 calls. In Entre

Douro e Vouga, 7 (41%) of the 17 calls that had to be repeated were answered only on the third attempt and 6 (35%) only after more attempts, one of which after the 10<sup>th</sup> attempt. But in Ave, there was one case in which the call had to be repeated 20 times before being answered.

**Graph 2 – Number of attempts for calls not answered on first attempt**



**Table 7 - Number of attempts for calls not answered on first attempt**

Of the 120 calls not answered on first attempt, we have statistics for 111.

Number of Attempts	9H00 - 17H00			17H00 - 01H00			01H00 - 09H00			General		
	2	3	4 ou +	2	3	4 ou +	2	3	4 ou +	2	3	4 ou +
Alentejo Central		1 100%					1 100%			1 50%	1 50%	
Alentejo Litoral									1 100%			1 100%
Algarve												
Alto Alentejo	1 100%									1 100%		
Alto Trás Montes	1 100%									1 100%		
Ave	1 100%			2 33%	1 17%	3 50%	2 100%			5 56%	1 11%	3 33%
Baixo Alentejo	1 100%									1 100%		
Baixo Mondego												
Baixo Vouga	4 80%		1 20%		1 100%		1 100%			5 71%	1 14%	1 14%
Beira Interior Norte												
Cávado	2 100%			3 50%	1 17%	2 33%	2 100%			7 70%	1 10%	2 20%
Cova da Beira												
Dão Lafões	2 100%									2 100%		
Douro												
Entre Douro e Vouga	1 17%	2 33%	3 50%	3 38%	2 25%	3 38%		3 100%		4 24%	7 41%	6 35%
Grande Lisboa	4 100%			1 14%	5 71%	1 14%				5 45%	5 45%	1 10%
Grande Porto	3 60%	1 20%	1 20%	2 33%	1 17%	3 50%	1 17%	5 83%		6 35%	7 41%	4 24%
Lezíria Tejo	1 100%								1 100%	1 50%		1 50%
Médio Tejo	2 50%	2 50%								2 50%	2 50%	
Minho-Lima	1 50%	1 50%								1 50%	1 50%	
Oeste	1 50%	1 50%					1 100%			2 67%	1 33%	
Pinhal Interior Norte	1 50%									1 100%		
Pinhal Interior Sul												
Pinhal Litoral	1 100%									1 100%		
Serra da Estrela		1 100%									1 100%	
Setúbal	1 33%	1 33%	1 33%	3 60%	1 20%	1 20%	1 100%			5 56%	2 22%	2 22%
Tâmega	2 100%			2 67%	1 33%		3 75%		1 25%	7 78%	1 11%	1 11%
<b>Total</b>	<b>30 65%</b>	<b>10 22%</b>	<b>6 13%</b>	<b>16 38%</b>	<b>13 31%</b>	<b>13 31%</b>	<b>12 52%</b>	<b>8 35%</b>	<b>3 13%</b>	<b>58 52%</b>	<b>31 28%</b>	<b>22 20%</b>

### 7.1.3 Wait time for a 112 call to be answered

Taking into account 930 calls, on average a call to 112 took 9 seconds to be answered (about 3 rings). Although this average time may vary slightly depending on the time frame – slightly faster from 9:00 to 17:00 h (8 seconds) and not as fast (10 seconds) at night (01:00 to 09:00 h) – the difference was not statistically significant ( $\alpha=0.05$ ).

**Table 8 - Wait time for a call to be answered**

In Seconds	Time to Answer			
	Time Frame			General
NUTS III	H1	H2	H3	Average
Alentejo Central	9	8	10	9
Alentejo Litoral	9	5	7	7
Algarve	7	3	9	7
Alto Alentejo	9	11	9	10
Alto Trás Montes	13	11	16	13
Ave	26	11	9	15
Baixo Alentejo	8	7	11	8
Baixo Mondego	5	10	11	9
Baixo Vouga	11	19	19	17
Beira Interior Norte		6		6
Cávado	5	9	11	8
Cova da Beira	7	6		6
Dão Lafões	5	9	10	8
Douro	11	10	6	9
Entre Douro e Vouga	8	9	16	11
Grande Lisboa	6	9	8	7
Grande Porto	5	7	10	7
Lezíria Tejo	4	8	3	5
Médio Tejo	7	9		8
Minho-Lima	9	11	17	12
Oeste	8	8	13	10
Pinhal Interior Norte	9	10	5	8
Pinhal Interior Sul	8	10	9	9
Pinhal Litoral	9	8	7	8
Serra da Estrela	9	9	12	10
Setúbal	3	2	7	4
Tâmega	6	10	10	9
General Average	8	9	10	9

H1 9H00 - 17H00  
H2 17H00 - 01H00  
H3 01H00 - 09H00

Furthermore, there were extreme cases where the time to answer a call reached 2 minutes (120 seconds). This happened 3 times in the NUTS of Greater Oporto – twice from 9:00 to 17:00 h and once from 17:00 to 1:00 h – and two times in the NUTS of Baixo Vouga – both in the daytime frame from 9:00 to 17:00 h.

Expressing the wait time by number of rings – each ring corresponding to 3 seconds – we found that, regardless of the time frame, on average 2 (30%) or 3 (27%) rings were necessary before we were able to begin notifying the emergency situation. Moreover, it was more frequent to have to wait 4 rings (23%) than to be answered on the first ring (9%).

Table 9 - Number of rings before call is answered (930 calls)

Number of Rings	9H00 - 17H00					17H00 - 01H00					01H00 - 09H00					General					Total
	1	2	3	4	+ 4	1	2	3	4	+ 4	1	2	3	4	+ 4	1	2	3	4	+ 4	
Alentejo Central	2	1	4	4		1	1	1	2		1	1	3	2		3	3	5	8		19
	18%	9%	36%	36%		20%	20%	20%	40%		33%		67%			16%	16%	26%	42%		100%
Alentejo Litoral	1		1	2		2		1			2	1				3	2	3	2		10
	25%		25%	50%		67%		33%			67%	33%				30%	20%	30%	20%		100%
Algarve	1	9	3	2			10	3	1		1	2	3	5		2	21	9	8		40
	7%	60%	20%	13%		71%	21%	7%			9%	18%	27%	45%		5%	53%	23%	20%		100%
Alto Alentejo		2	1	2				1	2			1	1	1			3	3	5		11
		40%	20%	40%				33%	67%			33%	33%	33%			27%	27%	45%		100%
Alto Trás Montes		2	1	1	2	1	4		2	3		2	1		2	1	8	2	3	7	21
		33%	17%	17%	33%	10%	40%		20%	30%		40%	20%		40%	5%	38%	10%	14%	33%	100%
Ave		1			2	4	3	3	3	1	1	2		3		5	6	4	6	3	24
		33%			67%	29%	21%	21%	21%	7%	14%	29%	14%	43%		21%	25%	17%	25%	13%	100%
Baixo Alentejo		2	2			3	1						1	1		5	4	1			10
		50%	50%			75%	25%						50%	50%		50%	40%	10%			100%
Baixo Mondego	4	5	5	2		1	2	3	8	2		3	2	4	1	5	10	10	14	3	42
	25%	31%	31%	13%		6%	13%	19%	50%	13%		30%	20%	40%	10%	12%	24%	24%	33%	7%	100%
Baixo Vouga	1	1	1	5	7	1	1	1	4	6	1	2	1	4	2	3	4	3	13	15	38
	7%	7%	7%	33%	47%	8%	8%	8%	31%	46%	10%	20%	10%	40%	20%	8%	11%	8%	34%	39%	100%
Beira Interior Norte						1										1					1
						100%										100%					100%
Cávado	1	1	1		2	1	4	5	5		3	2	3	1	1	1	5	7	8	8	29
	20%	20%	20%		40%	7%	27%	33%	33%		33%	22%	33%	11%	3%	17%	24%	28%	28%		100%
Cova da Beira	1	3	3			2										1	5	3			9
	14%	43%	43%			100%										11%	56%	33%			100%
Dão Lafões	1	5	5	1	1	3	3	4			1	2	3			1	9	10	8	1	29
	8%	38%	38%	8%	8%	30%	30%	40%			17%	33%	50%			3%	31%	34%	28%	3%	100%
Douro	2		4	1		1	3		2		1	1	1			3	2	8		3	16
	29%		57%	14%		17%	50%		33%	33%	33%	33%				19%	13%	50%		19%	100%
Entre Douro e Vouga	2	2	2		4	3	6		1		2	1	1	4		2	7	9	1	9	28
	20%	20%	20%		40%	30%	60%		10%		25%	13%	13%	50%		7%	25%	32%	4%	32%	100%
Grande Lisboa	6	39	27	10		3	27	28	27			10	10			9	76	65	37		187
	7%	48%	33%	12%		4%	32%	33%	32%			50%	50%			5%	41%	35%	20%		100%
Grande Porto	6	10	9	9	12	5	7	12	6	13	3	8	11	2	4	14	25	32	17	29	117
	13%	22%	20%	20%	26%	12%	16%	28%	14%	30%	11%	29%	39%	7%	14%	12%	21%	27%	15%	25%	100%
Lezíria Tejo	2	3	1	5		1	3	4	2		1					4	6	5	7		22
	18%	27%	9%	45%		10%	30%	40%	20%		100%					18%	27%	23%	32%		100%
Médio Tejo	3	7	2	3	1	1			2							4	7	2	5	1	19
	19%	44%	13%	19%	6%	33%			67%							21%	37%	11%	26%	5%	100%
Minho-Lima	1	4	2	8		3	1	6	1			1		1	1	1	7	4	14	2	28
	7%	27%	13%	53%		27%	9%	55%	9%			50%		50%	4%	25%	14%	50%	7%		100%
Oeste		6	3	3		5	3	8			3	2	2	1			14	8	13	1	36
		50%	25%	25%		31%	19%	50%			38%	25%	25%	13%			39%	22%	36%	3%	100%
Pinhal Interior Norte		3	2	4		1	1		4		1	2				2	6	2	8		18
		33%	22%	44%		17%	17%		67%		33%	67%				11%	33%	11%	44%		100%
Pinhal Interior Sul		1	2		1			2	1				2				1	6	1	1	9
		25%	50%		25%			67%	33%				100%				11%	67%	11%	11%	100%
Pinhal Litoral	2	4	4	6		3	6		1		2	2	1	1		4	9	11	7	1	32
	13%	25%	25%	38%		30%	60%		10%		33%	33%	17%	17%		13%	28%	34%	22%	3%	100%
Serra da Estrela		2				1		1						1			3		4		7
		50%		50%		50%		50%						100%			43%		57%		100%
Setúbal	5	11	10	5	2	3	10	12	2		1	7	1	1		9	28	23	8	2	70
	15%	33%	30%	15%	6%	11%	37%	44%	7%		10%	70%	10%	10%		13%	40%	33%	11%	3%	100%
Tâmega	2	3	5	9	4	1	3	6	3	7	2	4	5		4	5	10	16	12	15	58
	9%	13%	22%	39%	17%	5%	15%	30%	15%	35%	13%	27%	33%		27%	9%	17%	28%	21%	26%	100%
<b>Total</b>	<b>43</b>	<b>127</b>	<b>100</b>	<b>83</b>	<b>39</b>	<b>25</b>	<b>98</b>	<b>104</b>	<b>93</b>	<b>42</b>	<b>14</b>	<b>58</b>	<b>50</b>	<b>34</b>	<b>20</b>	<b>82</b>	<b>283</b>	<b>254</b>	<b>210</b>	<b>101</b>	<b>930</b>
	11%	32%	26%	21%	10%	7%	27%	29%	26%	12%	8%	33%	28%	19%	11%	9%	30%	27%	23%	11%	100%

## 7.2.Type of answering service

### 7.2.1 Immediate operator identification

When the 112 call was answered, in 10% of cases operators didn't immediately identify themselves. There were no significant differences ( $\alpha=0.05$ ) in the immediate identification during a specific time frame.

**Table 10 - Immediate operator identification** (939 calls)

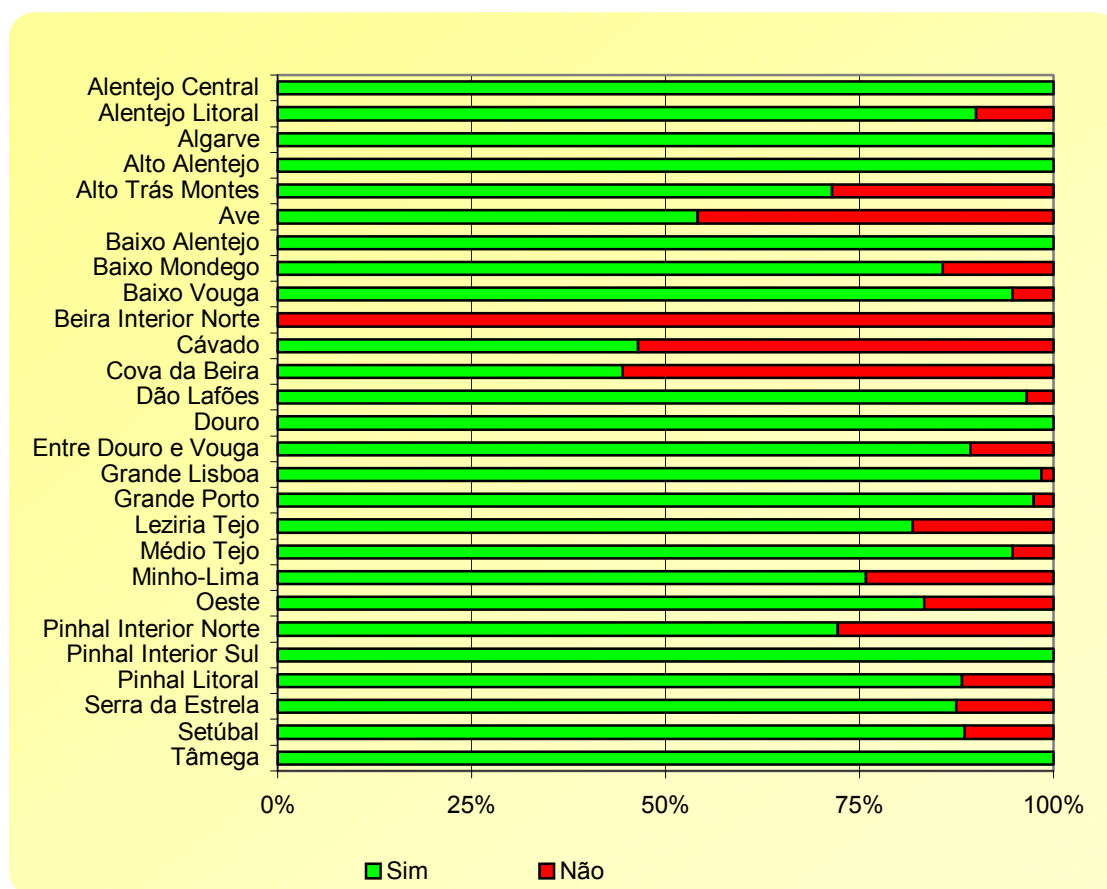
Time Frame	9H00 - 17H00		17H00 - 01H00		01H00 - 09H00		All Time Frames	
NUTS III	Yes	No	Yes	No	Yes	No	Yes	No
Alentejo Central	11 100%		5 100%		3 100%		19 100%	0 0%
Alentejo Litoral	4 100%		2 67%	1 33%	3 100%		9 90%	1 10%
Algarve	15 100%		14 100%		11 100%		40 100%	0 0%
Alto Alentejo	5 100%		3 100%		3 100%		11 100%	0 0%
Alto Trás Montes	3 50%	3 50%	8 80%	2 20%	4 80%	1 20%	15 71%	6 29%
Ave	3 100%		8 57%	6 43%	2 29%	5 71%	13 54%	11 46%
Baixo Alentejo	4 100%		4 100%		2 100%		10 100%	0 0%
Baixo Mondego	14 88%	2 13%	13 81%	3 19%	9 90%	1 10%	36 86%	6 14%
Baixo Vouga	13 87%	2 13%	13 100%		10 100%		36 95%	2 5%
Beira Interior Norte				1 100%			0 0%	1 100%
Cávado	2 50%	2 50%	7 47%	8 53%	4 44%	5 56%	13 46%	15 54%
Cova da Beira	4 57%	3 43%		2 100%			4 44%	5 56%
Dão Lafões	12 92%	1 8%	10 100%		6 100%		28 97%	1 3%
Douro	7 100%		6 100%		3 100%		16 100%	0 0%
Entre Douro e Vouga	10 100%		9 90%	1 10%	6 75%	2 25%	25 89%	3 11%
Grande Lisboa	85 100%		85 97%	3 3%	20 100%		190 98%	3 2%
Grande Porto	44 94%	3 6%	43 100%		27 100%		114 97%	3 3%
Lezíria Tejo	11 100%		6 67%	3 33%	1 50%	1 50%	18 82%	4 18%
Médio Tejo	16 100%		2 67%	1 33%			18 95%	1 5%
Minho-Lima	13 81%	3 19%	7 64%	4 36%	2 100%		22 76%	7 24%
Oeste	11 92%	1 8%	14 88%	2 13%	5 63%	3 38%	30 83%	6 17%
Pinhal Interior Norte	5 56%	4 44%	5 83%	1 17%	3 100%		13 72%	5 28%
Pinhal Interior Sul	4 100%		3 100%		2 100%		9 100%	0 0%
Pinhal Litoral	14 88%	2 13%	10 83%	2 17%	6 100%		30 88%	4 12%
Serra da Estrela	4 100%		2 67%	1 33%	1 100%		7 88%	1 13%
Setúbal	27 82%	6 18%	26 96%	1 4%	9 90%	1 10%	62 89%	8 11%
Tâmega	23 100%		20 100%		15 100%		58 100%	0 0%
<b>Total</b>	<b>364 92%</b>	<b>32 8%</b>	<b>325 89%</b>	<b>42 11%</b>	<b>157 89%</b>	<b>19 11%</b>	<b>846 90%</b>	<b>93 10%</b>

The proportion of immediate identification was the same. There was no significant difference in immediate identification according to the time frame.

Note that the operator in Cávado did not provide immediate identification 15 times (54%), and in Cova da Beira 5 times (56%). In Ave, this behaviour took place 11 times (46%).

In contrast, in the NUTS of Alto Alentejo, Alentejo Central and Baixo Alentejo, Algarve, Douro and Pinhal Interior Sul, all the calls (100%) were answered by the respective operators who identified the service.

**Graph 3 – Immediate operator identification**



## 7.2.2 Operator identification mode

Table 11 - Operator Identification mode (842 of 846 calls with immediate identification)

Identification Type	9H00 - 17H00					17H00 - 01H00					01H00 - 09H00				
	112	CODU	emergency	GNR/PSP/Police	Other	112	CODU	emergency	GNR/PSP/Police	Other	112	CODU	emergency	GNR/PSP/Police	Other
Alentejo Central	9 82%		2 18%			5 100%					3 100%				
Alentejo Litoral	4 100%					2 100%					2 67%		1 33%		
Algarve	13 87%		2 13%			11 79%		3 21%			9 82%		2 18%		
Alto Alentejo	5 100%					3 100%					3 100%				
Alto Trás Montes	2 67%			1 33%		7 88%		1 13%			3 75%			1 25%	
Ave	3 100%					7 100%					1 50%			1 50%	
Baixo Alentejo	4 100%					4 100%					2 100%				
Baixo Mondego	10 71%		4 29%			8 62%		5 38%			6 67%		3 33%		
Baixo Vouga	13 100%					13 100%					10 100%				
Beira Interior Norte															
Cávado	1 50%		1 50%			5 83%				1 17%	3 100%				
Cova da Beira			4 100%												
Dão Lafões	8 67%		4 33%			7 70%		3 30%			2 33%		4 67%		
Douro	4 57%		3 43%			1 17%		5 83%			1 33%		2 67%		
Entre Douro e Vouga	10 100%					9 100%					6 100%				
Grande Lisboa	85 100%					59 69%		25 29%		1 1%	20 100%				
Grande Porto	44 100%					43 100%					25 93%	2 7%			
Lezíria Tejo	5 45%		6 55%			1 14%		5 71%		1 14%	1 50%				1 50%
Médio Tejo	4 25%		10 63%	2 13%		1 50%		1 50%		1 50%					
Minho-Lima	12 100%					7 100%					1 100%				
Oeste	7 64%		4 36%			7 50%		7 50%			2 40%		3 60%		
Pinhal Interior Norte	5 100%					2 40%		3 60%			2 67%		1 33%		
Pinhal Interior Sul	4 100%					2 67%		1 33%			1 50%		1 50%		
Pinhal Litoral	9 64%		5 36%			7 70%		3 30%			4 67%		2 33%		
Serra da Estrela	4 100%					1 50%		1 50%			1 100%				
Setúbal	27 100%					25 100%					8 100%				
Tâmega	22 96%		1 4%			20 100%					10 63%		5 31%	1 6%	
<b>Total</b>	<b>314 87%</b>	<b>0 0%</b>	<b>46 13%</b>	<b>3 1%</b>	<b>0 0%</b>	<b>256 79%</b>	<b>0 0%</b>	<b>63 20%</b>	<b>0 0%</b>	<b>4 1%</b>	<b>126 81%</b>	<b>2 1%</b>	<b>24 15%</b>	<b>3 2%</b>	<b>1 1%</b>

Note that any call not answered as "112" is not correct.

**Emergency:**  
 Emergency  
 Medical emergency  
 emergencies  
 Emergency line  
 Emergency number  
 Emergency service  
 National emergency service  
 Rescue Service

**Other:**  
 Good evening  
 Brigade and service  
 Hello  
 Hello yes  
 May I help you

In 83% of cases operators identified themselves correctly by stating the "112" service. But since calls not immediately identified as "112" are incorrect, the results reveal that operators didn't answer the telephone appropriately in 17% of cases. In fact, replacing the "112" identification by saying "Codu" (0.2%), "emergency" (16%), "GNR/PSP/Police" or other means of identification is not what the caller expects to hear.



### **7.3 Type of information requested by the call centre**

A call to 112 requires the operator to solicit or gather the following information in order to decide on appropriate and fast service:

1. Event type identification: nature of event, relevant details and information about the victims;
2. Exact event location;
3. Data about the caller.

The lack of one of these parameters may imply slower and/or inadequate emergency service, and thus calls omitting any of these data must not be regarded as rigorous.

#### **7.3.1 Event type identification**

##### **7.3.1.1 General event type identification**

In the 887 answered calls, we found that in 88% (780) of these the operator asked for information about the event type.

In an analysis by NUTS, we found that in only eight regions did operators request information about the event type in all calls: Alentejo Litoral (10 calls), Algarve (40 calls), Alto Alentejo (11 calls), Lezíria Tejo (23 calls), Médio Tejo (19 calls), Pinhal Interior Norte (18 calls), Pinhal Interior Sul (9 calls) and Serra da Estrela (8 calls).

The NUTS in Douro (16 calls) and Entre Douro e Vouga (28 calls) were those which requested this information least, respectively, 56% (9 calls) and 64% (18 calls).

**Table 12 - Event Type Identification** (887 calls)

NUTS III	Language										Total
	Portuguese		English		French		Spanish		General		
	Event type		Event type		Event type		Event type		Event type		
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Alentejo Central	9	1	3	1		2	2		14	4	18
	90%	10%	75%	25%		100%	100%		78%	22%	100%
Alentejo Litoral	6		2		1		1		10	0	10
	100%		100%		100%		100%		100%	0%	100%
Algarve	24		8		4		4		40	0	40
	100%		100%		100%		100%		100%	0%	100%
Alto Alentejo	7		2		1		1		11	0	11
	100%		100%		100%		100%		100%	0%	100%
Alto Trás Montes	10	2	2	3	2		2		16	5	21
	83%	17%	40%	60%	100%		100%		76%	24%	100%
Ave	18			3		1	1		19	4	23
	100%			100%		100%	100%		83%	17%	100%
Baixo Alentejo	8		1			1			9	1	10
	100%		100%			100%			90%	10%	100%
Baixo Mondego	31		4	2	3	1	1		39	3	42
	100%		67%	33%	75%	25%	100%		93%	7%	100%
Baixo Vouga	22		6	2	1	2	5		34	4	38
	100%		75%	25%	33%	67%	100%		89%	11%	100%
Beira Interior Norte		1							0	1	1
		100%							0%	100%	100%
Cávado	8	1	2	2	1	1		1	11	5	16
	89%	11%	50%	50%	50%	50%		100%	69%	31%	100%
Cova da Beira	17	4							17	4	21
	81%	19%							81%	19%	100%
Dão Lafões	21		2	1	2		2		27	1	28
	100%		67%	33%	100%		100%		96%	4%	100%
Douro	7	2		3		2	2		9	7	16
	78%	22%		100%		100%	100%		56%	44%	100%
Entre Douro e Vouga	12	5	3	3	1	1	2	1	18	10	28
	71%	29%	50%	50%	50%	50%	67%	33%	64%	36%	100%
Grande Lisboa	66	4	25	15	19	1	17	1	127	21	148
	94%	6%	63%	38%	95%	5%	94%	6%	86%	14%	100%
Grande Porto	73	5	19	1	7	2	11		110	8	118
	94%	6%	95%	5%	78%	22%	100%		93%	7%	100%
Lezíria Tejo	21		2						23	0	23
	100%		100%						100%	0%	100%
Médio Tejo	15		2				2		19	0	19
	100%		100%				100%		100%	0%	100%
Minho-Lima	19		1	5	2	1	2		24	6	30
	100%		17%	83%	67%	33%	100%		80%	20%	100%
Oeste	19	4	4	4		1	2		25	9	34
	83%	17%	50%	50%		100%	100%		74%	26%	100%
Pinhal Interior Norte	16				1		1		18	0	18
	100%				100%		100%		100%	0%	100%
Pinhal Interior Sul	6		2		1				9	0	9
	100%		100%		100%				100%	0%	100%
Pinhal Litoral	17	5	3	2	5		1	1	26	8	34
	77%	23%	60%	40%	100%		50%	50%	76%	24%	100%
Serra da Estrela	6		1				1		8	0	8
	100%		100%				100%		100%	0%	100%
Setúbal	43		12	1	7		2		64	1	65
	100%		92%	8%	100%		100%		98%	2%	100%
Tâmega	34		8	4	5	1	6		53	5	58
	100%		67%	33%	83%	17%	100%		91%	9%	100%
Total	535	34	114	52	63	17	68	4	780	107	887
	94%	6%	69%	31%	79%	21%	94%	6%	88%	12%	100%

If we analyse this issue according to the call's language, we may see that language has an influence on whether the operator asks for information on the event type.

It was shown that the event was identified more often ( $\alpha=0.005$ ) whenever the call was in Portuguese (94%) or Spanish (94%) than when the call was in English (69%) or French (79%).

### **7.3.1.2 Detailed event-type identification**

Although four fifths of our calls to 112 were asked about the event type, the same does not apply to operators requesting detailed information about the event.

In fact, generally only in little more than two thirds (69%) of calls did the operator ask for details about the situation for which emergency service was requested.

According to NUTS, Alto Alentejo and in Serra da Estrela were the only areas where all calls (100%) requested detailed event information. In contrast, in Douro (38%), Entre Douro e Vouga (50%) and Ave (52%) there was less concern about details.

As was the case for the general event-type identification (previous point), requests for detailed information were also influenced by the type of call language. Making a 112 call in French (63%) or English (60%) caused operators to ask significantly less about the emergency ( $\alpha=0.05$ ) compared with calls in Portuguese (71%) or Spanish (78%).

**Table 13 - Detailed Event of Identification** (872 calls)

	Language										
	Portuguese		English		French		Spanish		General		Total
	Detailed event		Detailed event		Detailed event		Detailed event		Detailed event		
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
Alentejo Central	7 70%	3 30%	2 50%	2 50%	 100%	2 100%	2 100%	 100%	11 61%	7 39%	18 100%
Alentejo Litoral	3 50%	3 50%	2 100%	 100%	1 100%	 100%	1 100%	 100%	7 70%	3 30%	10 100%
Algarve	17 71%	7 29%	5 63%	3 38%	4 100%	 100%	4 100%	 100%	30 75%	10 25%	40 100%
Alto Alentejo	7 100%	 100%	2 100%	 100%	1 100%	 100%	1 100%	 100%	11 100%	 100%	11 100%
Alto Trás Montes	7 58%	5 42%	2 40%	3 60%	2 100%	 100%	2 100%	 100%	13 62%	8 38%	21 100%
Ave	12 67%	6 33%	 100%	3 100%	 100%	1 100%	 100%	1 100%	12 52%	11 48%	23 100%
Baixo Alentejo	7 88%	1 13%	 100%	1 100%	 100%	1 100%	 100%	 100%	7 70%	3 30%	10 100%
Baixo Mondego	27 87%	4 13%	4 67%	2 33%	3 75%	1 25%	1 100%	 100%	35 83%	7 17%	42 100%
Baixo Vouga	21 95%	1 5%	6 75%	2 25%	1 33%	2 67%	5 100%	 100%	33 87%	5 13%	38 100%
Beira Interior Norte	 100%	1 100%	 100%	 100%	 100%	 100%	 100%	 100%	 100%	1 100%	1 100%
Cávado	14 67%	7 33%	2 50%	2 50%	 100%	2 100%	 100%	1 100%	16 57%	12 43%	28 100%
Cova da Beira	6 67%	3 33%	 100%	 100%	 100%	 100%	 100%	 100%	6 67%	3 33%	9 100%
Dão Lafões	19 90%	2 10%	1 33%	2 67%	2 100%	 100%	2 100%	 100%	24 86%	4 14%	28 100%
Douro	4 44%	5 56%	 100%	3 100%	 100%	2 100%	2 100%	 100%	6 38%	10 63%	16 100%
Entre Douro e Vouga	11 65%	6 35%	1 17%	5 83%	1 50%	1 50%	1 33%	2 67%	14 50%	14 50%	28 100%
Grande Lisboa	35 57%	26 43%	22 55%	18 45%	13 65%	7 35%	15 83%	3 17%	85 61%	54 39%	139 100%
Grande Porto	51 66%	26 34%	15 75%	5 25%	5 56%	4 44%	8 73%	3 27%	79 68%	38 32%	117 100%
Lezíria Tejo	17 81%	4 19%	2 100%	 100%	 100%	 100%	 100%	 100%	19 83%	4 17%	23 100%
Médio Tejo	9 64%	5 36%	2 100%	 100%	 100%	 100%	1 50%	1 50%	12 67%	6 33%	18 100%
Minho-Lima	13 68%	6 32%	1 33%	2 67%	2 67%	1 33%	1 50%	1 50%	17 63%	10 37%	27 100%
Oeste	14 61%	9 39%	4 50%	4 50%	 100%	1 100%	2 100%	 100%	20 59%	14 41%	34 100%
Pinhal Interior Norte	13 81%	3 19%	 100%	 100%	1 100%	 100%	1 100%	 100%	15 83%	3 17%	18 100%
Pinhal Interior Sul	6 100%	 100%	2 100%	 100%	 100%	1 100%	 100%	 100%	8 89%	1 11%	9 100%
Pinhal Litoral	15 68%	7 32%	3 60%	2 40%	5 100%	 100%	 100%	2 100%	23 68%	11 32%	34 100%
Serra da Estrela	6 100%	 100%	1 100%	 100%	 100%	 100%	1 100%	 100%	8 100%	 100%	8 100%
Setúbal	35 81%	8 19%	11 92%	1 8%	6 86%	1 14%	2 100%	 100%	54 84%	10 16%	64 100%
Tâmega	21 62%	13 38%	7 58%	5 42%	3 50%	3 50%	4 67%	2 33%	35 60%	23 40%	58 100%
Total	397 71%	161 29%	97 60%	65 40%	50 63%	30 38%	56 78%	16 22%	600 69%	272 31%	872 100%

### 7.3.1.3 Information about victims

Information about victims is, undoubtedly, the fundamental and most important part in an emergency situation, without overlooking other information such as the description of the situation and location.

We found that generally less than two thirds (61%) of operators answering emergency calls were not concerned with knowing (or referring / questioning) about the victims' condition.

Contrary to the previous parameters, the call language did not significantly influence ( $\alpha=0.005$ ) operator behaviour, although calls in English showed a slightly lower rate (53%) than in the other languages (Portuguese – 61%; French – 62%; and Spanish – 71%).

There were no NUTS units where victim information was asked in all calls. However, there were some contrasting differences. For example, whereas the NUTS of Alentejo Litoral (90%), Pinhal Interior Sul (89%), Pinhal Interior Norte (82%) and Setúbal (81%) had the highest rate of calls in which information was asked about the victims, in Entre Douro e Vouga (25%), Ave (35%), Douro (38%) and Minho - Lima (38%) most calls did not include requests about victim information.

**Table 14 - Information About Victims** (868 calls)

	Language										
	Portuguese		English		French		Spanish		General		
	Victim info.		Victim info.		Victim info.		Victim info.		Victim info.		
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Alentejo Central	8	2	2	2		2	1	1	11	7	18
	80%	20%	50%	50%		100%	50%	50%	61%	39%	100%
Alentejo Litoral	5	1	2		1		1		9	1	10
	83%	17%	100%		100%		100%		90%	10%	100%
Algarve	16	8	7	1	4		4		31	9	40
	67%	33%	88%	13%	100%		100%		78%	23%	100%
Alto Alentejo	4	3	1	1	1		1		7	4	11
	57%	43%	50%	50%	100%		100%		64%	36%	100%
Alto Trás Montes	7	5	1	4	2		2		12	9	21
	58%	42%	20%	80%	100%		100%		57%	43%	100%
Ave	7	11		3	1			1	8	15	23
	39%	61%		100%	100%			100%	35%	65%	100%
Baixo Alentejo	7	1		1		1			7	3	10
	88%	13%		100%		100%			70%	30%	100%
Baixo Mondego	25	6	2	4	2	2	1		30	12	42
	81%	19%	33%	67%	50%	50%	100%		71%	29%	100%
Baixo Vouga	17	5	6	2	1	2	5		29	9	38
	77%	23%	75%	25%	33%	67%	100%		76%	24%	100%
Beira Interior Norte		1								1	1
		100%								100%	100%
Cávado	12	9	2	2		2		1	14	14	28
	57%	43%	50%	50%		100%		100%	50%	50%	100%
Cova da Beira	5	4							5	4	9
	56%	44%							56%	44%	100%
Dão Lafões	13	8	1	2	2		2		18	10	28
	62%	38%	33%	67%	100%		100%		64%	36%	100%
Douro	4	5		3		2	2		6	10	16
	44%	56%		100%		100%	100%		38%	63%	100%
Entre Douro e Vouga	4	13	1	5		2	2	1	7	21	28
	24%	76%	17%	83%		100%	67%	33%	25%	75%	100%
Grande Lisboa	32	28	21	19	15	5	12	6	80	58	138
	53%	47%	53%	48%	75%	25%	67%	33%	58%	42%	100%
Grande Porto	41	37	10	10	5	4	9	2	65	53	118
	53%	47%	50%	50%	56%	44%	82%	18%	55%	45%	100%
Lezíria Tejo	15	6	1	1					16	7	23
	71%	29%	50%	50%					70%	30%	100%
Médio Tejo	11	4	2				1	1	14	5	19
	73%	27%	100%				50%	50%	74%	26%	100%
Minho-Lima	7	11	1	1	1	1		2	9	15	24
	39%	61%	50%	50%	50%	50%		100%	38%	63%	100%
Oeste	12	11	4	4		1	2		18	16	34
	52%	48%	50%	50%		100%	100%		53%	47%	100%
Pinhal Interior Norte	12	3			1		1		14	3	17
	80%	20%			100%		100%		82%	18%	100%
Pinhal Interior Sul	6		2			1			8	1	9
	100%		100%			100%			89%	11%	100%
Pinhal Litoral	12	10	2	3	5			2	19	15	34
	55%	45%	40%	60%	100%			100%	56%	44%	100%
Serra da Estrela	4	2	1				1		6	2	8
	67%	33%	100%				100%		75%	25%	100%
Setúbal	35	7	10	2	4	3	2		51	12	63
	83%	17%	83%	17%	57%	43%	100%		81%	19%	100%
Tâmega	19	15	7	5	4	2	2	4	32	26	58
	56%	44%	58%	42%	67%	33%	33%	67%	55%	45%	100%
Total	340	216	86	75	49	30	51	21	526	342	868
	61%	39%	53%	47%	62%	38%	71%	29%	61%	39%	100%

### 7.3.2 Event Location

Rescuers must know the accident location in order to provide proper and fast emergency services.

Of the 878 calls, in 116 (13%) calls the operator did not ask about the event's location. If we consider that the location was not asked in 73 (63%) of those 116 calls because the operator “hung up” (17) or “indicated another calling number” (56), we are still left with 43 cases in which we may ask how can it be possible for a operator to deploy an emergency service without asking where those emergency teams must go.

As for the other calls, it was generally found that in 69% of calls (606) the operator asked the exact location of the event, whilst in 18% of calls (156) the location was not asked in such great detail.

Note that in the following NUTS operators always asked for the event location in all calls (100%), although in a less detailed manner in some cases: Alentejo Litoral, Alto Alentejo, Beira Interior Norte, Cova da Beira, Médio Tejo and Serra da Estrela.

In contrast, in the NUTS of Douro (50%), Pinhal Litoral (35%), Ave (33%) and Oeste (32%) there was a greater negligence regarding event location.

On the other hand, a crossed analysis with the call language reveals that there was significantly ( $\alpha=0.005$ ) less concern in asking about the location whenever the call was in English (28%) or French (20%) than when made in Portuguese (9%) or Spanish (6%).

### 7.3.3 Caller data identification

**Table 15 - Exact Event Location Identification** (878 calls)

	Idioma																
	Portuguese			English			French			Spanish			General				
	Exact event Location			Exact event location			Exact event location			Exact event location			Exact event location				
	Detail	Inc.	No	Detail	Inc.	No	Detail	Inc.	No	Detail	Inc.	No	Detail	Inc.	No		
Alentejo Central	10 100%			1 25%	2 50%	1 25%			2 100%	2 100%			13 72%	2 11%	3 17%	18 100%	
Alentejo Litoral	3	3		2			1			1			7	3		10	
	50%	50%		100%			100%			100%			70%	30%		100%	
Algarve	16	8		5	3			3	1	2	2		23	16	1	40	
	67%	33%		63%	38%			75%	25%	50%	50%		58%	40%	3%	100%	
Alto Alentejo	5	2		2			1			1			9	2		11	
	71%	29%		100%			100%			100%			82%	18%		100%	
Alto Trás Montes	4	4	4	2		3	2			2			10	4	7	21	
	33%	33%	33%	40%		60%	100%			100%			48%	19%	33%	100%	
Ave	10	8				3		1			1		10	10	3	23	
	56%	44%				100%		100%			100%		43%	43%	13%	100%	
Baixo Alentejo	7		1		1				1				7	1	2	10	
	88%		13%		100%				100%				70%	10%	20%	100%	
Baixo Mondego	29		2	3	1	2	3		1	1			36	1	5	42	
	94%		6%	50%	17%	33%	75%		25%	100%			86%	2%	12%	100%	
Baixo Vouga	19	3		6	1	1	1		2	5			31	4	3	38	
	86%	14%		75%	13%	13%	33%		67%	100%			82%	11%	8%	100%	
Beira Interior Norte	1												1			1	
	100%												100%			100%	
Cávado	9	11	1	2		2	1		1		1		12	12	4	28	
	43%	52%	5%	50%		50%	50%		50%		100%		43%	43%	14%	100%	
Cova da Beira	9												9			9	
	100%												100%			100%	
Dão Lafões	20	1		1	1	1	2			2			25	2	1	28	
	95%	5%		33%	33%	33%	100%			100%			89%	7%	4%	100%	
Douro	4	1	4			3		1	1	1	1		5	3	8	16	
	44%	11%	44%			100%		50%	50%	50%	50%		31%	19%	50%	100%	
Entre Douro e Vouga	6	8	3	1	3	2	1	1		1	2		9	14	5	28	
	35%	47%	18%	17%	50%	33%	50%	50%		33%	67%		32%	50%	18%	100%	
Grande Lisboa	53	5	6	22	4	14	13	5	2	15	2	1	103	16	23	142	
	83%	8%	9%	55%	10%	35%	65%	25%	10%	83%	11%	6%	73%	11%	16%	100%	
Grande Porto	62	8	8	15	4	1	5	3	1	10	1		92	16	10	118	
	79%	10%	10%	75%	20%	5%	56%	33%	11%	91%	9%		78%	14%	8%	100%	
Lezíria Tejo	17	3	1	2									19	3	1	23	
	81%	14%	5%	100%									83%	13%	4%	100%	
Médio Tejo	14	1		2						2			18	1		19	
	93%	7%		100%						100%			95%	5%		100%	
Minho-Lima	13	4	2		1	1	2	1		1	1		16	7	3	26	
	68%	21%	11%		50%	50%	67%	33%		50%	50%		62%	27%	12%	100%	
Oeste	11	6	6	4		4			1	2			17	6	11	34	
	48%	26%	26%	50%		50%			100%	100%			50%	18%	32%	100%	
Pinhal Interior Norte	12	2	2				1			1			14	2	2	18	
	75%	13%	13%				100%			100%			78%	11%	11%	100%	
Pinhal Interior Sul	5	1		2					1				7	1	1	9	
	83%	17%		100%					100%				78%	11%	11%	100%	
Pinhal Litoral	13	2	7	2		3	3	1	1		1	1	18	4	12	34	
	59%	9%	32%	40%		60%	60%	20%	20%		50%	50%	53%	12%	35%	100%	
Serra da Estrela	6			1						1			8			8	
	100%			100%						100%			100%			100%	
Setúbal	30	12	1	10	3	1	7			2			49	15	2	66	
	70%	28%	2%	71%	21%	7%	100%			100%			74%	23%	3%	100%	
Tâmega	23	8	3	7	2	3	4	1	1	4		2	38	11	9	58	
	68%	24%	9%	58%	17%	25%	67%	17%	17%	67%		33%	66%	19%	16%	100%	
Total	411	101	51	92	26	45	47	17	16	56	12	4	606	156	116	878	
	73%	18%	9%	56%	16%	28%	59%	21%	20%	78%	17%	6%	69%	18%	13%	100%	



In most 112 calls – 58% (523 calls) – no information was asked about the caller.

However, we found that this was not always the case in all NUTS. For example, in the regions of Pinhal Interior Sul (89%, 8 calls) and Serra da Estrela (88%, 7 calls) there was a great concern in asking for this data. In contrast, in the NUTS of Beira Interior Norte (100%, one call), Entre Douro e Vouga (94%, 15 calls), Alto Trás Montes (90%, 19 calls) and Algarve (80%, 8 calls) there was little concern in asking information about the caller.

Although calls in English (66%) and French (64%) were more likely not to be asked for caller data, than calls in Portuguese (56%) or Spanish (53%), the analysis reveals that there was no statistical difference between the various languages and therefore language did not affect the operator having or not having asked for caller data.

**Table 16 - Caller Data Identification** (896 calls)

NUTS III	Language										Total
	Portuguese		English		French		Spanish		General		
	Asked for data Yes	No	Asked for data Yes	No	Asked for data Yes	No	Asked for data Yes	No	Asked for data Yes	No	
Alentejo Central	7 70%	3 30%	2 50%	2 50%		2 100%	1 50%	1 50%	10 56%	8 44%	18 100%
Alentejo Litoral	2 33%	4 67%		2 100%		1 100%		1 100%	2 20%	8 80%	10 100%
Algarve	8 33%	16 67%	2 25%	6 75%		4 100%	2 50%	2 50%	12 30%	28 70%	40 100%
Alto Alentejo	4 57%	3 43%	2 100%			1 100%	1 100%		7 64%	4 36%	11 100%
Alto Trás Montes	2 17%	10 83%		5 100%		2 100%		2 100%	2 10%	19 90%	21 100%
Ave	5 28%	13 72%		3 100%	1 100%			1 100%	6 26%	17 74%	23 100%
Baixo Alentejo	5 63%	3 38%		1 100%		1 100%			5 50%	5 50%	10 100%
Baixo Mondego	20 65%	11 35%	3 50%	3 50%	2 50%	2 50%	1 100%		26 62%	16 38%	42 100%
Baixo Vouga	18 82%	4 18%	6 75%	2 25%	1 33%	2 67%	3 60%	2 40%	28 74%	10 26%	38 100%
Beira Interior Norte		1 100%								1 100%	1 100%
Cávado	6 29%	15 71%	1 25%	3 75%		2 100%		1 100%	7 25%	21 75%	28 100%
Cova da Beira	3 33%	6 67%							3 33%	6 67%	9 100%
Dão Lafões	12 57%	9 43%	1 33%	2 67%	2 100%		1 50%	1 50%	16 57%	12 43%	28 100%
Douro	1 11%	8 89%		3 100%		2 100%		2 100%	1 6%	15 94%	16 100%
Entre Douro e Vouga	10 59%	7 41%	2 33%	4 67%	1 50%	1 50%	3 100%		16 57%	12 43%	28 100%
Grande Lisboa	28 34%	55 66%	10 25%	30 75%	6 30%	14 70%	5 28%	13 72%	49 30%	112 70%	161 100%
Grande Porto	22 28%	56 72%	5 25%	15 75%	4 44%	5 56%	8 73%	3 27%	39 33%	79 67%	118 100%
Lezíria Tejo	10 48%	11 52%	1 50%	1 50%					11 48%	12 52%	23 100%
Médio Tejo	8 53%	7 47%	1 50%	1 50%			1 50%	1 50%	10 53%	9 47%	19 100%
Minho-Lima	5 28%	13 72%		2 100%		3 100%	1 50%	1 50%	6 24%	19 76%	25 100%
Oeste	4 17%	19 83%	3 38%	5 63%		1 100%	2 100%		9 26%	25 74%	34 100%
Pinhal Interior Norte	11 69%	5 31%			1 100%		1 100%		13 72%	5 28%	18 100%
Pinhal Interior Sul	5 83%	1 17%	2 100%		1 100%				8 89%	1 11%	9 100%
Pinhal Litoral	11 50%	11 50%	1 20%	4 80%	3 60%	2 40%		2 100%	15 44%	19 56%	34 100%
Serra da Estrela	5 83%	1 17%	1 100%				1 100%		7 88%	1 13%	8 100%
Setúbal	27 63%	16 37%	10 71%	4 29%	5 71%	2 29%	1 50%	1 50%	43 65%	23 35%	66 100%
Tâmega	15 44%	19 56%	3 25%	9 75%	2 33%	4 67%	2 33%	4 67%	22 38%	36 62%	58 100%
Total	254 44%	327 56%	56 34%	107 66%	29 36%	51 64%	34 47%	38 53%	373 42%	523 58%	896 100%

### 7.3.3.1 Requested caller information

When 112 operators requested caller data, they essentially wanted to know the telephone number (90%). The name was asked in 22% of calls. Much more rarely the caller was asked about the means of contact (4%) but, sometimes, callers were also asked about their relationship to the victim (1%).

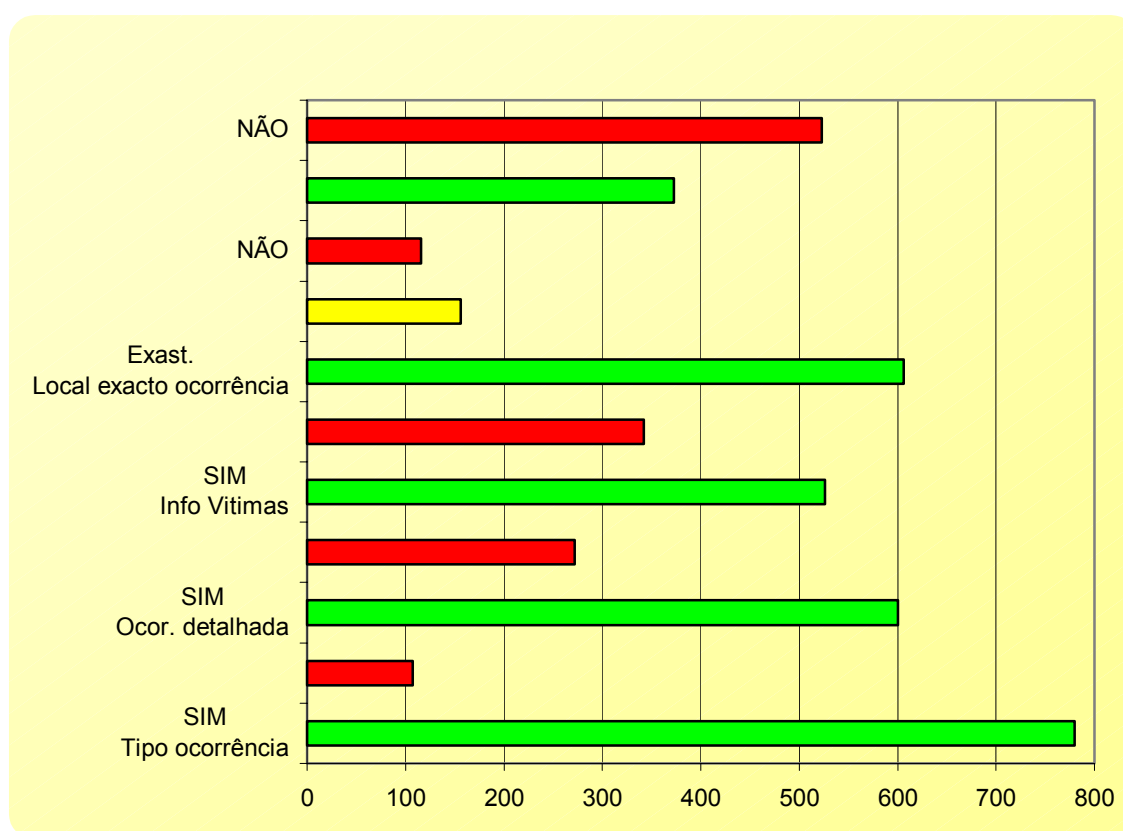
**Table 17 - Requested Data** (373 calls in which caller data was requested)

Others = relationship to the victim

	Language																						
	Portuguese					English					French			Spanish			General						
	Personal Data				Total Calls	Personal Data				Total Calls	Personal Data		Total Calls	Personal Data		Total Calls	Personal Data				Total Calls		
	Name	Phone	Contact	Others		Name	Phone	Contact	Others		Name	Phone		Name	Phone		Name	Phone	Contact	Others			
Alentejo Central	5	7			7	1	2			2				1	1	1	7	10			10		
	71%	100%				50%	100%							100%	100%		70%	100%					
Alentejo Litoral		1	1		2													1	1		2		
		50%	50%															50%	50%				
Algarve	1	7			7		2			2				1	2	2	2	11			11		
	14%	100%					100%							50%	100%		18%	100%					
Alto Alentejo	3	3			4	1	2			2					1	1	4	6			7		
	75%	75%				50%	100%								100%		57%	86%					
Alto Trás Montes		2			2													2			2		
		100%																100%					
Ave	1	4			5						1	1					1	5			6		
	20%	80%									100%						17%	83%					
Baixo Alentejo	4	4	1		5												4	4	1		5		
	80%	80%	20%														80%	80%	20%				
Baixo Mondego		20			20		3			3	2	2			1	1		26			26		
		100%					100%				100%				100%			100%					
Baixo Vouga	1	18			18		5	1		6	1	1	2	3	3	3	3	27	1		28		
	6%	100%					83%	17%			100%			67%	100%		11%	96%	4%				
Cávado		7			7		1			1								8			8		
		100%					100%											100%					
Cova da Beira		2			2													2			2		
		100%																100%					
Dão Lafões	1	11			12		1			1	2	2			1	1	1	15			16		
	8%	92%					100%				100%				100%		6%	94%					
Douro	1	1			1												1	1			1		
	100%	100%															100%	100%					
Entre Douro e Vouga		10			10		2			2	1	1			3	3		16			16		
		100%					100%				100%				100%			100%					
Grande Lisboa	12	18	1		26		7	1	2	10	4	5	6	3	5	6	19	35	2	2	48		
	46%	69%	4%				70%	10%	20%		67%	83%			50%	83%	40%	73%	4%	4%			
Grande Porto	1	22			22		5			5		4	4			8	1	39			39		
	5%	100%					100%					100%			100%		3%	100%					
Lezíria Tejo	10	6	1		11		2			2							10	8	1		13		
	91%	55%	9%				100%										77%	62%	8%				
Médio Tejo	5	8	1		8		1			1				1	1	1	6	10	1		10		
	63%	100%	13%				100%							100%	100%		60%	100%	10%				
Minho-Lima	2	6			6		1			1							2	7			7		
	33%	100%					100%										29%	100%					
Oeste		4			4		3			3					2	2		9			9		
		100%					100%								100%			100%					
Pinhal Interior Norte	1	10	1		11						1	1			1	1	1	12	1		13		
	9%	91%	9%								100%				100%		8%	92%	8%				
Pinhal Interior Sul	4	2			5	2	2	1		2	1		1				7	4	1		8		
	80%	40%				100%	100%	50%			100%						88%	50%	13%				
Pinhal Litoral	4	11			11	1	1			1	1	3	3				6	15			15		
	36%	100%				100%	100%				33%	100%					40%	100%					
Serra da Estrela		5			5		1			1					1	1		7			7		
		100%					100%								100%			100%					
Setúbal	5	21	5	1	26	1	9			10	2	5	5		1	1	8	36	5	1	42		
	19%	81%	19%	4%		10%	90%				40%	100%			100%		19%	86%	12%	2%			
Tâmega		12	2	1	15		3			3		2	2		2	2		19	2	1	22		
		80%	13%	7%			100%					100%			100%			86%	9%	5%			
Total	61	222	13	2	252	6	53	3	2	58	8	27	29	8	33	34	83	335	16	4	373		
	24%	88%	5%	1%		10%	91%	5%	3%		28%	93%		24%	97%		22%	90%	4%	1%			

Although there was no significant difference ( $\alpha=0.05$ ) between the language used and the information that was requested, there's a greater tendency not to ask the name when English was used (10%) than when using any of the other languages (Portuguese – 24%; French – 28%; Spanish – 24%).

**Graph 4 – Type of information requested by the 112 call centre**



## 7.4 Evaluating the call centre service

Until now we have analysed the individual parameters of a proper 112 call. In this point we will evaluate the instructions given to the caller and how those instructions were given. That was what we essentially aimed to determine whenever a call was answered, particularly in relation to the operator's behaviour.

#### **7.4.1 General call evaluation**

Generally, in a sample of 910 calls, we may conclude that in most cases the operator was friendly/polite (58%) and attempted to transmit a sense of calm (57%). At times they even indicated procedures (16%) and rarely tried to dominate the conversation (6%).

In 36% of cases they tried to transfer or transferred the call to another operator and in 12% of cases indicated another telephone number to notify the event.

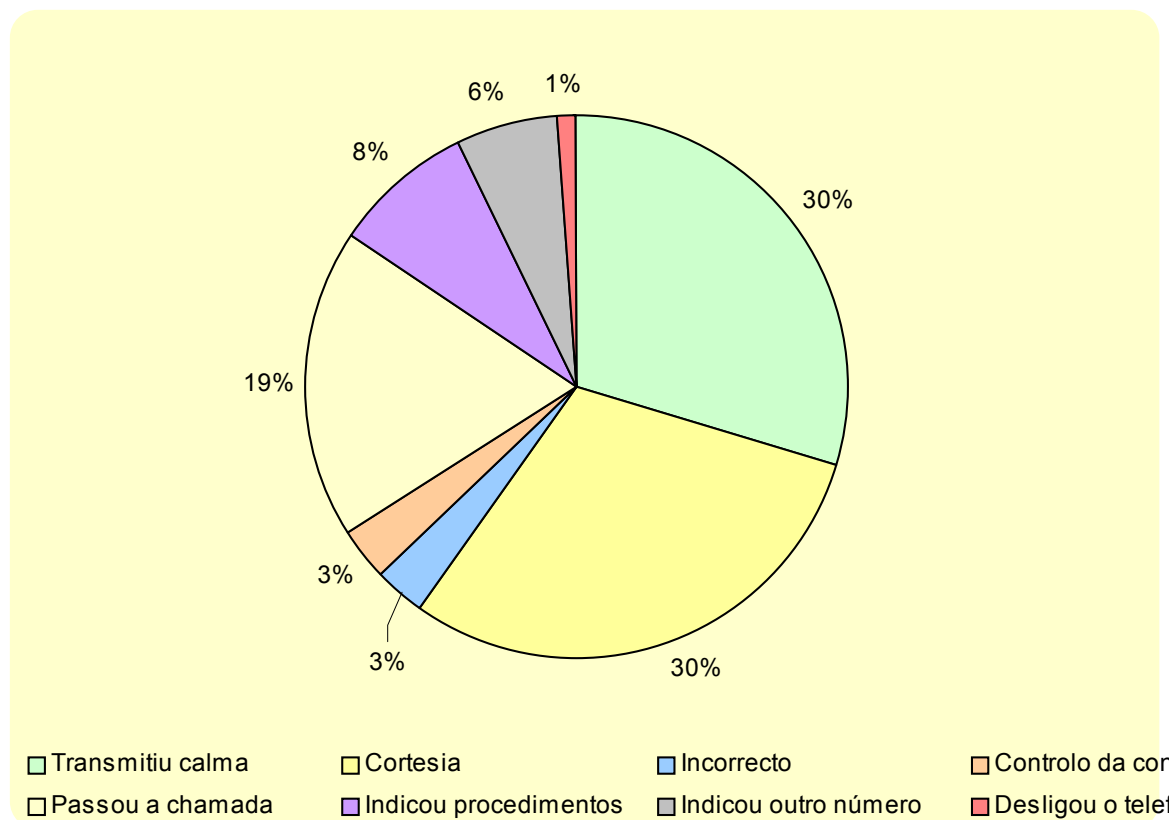
As negative behaviour, operators were rude (6%) and, at times, even hung up (2%). Operators hung up only in the following NUTS: 4 times in Ave, 3 times in Baixo Mondego, 2 times in Greater Lisbon and Oeste, and once each in Alentejo Central, Alentejo Litoral, Grande Porto, Setúbal and Tâmega.

**Table 18 - Call Evaluation** (910 calls)

General (910 calls)

NUTS III	Call Evaluation - General								Total
	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	
Alentejo Central	3 16%	9 47%	4 21%	1 5%	8 42%		1 5%	1 5%	19 100%
Alentejo Litoral	8 80%	6 60%			7 70%	3 30%	1 10%	1 10%	10 100%
Algarve	28 70%	21 53%		1 3%	30 75%	9 23%	2 5%		40 100%
Alto Alentejo	10 91%			1 9%	7 64%				11 100%
Alto Trás Montes	10 48%	12 57%	4 19%		2 10%		6 29%		21 100%
Ave	13 57%	14 61%	4 17%	2 9%	6 26%		5 22%	4 17%	23 100%
Baixo Alentejo	7 70%	6 60%	1 10%		9 90%			1 10%	10 100%
Baixo Mondego	24 57%	31 74%	2 5%	3 7%	5 12%	16 38%	3 7%	3 7%	42 100%
Baixo Vouga	25 66%	28 74%	3 8%	3 8%	6 16%	14 37%	2 5%		38 100%
Beira Interior Norte	1 100%	1 100%			1 100%				1 100%
Cávado	13 48%	19 70%	5 19%	5 19%	8 30%		7 26%		27 100%
Cova da Beira	9 100%	6 67%			4 44%		1 11%		9 100%
Dão Lafões	24 86%	26 93%	1 4%		1 4%	12 43%	3 11%		28 100%
Douro	8 57%	9 64%			4 29%	1 7%	3 21%		14 100%
Entre Douro e Vouga	2 7%	14 50%	1 4%	1 4%		1 4%	9 32%		28 100%
Grande Lisboa	67 39%	89 52%	7 4%	1 1%	59 34%	6 3%	4 2%	2 1%	172 100%
Grande Porto	86 74%	76 65%	7 6%	6 5%	49 42%	21 18%	11 9%	1 1%	117 100%
Lezíria Tejo	19 83%	10 43%		9 39%	3 13%	1 4%	1 4%		23 100%
Médio Tejo	14 74%	4 21%		5 26%					19 100%
Minho-Lima	18 67%	11 41%	2 7%	2 7%	4 15%	3 11%	5 19%	1 4%	27 100%
Oeste	21 60%	18 51%	1 3%	2 6%	18 51%	12 34%	12 34%	2 6%	35 100%
Pinhal Interior Norte	8 44%	14 78%		3 17%	1 6%	4 22%	3 17%		18 100%
Pinhal Interior Sul	9 100%	9 100%			5 56%				9 100%
Pinhal Litoral	20 59%	16 47%			21 62%	10 29%	11 32%		34 100%
Serra da Estrela	8 100%	6 75%		2 25%	3 38%	3 38%			8 100%
Setúbal	27 39%	29 42%	6 9%	6 9%	40 58%	22 32%	6 9%	1 1%	69 100%
Tâmega	37 64%	45 78%	3 5%	1 2%	25 43%	10 17%	13 22%	1 2%	58 100%
<b>Total</b>	<b>519 57%</b>	<b>529 58%</b>	<b>51 6%</b>	<b>54 6%</b>	<b>326 36%</b>	<b>148 16%</b>	<b>109 12%</b>	<b>18 2%</b>	<b>910 100%</b>

**Graph 5 – General call evaluation**



#### **7.4.2 Call evaluation per language**

##### **a) Friendliness**

Less than half of calls in French (49%) and English (40%) were answered in a friendly manner, which differs significantly ( $\alpha=0.005$ ) from when calls were made in Portuguese (65%) or Spanish (54%).

##### **b) Rudeness**

Similarly, calls made in English (17%) and French (16%) were significantly ( $\alpha=0.005$ ) ruder (including personal insults and use of inappropriate, vulgar or swear words) than calls in Portuguese (2%) and Spanish (1%).

##### **c) Call transfer**

Calls in English (49%) and French (47%) were significantly ( $\alpha=0.005$ ) transferred more to other persons than calls in Portuguese (30%) or Spanish (38%). However, we must not interpret this aspect as totally negative, since most times the intention was to provide better operator service when the first operator was not fluent in that language or, in other cases, when someone else was present that could provide better service advice (for example, putting the physician on the telephone to indicated procedures). However, it reveals that most 112 operators are not prepared to handle the call in a foreign language.



## d) Hanging up

Although this serious behaviour was not very frequent, the fact is that it happened, and is significantly more likely to happen ( $\alpha=0.005$ ) in calls in English (7%) and French (5%) than in calls in Portuguese (0.5%) and Spanish (1%).

Table 19 - Language (903 calls)

	Language																												
	Portuguese								English								French												
	Call Evaluation								Call Evaluation								Call Evaluation												
	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures			Indicated Another Number	Hang Up	Total
NUTS III																													
Alentejo Central	2 20%	6 60%	1 10%	1 10%	4 40%				10		2 50%	1 25%		3 75%				4			2 100%						1 50%	2 50%	1 50%
Alentejo Litoral	6 100%	3 50%			3 50%	2 33%	1 17%		6	1 50%	1 50%			2 100%				2		1 100%			1 100%	1 100%			1 100%	1 100%	
Algarve	20 83%	16 67%		1 4%	15 63%	6 25%	2 8%		24	5 63%	4 50%			8 100%	1 13%			8	1 25%				4 100%	2 50%			4 50%	2 25%	
Alto Alentejo	6 86%			1 14%	3 43%				7	2 100%				2 100%				2					1 100%				1 100%		
Alto Trás Montes	5 42%	7 58%	1 8%		1 8%		6 50%		12	1 20%	2 40%	3 60%						5	2 100%	1 50%							2 100%	2 100%	
Ave	13 72%	14 78%	1 6%	1 6%	5 28%		3 17%	2 11%	18			2 67%	1 33%			1 33%	2 67%	3			1 100%						1 100%		
Baixo Alentejo	7 88%	6 75%			8 100%				8					1 100%				1			1 100%					1 100%	1 100%		
Baixo Mondego	17 55%	25 81%	1 3%	2 6%	2 6%	10 32%	3 10%		31	3 50%	2 33%		1 17%	1 17%	2 33%		2 33%	6	3 75%	3 75%	1 25%		2 50%	3 75%		25%	4 100%	1 100%	
Baixo Vouga	15 68%	15 68%	1 5%	2 9%	4 18%	8 36%	2 9%		22	6 75%	7 88%			2 25%	4 50%			8	1 33%	2 67%	2 67%			1 33%		3 60%	3 80%	4 80%	
Beira Interior Norte	1 100%	1 100%			1 100%				1																				
Cávado	10 50%	16 80%	1 5%	4 20%	8 40%		6 30%		20	2 50%	2 50%	2 50%						4	1 50%	1 50%	1 50%	1 50%					2		
Cova da Beira	9 100%	6 67%			4 44%		1 11%		9																				
Dão Lafões	19 90%	21 100%				9 43%	2 10%		21	1 33%	1 33%	1 33%		1 33%	1 33%	1 33%		3	2 100%	2 100%				2 100%			2 100%	2 100%	
Douro	6 67%	6 67%			2 22%	1 11%	3 33%		9					2 100%				2	1 100%	1 100%						1 50%	1 100%	2 67%	
Entre Douro e Vouga	1 6%	10 59%					6 35%		17	1 17%		1 17%			1 17%	2 33%		6		2 100%						2 100%	2 67%		
Grande Lisboa	22 21%	77 72%	2 2%	1 1%	22 21%	3 3%	4 4%	1 1%	107	21 17%	2 7%	4 14%		19 68%				28	15 75%	6 30%	1 5%		12 60%	3 15%			20 53%	9 24%	
Grande Porto	59 77%	50 65%	2 3%	4 5%	30 39%	19 25%	9 12%		77	12 60%	11 55%	3 15%	1 5%	9 45%	2 10%	1 5%	1 5%	20	6 67%	6 67%	2 22%		6 67%		1 11%	9 82%	9 82%		
Lezíria Tejo	17 81%	9 43%		8 38%	2 10%	1 5%	1 5%		21	2 100%	1 50%			1 50%	1 50%			2											
Médio Tejo	10 67%	2 13%		5 33%					15	2 100%	1 50%							2									2 100%	1 50%	
Minho-Lima	14 74%	9 47%		1 5%	4 21%	2 11%	4 21%		19	1 33%		2 67%					1	3	2 67%	2 67%		1 33%				3 50%	1 100%	2 100%	
Oeste	14 61%	13 57%		2 9%	11 48%	8 35%	10 43%		23	4 50%	4 50%	1 13%		5 63%	1 13%	1 13%	2 25%	8							1 100%		1 100%	2 100%	
Pinhal Interior Norte	7 44%	12 75%		3 19%		4 13%	2 19%		16										1 100%	1 100%			1 100%	1 100%			1 100%	1 100%	
Pinhal Interior Sul	6 100%	6 100%			3 50%				6	2 100%	2 100%			2 100%				2	1 100%	1 100%							1 100%		
Pinhal Litoral	14 64%	12 55%			13 59%	7 32%	7 32%		22	2 40%	2 40%			2 40%	1 20%	3 60%		5	4 80%	2 40%			5 100%	2 40%			5 100%		
Serra da Estrela	6 100%	4 67%		1 17%	2 33%	2 33%			6	1 100%	1 100%		1 100%		1 100%			1									1 100%	1 100%	
Setúbal	18 63%	16 38%		2 5%	21 50%	12 29%	6 14%		42	4 29%	9 64%	4 29%	2 14%	9 43%	2 29%		1	14	2 29%	5 43%	4 14%	1 14%	5 71%	3 43%			7 100%	2 54%	
Tâmega	23 68%	29 85%		1 3%	15 44%	5 15%	9 26%		34	7 64%	6 55%	2 18%		5 45%	2 18%	1 9%		11	2 33%	4 67%	1 17%		1 17%	1 17%	1 17%	6 83%	5 63%	6 54%	
Total	347 58%	391 65%	10 2%	40 7%	183 30%	97 16%	88 15%	3 0%	603	80 53%	60 40%	26 17%	8 5%	74 49%	20 13%	10 7%	10 7%	150	45 57%	39 49%	13 16%	3 4%	37 47%	19 24%	3 4%	4 5%	79 63%	45 54%	38 48%

Other behaviours did not reveal significant differences between the four languages.

### **7.4.3 Call evaluation according to the time frame**

#### **a) Friendliness**

Calls from 17:00 to 1:00 h (51%) were answered in a significantly ( $\alpha=0.005$ ) less friendly manner than calls during the other time frames (60% and 69%).

#### **b) Call transfer**

Calls made from 9:00 to 17:00 (33%) and from 17:00 to 1:00 h (42%) were transferred significantly ( $\alpha=0.005$ ) more to another operator than those made from 1:00 to 9:00 h (29%).

There were no significant differences in the other behaviours in the different time frames.

Table 20 - Time Frame (909 calls)

NUTS III	Time Frame																											
	09H00 : 17H00								17H00 : 01H00								01H00 : 09H00											
	Call Evaluation								Call Evaluation								Call Evaluation											
	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	
Alentejo Central	3 27%	3 27%	3 27%	1 9%	3 27%		1 9%		11		3 60%	1 20%		2 40%			1 20%	5		3 100%				3 100%				3
Alentejo Litoral	4 100%	1 25%			4 100%	1 25%			4	2 67%	2 67%			2 67%	2 67%			3	2 67%	3 100%				1 33%		1 33%	3	
Algarve	13 87%	12 80%			7 47%	2 13%	2 13%		15	6 43%	6 43%		1 7%	12 86%	3 21%			14	9 82%	3 27%			11 100%	4 36%			11	
Alto Alentejo	4 80%			1 20%	1 20%				5	3 100%								3	3 100%				3 100%				3	
Alto Trás Montes	1 17%	3 50%	2 33%				3 50%		6	7 70%	6 60%	1 10%		2 20%		2 20%		10	2 40%	3 60%	1 20%				1 20%		5	
Ave	2 67%	3 100%			2 67%				3	8 57%	8 57%	2 14%	1 7%	3 21%		5 36%	2 14%	14	3 50%	3 50%	2 33%	1 17%	1 17%			2 33%	6	
Baixo Alentejo	2 50%	1 25%	1 25%		3 75%			1 25%	4	3 75%	3 75%			4 100%				4	2 100%	2 100%			2 100%				2	
Baixo Mondego	8 50%	12 75%		2 13%	2 13%	6 38%	2 13%		16	8 50%	12 75%	2 13%	1 6%	5 6%	5 31%		2	16	8 80%	7 70%			2 20%	5 50%	1 10%	1 10%	10	
Baixo Vouga	8 53%	9 60%	1 7%	3 20%	4 27%	5 33%	2 13%		15	10 77%	11 85%			2 15%	6 46%			13	7 70%	8 80%	2 20%			3 30%			10	
Beira Interior Norte										1 100%	1 100%			1 100%				1										
Cávado	2 67%	3 100%		1 33%	1 33%		1 33%		3	6 40%	9 60%	3 20%	2 13%	5 33%		5 33%		15	5 56%	7 78%	2 22%	2 22%	2 22%		1 11%		9	
Cova da Beira	7 100%	5 71%			3 43%		1 14%		7	2 100%	1 50%			1 50%				2										
Dão Lafões	11 86%	13 100%				4 31%	2 15%		13	8 80%	8 80%	1 10%		1 10%	4 40%	1 10%		10	5 100%	5 100%				4 80%			5	
Douro	5 71%	5 71%			2 29%	1 14%	2 29%		7	2 40%	3 60%			1 20%	1 20%			5	1 50%	1 50%			1 50%				2	
Entre Douro e Vouga		6 60%					4 40%		10	1 10%	4 40%	1 10%	1 10%			3 30%		10	1 13%	4 50%				1 13%	2 25%		8	
Grande Lisboa	15 19%	57 72%	1 1%		16 20%	2 3%	2 3%	1 1%	79	44 58%	28 37%	5 7%		39 51%	4 5%	1 1%	1 1%	76	8 47%	4 24%	1 6%	1 6%	4 24%		1 6%		17	
Grande Porto	30 66%	28 61%	4 9%	2 4%	24 52%	8 17%	7 15%		46	34 79%	22 51%	2 5%	1 2%	19 44%	9 21%	4 9%	1 2%	43	22 79%	26 93%	1 4%	3 11%	6 21%	4 14%		28		
Lezíria Tejo	10 91%	5 45%		5 45%	1 9%				11	8 80%	3 30%		3 30%	2 20%	1 10%	1 10%		10	1 50%	2 100%							2	
Médio Tejo	12 75%	3 19%		4 25%					16	2 67%	1 33%		1 33%					3										
Minho-Lima	10 71%	6 43%	1 7%	1 7%	3 21%	1 7%	2 14%	1 7%	14	6 55%	3 27%	1 9%		1 9%	2 18%	3 27%		11	2 100%	2 100%		1 50%				2		
Oeste	7 58%	7 58%		2 17%	6 50%	6 50%	6 50%		12	9 60%	6 40%	1 7%		8 53%	3 20%	3 20%	2 13%	15	5 63%	5 63%			4 50%	3 38%	3 38%		8	
Pinhal Interior Norte	4 44%	5 56%		3 33%	2 22%	3 33%			9	3 50%	6 100%			1 17%	2 33%			6	1 33%	3 100%							3	
Pinhal Interior Sul	4 100%	4 100%			2 50%				4	3 100%	3 100%			3 100%				3	2 100%	2 100%							2	
Pinhal Litoral	8 50%	9 56%			9 56%	5 31%	6 38%		16	9 75%	5 42%			9 75%	4 33%	2 17%		12	3 50%	2 33%			3 50%	1 17%	3 50%		6	
Serra da Estrela	4 100%	3 75%			2 50%				4	3 100%	3 100%		2 67%	1 33%	3 100%			3	1 100%								1	
Satúbal	10 31%	11 34%	4 13%	2 6%	18 56%	9 28%	5 16%	1 3%	32	14 52%	10 37%	2 7%	3 11%	18 67%	9 33%	1 4%		27	3 30%	8 80%		1 10%	4 40%	4 40%			10	
Tâmega	14 61%	17 74%	1 4%		14 61%	2 9%	5 22%		23	11 58%	13 68%	2 11%	1 5%	9 47%	3 16%	3 16%		19	12 80%	15 100%			2 13%	5 33%	4 27%	1 7%	15	
Total	198 51%	231 60%	18 5%	27 7%	127 33%	54 14%	56 15%	4 1%	385	213 60%	180 51%	24 7%	17 5%	150 42%	60 17%	35 10%	9 3%	353	108 63%	118 69%	9 5%	10 6%	49 29%	34 20%	17 10%	5 3%	171	

#### **7.4.4 Call evaluation per scenario**

##### **a) Transmit calm**

Calls based on scenarios<sup>1</sup> 3 (65%), 4 (66%) and 5 (64%) require the operator to transmit calm significantly ( $\alpha=0.005$ ) more than in calls made under scenarios 1 (44%) and 2 (43%).

##### **b) Friendliness**

Calls based on scenarios 1 (51%) and 2 (52%) were treated with significantly ( $\alpha=0.05$ ) less friendliness than calls based on the other scenarios (from 60% to 63%).

##### **c) Indicate procedures**

In calls based on scenarios 3 (21%), 4 (22%) and especially 5 (31%) the operator indicated procedures on how to act significantly ( $\alpha=0.005$ ) more than in calls based on scenarios 1 (3%) and 2 (4%).

##### **d) Indicated another number**

In calls based on scenarios 1 (29%) and 2 (23%) the operator indicated another number (normally 117) significantly ( $\alpha=0.005$ ) more than in calls based on the other scenarios (from 2% to 6%).

The other behaviours do not reveal significant differences regarding the scenarios under which they are handled.

---

<sup>1</sup> See. Pg. 11, 12

Table 21 - Scenario (907 calls)

NUTS III	Cenário																												
	Scenario 1								Scenario 2								Scenario 3												
	Call Evaluation								Call Evaluation								Call Evaluation												
	Transmitted calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Findly	Rude	Dominated the Conversation	Transferred the Call	Indicated Procedures	Indicated Another Number	Hang Up	Total	Transmitted Calm	Friendly
Alentejo Central		2	1		2			3		2	1	1					3	1	1	2		2				1	5	2	3
Alentejo Litoral	1	1						1	1				1				1	3	3				3		1	1	4	2	2
Algarve	5	4			4		2	6	6	5			4				8	8	5			8	3			10	5	5	
Alto Alentejo	1							1	1				1				1	3			1	2				4	4		
Alto Trás Montes	1	1	1		1		3	4	2	2	1					1	4	1	4	1		25%	50%				5	5	4
Ave		1	2				2	3	4	5			3			1	1	7	4	4	1		2			5	2	1	
Baixo Alentejo					1			1		1			1				1	4	2			4				4	2	2	
Baixo Mondego	3	3		1		1	3	6	4	7			1				8	5	9	1	1	1	7		1	11	8	9	
Baixo Vouga	4	5	1		2		1	7	4	5		1	3				7	5	5	1		1	5			8	4	5	
Beira Interior Norte																		1	1			100%				1			
Cávado	1	2	1		1		2	4	5	4		2	1		2		6	4	6	1	1	1	3			7	1	3	
Cova da Beira	1	1			1			1	2	1			1				2	3	2						1	3	2	1	
Dão Lafões	2	3	1				2	4	4	5			1		1		6	7	7				4			7	7	7	
Douro	1	1			1		1	2	1	1			2	1	1		3	3	3							3	2	3	
Entre Douro e Vouga							5	5		4		1				1	6	1	6						1	8		3	
Grande Lisboa	10	19	2		8			31	5	19	1		5	2	4		27	18	12	2	1	15	1		1	34	22	16	
Grande Porto	14	15			9		7	24	19	11	1	2	5	2	3		25	14	16	3	1	12	6		1	22	19	20	
Lezíria Tejo	1	1		2	1			2	7	2		1			1		7	2	2		1					3	4	3	
Médio Tejo	3	1		1				4	2	1		1					3	3	1		2					4	3		
Minho-Lima	3	1			1		1	4	1	1	2		1	1	2	1	4	8	5		2					10	3	2	
Oeste	2	1		1	3	1	4	6	2	4	1		2		8	2	12	9	8		1	8	7			9	5	2	
Pinhal Interior Norte	1	1					2	3		1		1				1	3	3	5				1			5	3	5	
Pinhal Interior Sul	1	1			1			1	1	1			1				1	4	4		3					4	2	2	
Pinhal Litoral	4	4			4	1	4	8	3	3			3	1	7		11	7	3			7	4			7	1	1	
Serra da Estrela	1							1										4	3		1	1	1			4	2	2	
Setúbal	3	5	1		8		2	11	3	3	2	1	11		3		16	4	8	3	3	8	6		1	15	11	7	
Tâmega	4	5	2		4	1	4	10	2	7	1		5		7		11	13	14		1	8		1	1	17	8	9	
Total	67	78	12	5	52	4	45	153	79	95	10	11	52	7	43	4	183	142	139	15	16	89	45	4	7	219	129	117	
	44%	51%	8%	3%	34%	3%	29%	2%		43%	52%	5%	6%	28%	4%	23%	2%		65%	63%	7%	7%	41%	21%	2%	3%	66%	60%	

## 7.5. Emergency service arrival time

A call is made to an emergency service to obtain assistance as quickly as possible. Assistance is provided only when the emergency services arrive on location, and therefore quick arrival is fundamental.

After completing the call, on average emergency services take about 10 minutes to arrive on location.

**Table 22 - Emergency Service Arrival Time**

NUTS III	Average Arrival Time (minutes)			
	Emergency Services			General Average
	Ambulance	Firefighters	Police Forces	
Alentejo Central	6	7	8	7
Alentejo Litoral	9	9	8	8
Algarve	8	9	13	10
Alto Alentejo	11	8	13	11
Alto Trás Montes	8	4	8	6
Ave	7	12	15	11
Baixo Alentejo	9	10	10	10
Baixo Mondego	7	7	12	9
Baixo Vouga	6	4	6	5
Beira Interior Norte	6			
Cávado	9	13	13	12
Cova da Beira	7	9	5	7
Dão Lafões	10	7	12	10
Douro	7		8	
Entre Douro e Vouga	6		10	
Grande Lisboa	11	9	12	11
Grande Porto	14	10	12	12
Lezíria Tejo	10	6	8	8
Médio Tejo	7	7	8	7
Minho-Lima	10	9	13	11
Oeste	9	10	10	9
Pinhal Interior Norte	8	14	11	11
Pinhal Interior Sul	9	9	12	10
Pinhal Litoral	11	11	14	12
Serra da Estrela	11	11	13	12
Setúbal	12	11	9	11
Tâmega	10	11	14	12
<b>General Average</b>	<b>10</b>	<b>9</b>	<b>11</b>	<b>10</b>

However, note that ambulances (10 minutes) and firefighters<sup>1</sup> (9 minutes) were significantly ( $\alpha=0.05$ ) faster than police forces<sup>2</sup> (11 minutes). There was no significant difference between ambulances and firefighters and thus we may conclude that they take about the same time.

### 7.5.1 Emergency service arrival time vs. Scenario

**Table 23 - Scenario**

Scenario		Arrival Time (minutes)		
		Ambulance	Firefighters	Police Forces
<b>Scenario 1</b>	<b>Average</b>	<b>7 min.</b>	<b>8 min.</b>	<b>9 min.</b>
	Cases	23	85	51
	Stand. Time	4 min.	5 min.	6 min.
	Minimum	2 min.	1 min.	2 min.
	Maximum	17 min.	30 min.	29 min.
<b>Scenario 2</b>	<b>Average</b>	<b>9 min.</b>	<b>14 min.</b>	<b>12 min.</b>
	Cases	9	3	106
	Stand. Time	5 min.	8 min.	10 min.
	Minimum	3 min.	6 min.	1 min.
	Maximum	17 min.	21 min.	70 min.
<b>Scenario 3</b>	<b>Average</b>	<b>9 min.</b>	<b>10 min.</b>	<b>12 min.</b>
	Cases	190	77	94
	Stand. Time	5 min.	6 min.	7 min.
	Minimum	2 min.	1 min.	2 min.
	Maximum	31 min.	50 min.	34 min.
<b>Scenario 4</b>	<b>Average</b>	<b>10 min.</b>	<b>11 min.</b>	<b>13 min.</b>
	Cases	170	11	9
	Stand. Time	6 min.	6 min.	6 min.
	Minimum	1 min.	5 min.	5 min.
	Maximum	38 min.	26 min.	24 min.
<b>Scenario 5</b>	<b>Average</b>	<b>11 min.</b>	<b>14 min.</b>	<b>12 min.</b>
	Cases	136	5	1
	Stand. Time	8 min.	6 min.	
	Minimum	1 min.	8 min.	12 min.
	Maximum	65 min.	23 min.	12 min.
<b>Total</b>	<b>Average</b>	<b>10 min.</b>	<b>9 min.</b>	<b>11 min.</b>
	Cases	<b>528</b>	<b>181</b>	<b>261</b>
	Stand. Time	6 min.	6 min.	8 min.
	Minimum	1 min.	1 min.	1 min.
	Maximum	65 min.	50 min.	70 min.

<sup>1</sup> “firefighters” – firefighter vehicles, except ambulances

Ambulances (7 minutes) and firefighters (8 minutes) were significantly ( $\alpha=0.05$ ) faster at arriving for scenario 1.

Police forces had no significant difference in arrival times for the various scenarios.

## 7.5.2 Emergency service arrival time vs. Language

Table 24 - Language

Language		Arrival Time		
		Ambulance	Firefighters	Police Forces
Portuguese	<b>Average</b>	<b>10 min.</b>	<b>9 min.</b>	<b>12 min.</b>
	Cases	347	135	196
	Stand. Time	6 min.	6 min.	9 min.
	Minimum	1 min.	1 min.	1 min.
	Maximum	65 min.	50 min.	70 min.
English	<b>Average</b>	<b>10 min.</b>	<b>10 min.</b>	<b>11 min.</b>
	Cases	76	24	30
	Stand. Time	6 min.	6 min.	6 min.
	Minimum	1 min.	3 min.	2 min.
	Maximum	38 min.	30 min.	29 min.
French	<b>Average</b>	<b>9 min.</b>	<b>9 min.</b>	<b>12 min.</b>
	Cases	53	13	23
	Stand. Time	5 min.	4 min.	7 min.
	Minimum	2 min.	1 min.	3 min.
	Maximum	28 min.	14 min.	29 min.
Spanish	<b>Average</b>	<b>9 min.</b>	<b>12 min.</b>	<b>10 min.</b>
	Cases	49	8	12
	Stand. Time	6 min.	5 min.	6 min.
	Minimum	2 min.	6 min.	2 min.
	Maximum	31 min.	18 min.	19 min.
<b>Total</b>	<b>Average</b>	<b>10 min.</b>	<b>9 min.</b>	<b>11 min.</b>
	Cases	<b>525</b>	<b>180</b>	<b>261</b>
	Stand. Time	6 min.	6 min.	8 min.
	Minimum	1 min.	1 min.	1 min.
	Maximum	65 min.	50 min.	70 min.

None of the emergency services showed significant arrival time differences for each call language.

<sup>2</sup> “police forces” – police force vehicles



### 7.5.3 Emergency services arrival time vs. Time Frame

**Table 25 - Time Frame**

Time Frame		Arrival time		
		Ambulance	Firefighters	Police Forces
<b>09H00 : 17H00</b>	<b>Average</b>	<b>9 min.</b>	<b>9 min.</b>	<b>11 min.</b>
	Cases	216	98	130
	Stand. Time	5 min.	6 min.	6 min.
	Minimum	1 min.	1 min.	2 min.
	Maximum	38 min.	50 min.	32 min.
<b>17H00 : 01H00</b>	<b>Average</b>	<b>10 min.</b>	<b>9 min.</b>	<b>12 min.</b>
	Cases	202	57	87
	Stand. Time	7 min.	5 min.	11 min.
	Minimum	1 min.	1 min.	2 min.
	Maximum	65 min.	26 min.	70 min.
<b>01H00 : 09H00</b>	<b>Average</b>	<b>10 min.</b>	<b>12 min.</b>	<b>12 min.</b>
	Cases	111	26	45
	Stand. Time	6 min.	7 min.	7 min.
	Minimum	1 min.	3 min.	1 min.
	Maximum	35 min.	30 min.	29 min.
<b>Total</b>	<b>Average</b>	<b>10 min.</b>	<b>9 min.</b>	<b>11 min.</b>
	Cases	<b>529</b>	<b>181</b>	<b>262</b>
	Stand. Time	6 min.	6 min.	8 min.
	Minimum	1 min.	1 min.	1 min.
	Maximum	65 min.	50 min.	70 min.

None of the emergency services showed significant arrival time differences for each call time frame.

## **7.6 Evaluation of emergency services arrival time**

Lastly, we will analyse the emergency services that either arrive or not and in what order they normally arrive.

### **7.6.1 Non-arrival of emergency services**

We'll begin by analysing cases in which no emergency services arrived.

#### **7.6.1.1 Non-arrival of emergency services – general analysis**

Of the 957 checks, there were 171 cases (18%) in which no emergency services arrived.

Emergency services after a 112 call were less likely to arrive in the NUTS of Entre Douro e Vouga (53%), Ave (44%), Alto Trás Montes (38%) and Cávado (35%).

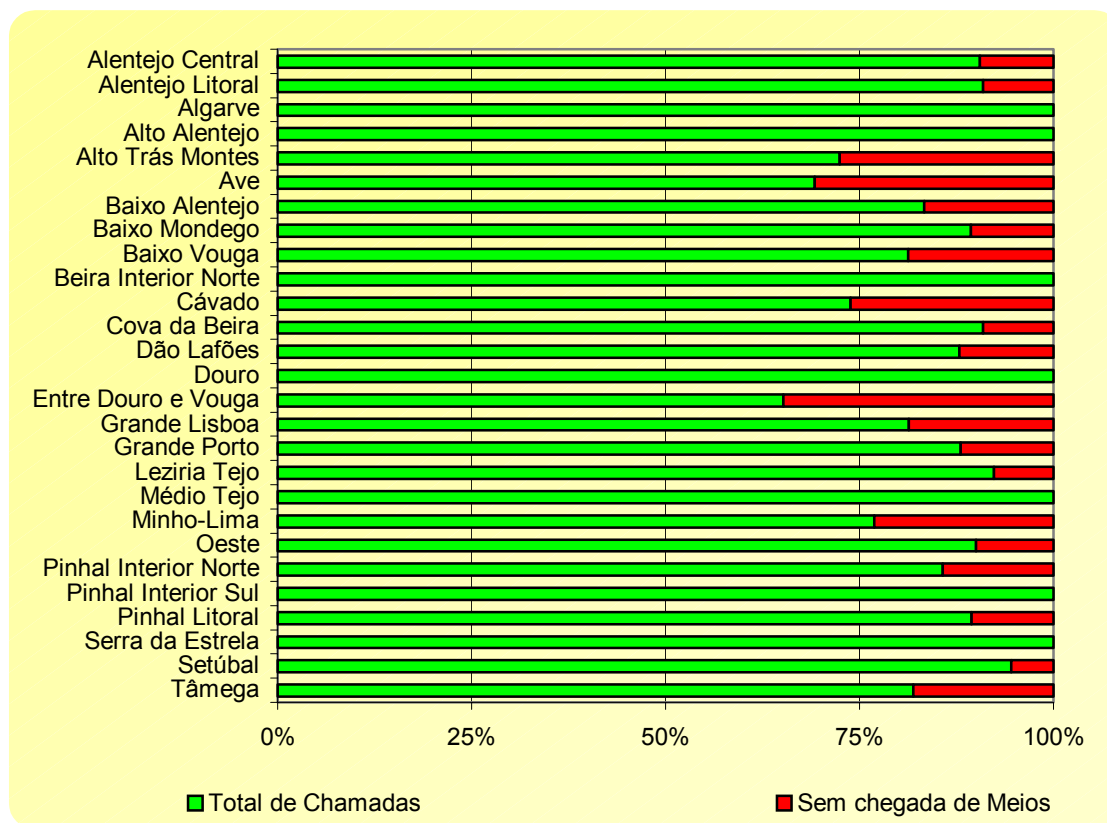
In contrast, emergency services arrived every time in the NUTS of Algarve, Alto Alentejo, Beira interior Norte, Douro, Médio Tejo, Pinhal interior Sul and Serra da Estrela.

**Table 26 - Non-arrival of Services** (171 cases - 18%)

**General Analysis** (171 cases - 18%) (in 957 emergency calls)

Non-Arrival of Services	General	Calls
Alentejo Central	2 11%	19
Alentejo Litoral	1 10%	10
Algarve	0%	40
Alto Alentejo	0%	11
Alto Trás Montes	8 38%	21
Ave	12 44%	27
Baixo Alentejo	2 20%	10
Baixo Mondego	5 12%	42
Baixo Vouga	9 23%	39
Beira Interior Norte	0%	1
Cávado	11 35%	31
Cova da Beira	1 10%	10
Dão Lafões	4 14%	29
Douro	0%	16
Entre Douro e Vouga	16 53%	30
Grande Lisboa	45 23%	196
Grande Porto	16 14%	118
Lezíria Tejo	2 8%	24
Médio Tejo	0%	19
Minho-Lima	9 30%	30
Oeste	4 11%	36
Pinhal Interior Norte	3 17%	18
Pinhal Interior Sul	0%	9
Pinhal Litoral	4 12%	34
Serra da Estrela	0%	8
Setúbal	4 6%	70
Tâmega	13 22%	59
<b>Total</b>	<b>171 18%</b>	<b>957</b>

**Graph 6 – Non-arrival of services – General analysis**



### 7.6.1.2 Non-arrival of emergency services – Scenario

**Table 27 - Per Scenario (170 cases - 18%)** (in 954 emergency calls)

NUTS III	Non-Arrival of Services						
	Scenario						Calls
	C 1	C 2	C 3	C 4	C 5	Total	
Alentejo Central			2 40%			2 11%	18
Alentejo Litoral		1 100%				1 10%	10
Alto Trás Montes	3 75%	2 50%	1 20%	2 33%		8 38%	21
Ave	3 75%	4 44%	2 33%	2 67%	1 20%	12 44%	27
Baixo Alentejo	1 100%			1 33%		2 20%	10
Baixo Mondego	2 33%		1 9%		2 33%	5 12%	42
Baixo Vouga	1 14%	6 86%	1 11%		1 11%	9 23%	39
Cávado	3 60%	2 33%	2 22%	2 40%	2 33%	11 35%	31
Cova da Beira		1 50%				1 10%	10
Dão Lafões	1 25%	2 33%			1 25%	4 14%	29
Entre Douro e Vouga	5 100%	5 83%	3 33%	1 17%	2 50%	16 53%	30
Grande Lisboa	10 28%	12 32%	11 28%	5 12%	7 17%	45 23%	196
Grande Porto	5 21%	7 27%	3 14%	1 4%		16 14%	118
Lezíria Tejo					2 29%	2 8%	24
Minho-Lima		4 100%		4 50%	1 25%	9 30%	30
Oeste	2 29%	2 17%				4 11%	35
Pinhal Interior Norte	2 67%	1 33%				3 17%	18
Pinhal Litoral	3 38%	1 9%				4 12%	34
Setúbal		3 18%	1 7%			4 6%	70
Tâmega	4 40%	5 45%	1 6%	2 20%		12 21%	58
<b>Total</b>	<b>45 28%</b>	<b>58 29%</b>	<b>28 12%</b>	<b>20 10%</b>	<b>19 12%</b>	<b>170 18%</b>	<b>954</b>

% of all calls in each scenario for each NUTS III

Generally, scenarios 1 and 2 showed the highest rate of non-arrival of emergency services.

Note that, in an analysis per NUTS, no emergency services arrived in all calls for scenario 1 in Entre Douro e Vouga (5 calls) and Baixo Alentejo (1 call), as well as in all calls for scenario 2 in Alentejo Litoral (1 call) and Minho Lima (4 calls).

#### **7.6.1.3 Non-arrival of emergency services – Time frame**

The time frame 17:00 – 01:00 (20%) showed the highest rate of non-arrival by emergency services. However, as shown in the following table, it's not the time frame that determines the lack of emergency services.

**Table 28 - Per Time Frame (170 cases - 18%)** (in 956 emergency calls)

NUTS III	Non-Arrival of Services				
	Time Frame				Calls
	09H00 17H00	17H00 01H00	01H00 09H00	Total	
Alentejo Central	1 9%	1 20%		2 11%	19
Alentejo Litoral	1 25%			1 10%	10
Alto Trás Montes	4 67%	3 30%	1 20%	8 38%	21
Ave	1 25%	9 60%	2 25%	12 44%	27
Baixo Alentejo	2 50%			2 20%	10
Baixo Mondego		3 19%	2 20%	5 12%	42
Baixo Vouga	3 20%	3 21%	3 30%	9 23%	39
Cávado	2 40%	7 41%	2 22%	11 35%	31
Cova da Beira		1 50%		1 10%	10
Dão Lafões	2 15%		2 33%	4 14%	29
Entre Douro e Vouga	6 55%	6 55%	4 50%	16 53%	30
Grande Lisboa	11 13%	27 30%	7 35%	45 23%	196
Grande Porto	8 17%	5 12%	3 11%	16 14%	118
Lezíria Tejo		1 10%	1 50%	2 8%	24
Minho-Lima	6 35%	3 27%		9 30%	30
Oeste	2 17%	2 13%		4 11%	36
Pinhal Interior Norte	3 33%			3 17%	18
Pinhal Litoral	2 13%	1 8%	1 17%	4 12%	34
Setúbal	3 9%	1 4%		4 6%	70
Tâmega	6 26%	3 15%	3 20%	12 21%	58
<b>Total</b>	<b>63 16%</b>	<b>76 20%</b>	<b>31 17%</b>	<b>170 18%</b>	<b>956</b>

% of all calls in each time frame for each NUTS III

#### **7.6.1.4 Non-arrival of emergency services – Language**

Calls in foreign languages, particularly English (29%) and French (20%) had a significantly ( $\alpha=0.5$ ) higher probability of not being assisted than calls in Portuguese (15%) or Spanish (15%).

Per NUTS, we found that all calls made in Ave (3 calls) and Baixo Alentejo (1 call) were not assisted. The same took place in Alentejo Central (2 calls) and Baixo Alentejo (1 call) when the calls were in French. In Ave, the only call made in Spanish was not assisted.



**Table 29 - Per Language (169 cases - 18%)** (em 948 emergency calls)

NUTS III	Non-Arrival of Services					
	Language					Calls
	Port.	Eng.	Fr.	Span.	Total	
Alentejo Central			2 100%		2 11%	18
Alentejo Litoral		1 50%			1 10%	10
Alto Trás Montes	5 42%	3 60%			8 38%	21
Ave	8 38%	3 100%		1 100%	12 46%	26
Baixo Alentejo		1 100%	1 100%		2 20%	10
Baixo Mondego	1 3%	3 50%	1 25%		5 12%	42
Baixo Vouga	4 18%	3 33%	2 67%		9 23%	39
Cávado	8 35%	1 25%	2 67%		11 35%	31
Cova da Beira	1 10%				1 10%	10
Dão Lafões	4 19%				4 14%	29
Entre Douro e Vouga	9 50%	5 71%	1 50%	1 33%	16 53%	30
Grande Lisboa	20 17%	18 45%	4 20%	3 17%	45 23%	196
Grande Porto	11 14%	2 10%	2 22%	1 9%	16 14%	118
Lezíria Tejo	2 9%				2 8%	24
Minho-Lima	3 16%	5 83%		1 50%	9 30%	30
Oeste	2 9%	2 25%			4 12%	34
Pinhal Interior Norte	3 19%				3 17%	18
Pinhal Litoral	3 14%			1 50%	4 12%	34
Setúbal	3 7%				3 5%	66
Tâmega	6 18%	2 17%	1 17%	3 50%	12 21%	58
<b>Total</b>	<b>93 15%</b>	<b>49 29%</b>	<b>16 20%</b>	<b>11 15%</b>	<b>169 18%</b>	<b>948</b>

% of all calls in each language, for each NUTS III

## 7.6.2 Arrival of emergency services

Of all 957 checks, emergency services arrived 786 times (82%).

Naturally, the three types of services – ambulance, firefighters and police – did not always arrive simultaneously.

However, as shown in the table below, the various types of emergency services arrived in all occasions.

Table 30

Arrival of:	C1	C2	C3	C4	C5	Total
Ambulance	24 5%	9 2%	190 36%	169 32%	138 26%	530
Firefighters except ambulance	81 46%	3 2%	76 43%	10 6%	6 3%	176
Police	55 21%	105 40%	91 35%	9 3%	1 0,4%	261
Total	160 17%	117 12%	357 37%	188 19%	145 15%	967

The following table shows their order of arrival, per NUTS and in general.

**Table 31 - Arrival of Services** (786 of the 957 emergency calls - 82%)

	First			Second			Third			Total Rescues
	Ambulance	Firefighters	Police	Ambulance	Firefighters	Police	Ambulance	Firefighters	Police	
Alentejo Central	10 59%	2 12%	4 24%		2 12%	1 6%	1 6%		1 6%	17
Alentejo Litoral	8 89%				2 22%				1 11%	9
Algarve	24 60%	6 15%	9 23%	2 5%	3 8%	6 15%		1 3%	3 8%	40
Alto Alentejo	8 73%	1 9%	2 18%	1 9%	2 18%	2 18%		1 9%		11
Alto Trás Montes	6 46%	2 15%	4 31%	2 15%		1 8%				13
Ave	7 47%		4 27%	1 7%	2 13%					15
Baixo Alentejo	6 75%		2 25%		4 50%	1 13%			3 38%	8
Baixo Mondego	21 57%	3 8%	6 16%	1 3%	4 11%	4 11%		1 3%	3 8%	37
Baixo Vouga	20 67%	7 23%	3 10%		2 7%	2 7%			2 7%	30
Beira Interior Norte	1 100%									1
Cávado	14 70%	2 10%	4 20%		2 10%	3 15%			1 5%	20
Cova da Beira	5 56%	1 11%	2 22%	1 11%	1 11%					9
Dão Lafões	16 64%	1 4%	2 8%	1 4%		3 12%			2 8%	25
Douro	7 44%	1 6%	1 6%		2 13%	1 6%				16
Entre Douro e Vouga	10 71%	2 14%	1 7%			1 7%				14
Grande Lisboa	98 65%	26 17%	29 19%	9 6%	5 3%	8 5%	2 1%		3 2%	151
Grande Porto	47 46%	9 9%	39 38%	4 4%	12 12%	3 3%	1 1%	1 1%	3 3%	102
Lezíria Tejo	11 50%	2 9%	6 27%			2 9%				22
Médio Tejo	10 53%	3 16%	6 32%	2 11%	2 11%	3 16%				19
Minho-Lima	13 62%	1 5%	5 24%	2 10%	2 10%	4 19%	1 5%			21
Oeste	15 47%	6 19%	1 3%	1 3%	1 3%	6 19%	1 3%	2 6%		32
Pinhal Interior Norte	10 67%	1 7%	3 20%	1 7%		3 20%		1 7%		15
Pinhal Interior Sul	7 78%	2 22%	1 11%	1 11%	2 22%	2 22%			2 22%	9
Pinhal Litoral	15 50%	6 20%	9 30%	1 3%	4 13%	4 13%		1 3%	1 3%	30
Serra da Estrela	7 88%	3 38%	1 13%		2 25%	1 13%			1 13%	8
Setúbal	39 59%	10 15%	13 20%	2 3%	8 12%	2 3%	1 2%		3 5%	66
Tâmega	30 65%	3 7%	3 7%	2 4%	6 13%	2 4%			1 2%	46
<b>Total</b>	<b>465 59%</b>	<b>100 13%</b>	<b>160 20%</b>	<b>34 4%</b>	<b>70 9%</b>	<b>65 8%</b>	<b>7 1%</b>	<b>8 1%</b>	<b>30 4%</b>	<b>786</b>

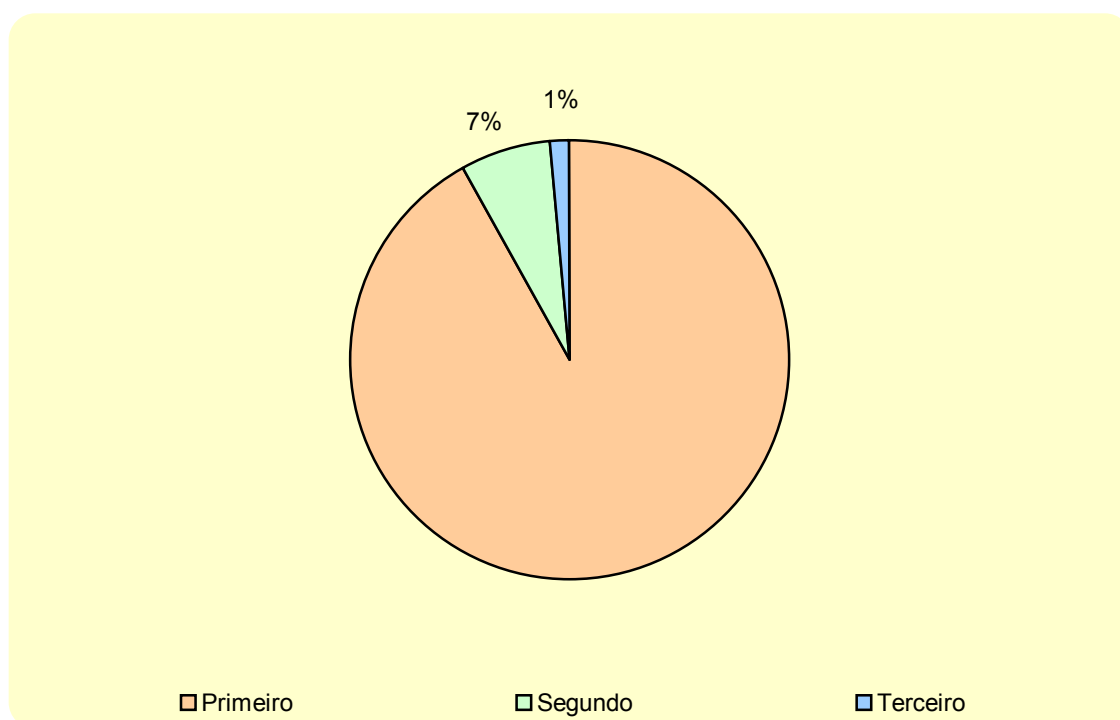
### 7.6.2.1 Ambulance – General analysis

Of the 786 assistance rescues, ambulances arrived in 506 cases (64%). This corresponds to 53% of all checks.

Ambulances were the first to arrive in 92% (465) of the times they provided assistance. Ambulances arrived in third place (and last) compared with the other emergency services only in 1% of cases (7 times).

In an analysis per NUTS, we found that ambulances were systematically (100%) the first to arrive in the regions of Alentejo Litoral (8 arrivals), Baixo Alentejo (6 arrivals), Baixo Vouga (20 arrivals), Beira Interior Norte (1 arrival), Cávado (14 arrivals), Douro (7 arrivals), Entre Douro e Vouga (10 arrivals), Lezíria Tejo (11 arrivals) and Serra da Estrela (7 arrivals).

**Graph 7 – Ambulance arrival – General analysis**



**Table 32 - Ambulance Arrival** (506 of 957 calls - 53%)  
(64% of 786 rescues)

	Ambulance - General				
	First	Second	Third	Total	Resc.
Alentejo Central	10 91%		1 9%	11 65%	17
Alentejo Litoral	8 100%			8 89%	9
Algarve	24 92%	2 8%		26 65%	40
Alto Alentejo	8 89%	1 11%		9 82%	11
Alto Trás Montes	6 75%	2 25%		8 62%	13
Ave	7 88%	1 13%		8 53%	15
Baixo Alentejo	6 100%			6 75%	8
Baixo Mondego	21 95%	1 5%		22 59%	37
Baixo Vouga	20 100%			20 67%	30
Beira Interior Norte	1 100%			1 100%	1
Cávado	14 100%			14 70%	20
Cova da Beira	5 83%	1 17%		6 67%	9
Dão Lafões	16 94%	1 6%		17 68%	25
Douro	7 100%			7 44%	16
Entre Douro e Vouga	10 100%			10 71%	14
Grande Lisboa	98 90%	9 8%	2 2%	109 72%	151
Grande Porto	47 90%	4 8%	1 2%	52 51%	102
Lezíria Tejo	11 100%			11 50%	22
Médio Tejo	10 83%	2 17%		12 63%	19
Minho-Lima	13 81%	2 13%	1 6%	16 76%	21
Oeste	15 88%	1 6%	1 6%	17 53%	32
Pinhal Interior Norte	10 91%	1 9%		11 73%	15
Pinhal Interior Sul	7 88%	1 13%		8 89%	9
Pinhal Litoral	15 94%	1 6%		16 53%	30
Serra da Estrela	7 100%			7 88%	8
Setúbal	39 93%	2 5%	1 2%	42 64%	66
Tâmega	30 94%	2 6%		32 70%	46
<b>Total</b>	<b>465 92%</b>	<b>34 7%</b>	<b>7 1%</b>	<b>506 64%</b>	<b>786</b>

#### **7.6.2.1.1 Ambulance – Analysis per scenario**

Ambulances arrive more frequently in scenarios 3 (37%), 4 (31%) and 5 (26%) and less in scenarios 1 (5%) and 2 (2%).

Regardless of the scenario in question, normally ambulances were the first service to arrive. Scenarios 5 (99%) and 4 (96%) were those in which they arrive first more often; followed by scenarios 2 (89%) and 3 (88%). In contrast, in scenario 1 (59%), ambulances arrived first less often and more often second (22%). This was also the only scenario in which ambulances arrived third, that is, after the other two emergency services, which happened 5 times (19%).

#### **7.6.2.1.2 Ambulance – Analysis per time frame**

Regardless of the time frame, ambulances frequently arrive first (on average 92%). However they arrived third from 9:00 to 17:00 h, 4 times (2%), and from 17:00 to 01:00 h, 3 times (2%).

#### **7.6.2.1.3 Ambulance – Analysis per call language**

The emergency call language has no impact on the arrival of ambulances. Of the seven times in which ambulances arrived third, 6 of these were in response to calls in Portuguese and only one to a call in French.

**Table 33 - Per Scenario (505 arrivals - 53%)** (in 957 emergency calls)

NUTS III	Ambulance Arrival Compared With the Other Emergency Services - Scenario																			Calls
	First						Second						Third							
	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total		
Alentejo Central			3	5	2	10							1					1	11	
			30%	50%	20%	91%							100%					9%		
Alentejo Litoral			4	3	1	8													8	
			50%	38%	13%	100%														
Algarve			8	10	6	24			2			2							26	
			33%	42%	25%	92%			100%			8%								
Alto Alentejo			3	4	1	8			1			1							9	
			38%	50%	13%	89%			100%			11%								
Alto Trás Montes			3	2	1	6			1	1		2							8	
			50%	33%	17%	75%			50%	50%		25%								
Ave			3	1	3	7					1	1							8	
			43%	14%	43%	88%					100%	13%								
Baixo Alentejo			4	1	1	6													6	
			67%	17%	17%	100%														
Baixo Mondego			9	9	3	21				1		1							22	
			43%	43%	14%	95%				100%		5%								
Baixo Vouga	1		4	7	8	20													20	
	5%		20%	35%	40%	100%														
Beira Interior Norte			1			1													1	
			100%			100%														
Cávado			7	3	4	14													14	
			50%	21%	29%	100%														
Cova da Beira			2	2	1	5			1			1							6	
			40%	40%	20%	83%			100%			17%								
Dão Lafões	1		7	6	2	16	1					1							17	
	6%		44%	38%	13%	94%	100%					6%								
Douro			3	3	1	7													7	
			43%	43%	14%	100%														
Entre Douro e Vouga			5	2	3	10													10	
			50%	20%	30%	100%														
Grande Lisboa	8	2	24	32	32	98	4	1	3	1		9	2					2	109	
	8%	2%	24%	33%	33%	90%	44%	11%	33%	11%		8%	100%					2%		
Grande Porto			14	16	17	47			2	2		4			1			1	52	
			30%	34%	36%	90%			50%	50%		8%			100%			2%		
Lezíria Tejo			3	3	5	11													11	
			27%	27%	45%	100%														
Médio Tejo	1		1	3	5	10			2			2							12	
	10%		10%	30%	50%	83%			100%			17%								
Minho-Lima			7	4	2	13			2			2	1					1	16	
			54%	31%	15%	81%			100%			13%	100%					6%		
Oeste			7	5	2	14			1			1			1			1	16	
			50%	36%	14%	82%			100%			6%			100%			6%		
Pinhal Interior Norte		1	4	4	1	10			1			1							11	
		10%	40%	40%	10%	91%			100%			9%								
Pinhal Interior Sul		1	4	1	1	7				1		1							8	
		14%	57%	14%	14%	88%				100%		13%								
Pinhal Litoral	1	2	5	2	5	15			1			1							16	
	7%	13%	33%	13%	33%	94%			100%			6%								
Serra da Estrela			4	2	1	7													7	
			57%	29%	14%	100%														
Setúbal	4	2	11	12	10	39	1		1			2	1					1	42	
	10%	5%	28%	31%	26%	93%	50%		50%			5%	100%					2%		
Tâmega			13	7	10	30			2			2							32	
			43%	23%	33%	94%			100%			6%								
Total	16	8	163	149	128	464	6	1	20	6	1	34	5		2			7	505	
	3%	2%	35%	32%	28%	92%	18%	3%	59%	18%	3%	7%	71%		29%			1%		

**Table 34 - Per Scenario (505 Arrivals - 53%)** (in 957 emergency calls)

NUTS III	Ambulance Arrival Compared With the Other Emergency Services - Scenario																				Arrivals
	Scenario 1				Scenario 2				Scenario 3				Scenario 4				Scenario 5				
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	
Alentejo Central			1	1					3			3	5			5	2			2	11
			100%	9%					100%			27%	100%			45%	100%			18%	
Alentejo Litoral									4			4	3			3	1			1	8
									100%			50%	100%			38%	100%			13%	
Algarve									8	2		10	10			10	6			6	26
									80%	20%		38%	100%			38%	100%			23%	
Alto Alentejo									3	1		4	4			4	1			1	9
									75%	25%		44%	100%			44%	100%			11%	
Alto Trás Montes									3	1		4	2	1		3	1			1	8
									75%	25%		50%	67%	33%		38%	100%			13%	
Ave									3			3	1			1	3	1		4	8
									100%			38%	100%			13%	75%	25%		50%	
Baixo Alentejo									4			4	1			1	1			1	6
									100%			67%	100%			17%	100%			17%	
Baixo Mondego									9			9	9	1		10	3			3	22
									100%			41%	90%	10%		45%	100%			14%	
Baixo Vouga	1			1					4			4	7			7	8			8	20
	100%			5%					100%			20%	100%			35%	100%			40%	
Beira Interior Norte									1			1									1
									100%			100%									
Cávado									7			7	3			3	4			4	14
									100%			50%	100%			21%	100%			29%	
Cova da Beira									2	1		3	2			2	1			1	6
									67%	33%		50%	100%			33%	100%			17%	
Dão Lafões	1	1		2					7			7	6			6	2			2	17
	50%	50%		12%					100%			41%	100%			35%	100%			12%	
Douro									3			3	3			3	1			1	7
									100%			43%	100%			43%	100%			14%	
Entre Douro e Vouga									5			5	2			2	3			3	10
									100%			50%	100%			20%	100%			30%	
Grande Lisboa	8	4	2	14	2	1		3	24	3		27	32	1		33	32			32	109
	57%	29%	14%	13%	67%	33%		3%	89%	11%		25%	97%	3%		30%	100%			29%	
Grande Porto									14	2	1	17	16	2		18	17			17	52
									82%	12%	6%	33%	89%	11%		35%	100%			33%	
Lezíria Tejo									3			3	3			3	5			5	11
									100%			27%	100%			27%	100%			45%	
Médio Tejo	1			1					1	2		3	3			3	5			5	12
	100%			8%					33%	67%		25%	100%			25%	100%			42%	
Minho-Lima			1	1					7	2		9	4			4	2			2	16
			100%	6%					78%	22%		56%	100%			25%	100%			13%	
Oeste									7	1	1	9	5			5	2			2	16
									78%	11%	11%	56%	100%			31%	100%			13%	
Pinhal Interior Norte					1			1	4	1		5	4			4	1			1	11
					100%			9%	80%	20%		45%	100%			36%	100%			9%	
Pinhal Interior Sul					1			1	4			4	1	1		2	1			1	8
					100%			13%	100%			50%	50%	50%		25%	100%			13%	
Pinhal Litoral	1			1	2			2	5	1		6	2			2	5			5	16
	100%			6%	100%			13%	83%	17%		38%	100%			13%	100%			31%	
Serra da Estrela									4			4	2			2	1			1	7
									100%			57%	100%			29%	100%			14%	
Setúbal	4	1	1	6	2			2	11	1		12	12			12	10			10	42
	67%	17%	17%	14%	100%			5%	92%	8%		29%	100%			29%	100%			24%	
Tâmega									13	2		15	7			7	10			10	32
									87%	13%		47%	100%			22%	100%			31%	
Total	16	6	5	27	8	1		9	163	20	2	185	149	6		155	128	1		129	505
	59%	22%	19%	5%	89%	11%		2%	88%	11%	1%	37%	96%	4%		31%	99%	1%		26%	



**Table 35 - Per Time Frame (506 Arrivals - 53%)** (em 957 emergency calls)

NUTS III	Ambulance Arrival Compared With Other Emergency Services - Time Frame													Calls
	First				Second				Third					
	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total		
Alentejo Central	6 60%	1 10%	3 30%	10 91%					1 100%			1 9%	11	
Alentejo Litoral	3 38%	3 38%	2 25%	8 100%									8	
Algarve	10 42%	8 33%	6 25%	24 92%			2 100%	2 8%					26	
Alto Alentejo	3 38%	2 25%	3 38%	8 89%	1 100%			1 11%					9	
Alto Trás Montes	1 17%	3 50%	2 33%	6 75%	1 50%		1 50%	2 25%					8	
Ave	1 14%	3 43%	3 43%	7 88%		1 100%		1 13%					8	
Baixo Alentejo	2 33%	2 33%	2 33%	6 100%									6	
Baixo Mondego	9 43%	7 33%	5 24%	21 95%		1 100%		1 5%					22	
Baixo Vouga	5 25%	8 40%	7 35%	20 100%									20	
Beira Interior Norte		1 100%		1 100%									1	
Cávado	2 14%	7 50%	5 36%	14 100%									14	
Cova da Beira	5 100%			5 83%	1 100%			1 17%					6	
Dão Lafões	8 50%	6 38%	2 13%	16 94%		1 100%		1 6%					17	
Douro	3 43%	3 43%	1 14%	7 100%									7	
Entre Douro e Vouga	3 30%	3 30%	4 40%	10 100%									10	
Grande Lisboa	40 41%	47 48%	11 11%	98 90%	8 89%	1 11%		9 8%	2 100%			2 2%	109	
Grande Porto	19 40%	18 38%	10 21%	47 90%	2 50%	1 25%	1 25%	4 8%	1 100%			1 2%	52	
Lezíria Tejo	6 55%	4 36%	1 9%	11 100%									11	
Médio Tejo	8 80%	2 20%		10 83%	2 100%			2 17%					12	
Minho-Lima	7 54%	4 31%	2 15%	13 81%		2 100%		2 13%		1 100%		1 6%	16	
Oeste	6 40%	5 33%	4 27%	15 88%			1 100%	1 6%		1 100%		1 6%	17	
Pinhal Interior Norte	5 50%	4 40%	1 10%	10 91%			1 100%	1 9%					11	
Pinhal Interior Sul	3 43%	3 43%	1 14%	7 88%			1 100%	1 13%					8	
Pinhal Litoral	4 27%	9 60%	2 13%	15 94%	1 100%			1 6%					16	
Serra da Estrela	3 43%	3 43%	1 14%	7 100%									7	
Setúbal	17 44%	12 31%	10 26%	39 93%	1 50%	1 50%		2 5%		1 100%		1 2%	42	
Tâmega	10 33%	10 33%	10 33%	30 94%	1 50%	1 50%		2 6%					32	
Total	189 41%	178 38%	98 21%	465 92%	18 53%	9 26%	7 21%	34 7%	4 57%	3 43%	0 0%	7 1%	506	

**Table 36 - Per Time Frame (506 arrivals - 53%)** (in 957 emergency calls)

NUTS III	Ambulance Arrival Compared With Other Emergency Services - Time Frame													Arrivals
	09H00 : 17H00				17H00 : 01H00				01H00 : 09H00					
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total		
Alentejo Central	6 86%		1 14%	7 64%	1 100%			1 9%	3 100%			3 27%	11	
Alentejo Litoral	3 100%			3 38%	3 100%			3 38%	2 100%			2 25%	8	
Algarve	10 100%			10 38%	8 100%			8 31%	6 75%	2 25%		8 31%	26	
Alto Alentejo	3 75%	1 25%		4 44%	2 100%			2 22%	3 100%			3 33%	9	
Alto Trás Montes	1 50%	1 50%		2 25%	3 100%			3 38%	2 67%	1 33%		3 38%	8	
Ave	1 100%			1 13%	3 75%	1 25%		4 50%	3 100%			3 38%	8	
Baixo Alentejo	2 100%			2 33%	2 100%			2 33%	2 100%			2 33%	6	
Baixo Mondego	9 100%			9 41%	7 88%	1 13%		8 36%	5 100%			5 23%	22	
Baixo Vouga	5 100%			5 25%	8 100%			8 40%	7 100%			7 35%	20	
Beira Interior Norte					1 100%			1 100%					1	
Cávado	2 100%			2 14%	7 100%			7 50%	5 100%			5 36%	14	
Cova da Beira	5 83%	1 17%		6 100%									6	
Dão Lafões	8 100%			8 47%	6 86%	1 14%		7 41%	2 100%			2 12%	17	
Douro	3 100%			3 43%	3 100%			3 43%	1 100%			1 14%	7	
Entre Douro e Vouga	3 100%			3 30%	3 100%			3 30%	4 100%			4 40%	10	
Grande Lisboa	40 80%	8 16%	2 4%	50 46%	47 98%	1 2%		48 44%	11 100%			11 10%	109	
Grande Porto	19 86%	2 9%	1 5%	22 42%	18 95%	1 5%		19 37%	10 91%	1 9%		11 21%	52	
Lezíria Tejo	6 100%			6 55%	4 100%			4 36%	1 100%			1 9%	11	
Médio Tejo	8 80%	2 20%		10 83%	2 100%			2 17%					12	
Minho-Lima	7 100%			7 44%	4 57%	2 29%	1 14%	7 44%	2 100%			2 13%	16	
Oeste	6 100%			6 35%	5 83%		1 17%	6 35%	4 80%	1 20%		5 29%	17	
Pinhal Interior Norte	5 100%			5 45%	4 100%			4 36%	1 50%	1 50%		2 18%	11	
Pinhal Interior Sul	3 100%			3 38%	3 100%			3 38%	1 50%	1 50%		2 25%	8	
Pinhal Litoral	4 80%	1 20%		5 31%	9 100%			9 56%	2 100%			2 13%	16	
Serra da Estrela	3 100%			3 43%	3 100%			3 43%	1 100%			1 14%	7	
Setúbal	17 94%	1 6%		18 43%	12 86%	1 7%	1 7%	14 33%	10 100%			10 24%	42	
Tâmega	10 91%	1 9%		11 34%	10 91%	1 9%		11 34%	10 100%			10 31%	32	
Total	189 90%	18 9%	4 2%	211 42%	178 94%	9 5%	3 2%	190 38%	98 93%	7 7%		105 21%	506	

**Table 37 - Per Language (502 arrivals - 53%)** (in 957 emergency calls)

NUTS III	Ambulance Arrival Compared With Other Emergency Services - Language																Calls
	First					Second					Third						
	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total		
Alentejo Central	6 60%	3 30%		1 10%	10 91%						1 100%				1 9%	11	
Alentejo Litoral	5 63%	1 13%	1 13%	1 13%	8 100%											8	
Algarve	12 50%	5 21%	4 17%	3 13%	24 92%		2 100%			2 8%						26	
Alto Alentejo	5 63%	1 13%	1 13%	1 13%	8 89%	1 100%				1 11%						9	
Alto Trás Montes	3 50%	1 17%	1 17%	1 17%	6 75%			1 50%	1 50%	2 25%						8	
Ave	7 100%				7 88%	1 100%				1 13%						8	
Baixo Alentejo	6 100%				6 100%											6	
Baixo Mondego	16 76%	1 5%	3 14%	1 5%	21 95%	1 100%				1 5%						22	
Baixo Vouga	11 55%	3 15%	1 5%	5 25%	20 100%											20	
Beira Interior Norte	1 100%				1 100%											1	
Cávado	10 71%	2 14%	1 7%	1 7%	14 100%											14	
Cova da Beira	5 100%				5 83%	1 100%				1 17%						6	
Dão Lafões	12 75%		2 13%	2 13%	16 94%	1 100%				1 6%						17	
Douro	4 57%		1 14%	2 29%	7 100%											7	
Entre Douro e Vouga	6 60%	2 20%	1 10%	1 10%	10 100%											10	
Grande Lisboa	56 57%	17 17%	14 14%	11 11%	98 90%	8 89%			1 11%	9 8%	2 100%				2 2%	109	
Grande Porto	30 64%	6 13%	4 9%	7 15%	47 90%	2 50%	1 25%	1 25%		4 8%	1 100%				1 2%	52	
Lezíria Tejo	11 100%				11 100%											11	
Médio Tejo	8 80%	1 10%		1 10%	10 83%	2 100%				2 17%						12	
Minho-Lima	10 77%		2 15%	1 8%	13 81%		1 50%	1 50%		2 13%	1 100%				1 6%	16	
Oeste	10 71%	2 14%		2 14%	14 88%		1 100%			1 6%	1 100%				1 6%	16	
Pinhal Interior Norte	9 90%		1 10%		10 91%	1 100%				1 9%						11	
Pinhal Interior Sul	5 71%	2 29%			7 88%			1 100%		1 13%						8	
Pinhal Litoral	10 67%	1 7%	4 27%		15 94%	1 100%				1 6%						16	
Serra da Estrela	5 71%	1 14%		1 14%	7 100%											7	
Setúbal	22 61%	9 25%	4 11%	1 3%	36 92%	2 100%				2 5%			1 100%		1 3%	39	
Tâmega	19 63%	6 20%	2 7%	3 10%	30 94%	1 50%	1 50%			2 6%						32	
Total	304 66%	64 14%	47 10%	46 10%	461 92%	22 65%	6 18%	4 12%	2 6%	34 7%	6 86%		1 14%	0 0%	7 1%	502	

**Table 38 - Per language (502 arrivals - 53%)** (in 957 emergency calls)

NUTS III	Ambulance Arrival Compared With Oher Emergency Services - Language																	Arrivals
	Portuguese				English				French				Spanish					
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total		
Alentejo Central	6 86%		1 14%	7 64%	3 100%			3 27%					1 100%			1 9%	11	
Alentejo Litoral	5 100%			5 63%	1 100%			1 13%	1 100%			1 13%	1 100%			1 13%	8	
Algarve	12 100%			12 46%	5 71%	2 29%		7 27%	4 100%			4 15%	3 100%			3 12%	26	
Alto Alentejo	5 83%	1 17%		6 67%	1 100%			1 11%	1 100%			1 11%	1 100%			1 11%	9	
Alto Trás Montes	3 100%			3 38%	1 100%			1 13%	1 50%	1 50%		2 25%	1 50%	1 50%		2 25%	8	
Ave	7 88%	1 13%		8 100%													8	
Baixo Alentejo	6 100%			6 100%													6	
Baixo Mondego	16 94%	1 6%		17 77%	1 100%			1 5%	3 100%			3 14%	1 100%			1 5%	22	
Baixo Vouga	11 100%			11 55%	3 100%			3 15%	1 100%			1 5%	5 100%			5 25%	20	
Beira Interior Norte	1 100%			1 100%													1	
Cávado	10 100%			10 71%	2 100%			2 14%	1 100%			1 7%	1 100%			1 7%	14	
Cova da Beira	5 83%	1 17%		6 100%													6	
Dão Lafões	12 92%	1 8%		13 76%					2 100%			2 12%	2 100%			2 12%	17	
Douro	4 100%			4 57%					1 100%			1 14%	2 100%			2 29%	7	
Entre Douro e Vouga	6 100%			6 60%	2 100%			2 20%	1 100%			1 10%	1 100%			1 10%	10	
Grande Lisboa	56 85%	8 12%	2 3%	66 61%	17 100%			17 16%	14 100%			14 13%	11 92%	1 8%		12 11%	109	
Grande Porto	30 91%	2 6%	1 3%	33 63%	6 86%	1 14%		7 13%	4 80%	1 20%		5 10%	7 100%			7 13%	52	
Lezíria Tejo	11 100%			11 100%													11	
Médio Tejo	8 80%	2 20%		10 83%	1 100%			1 8%					1 100%			1 8%	12	
Minho-Lima	10 91%		1 9%	11 69%		1 100%		1 6%	2 67%	1 33%		3 19%	1 100%			1 6%	16	
Oeste	10 91%		1 9%	11 69%	2 67%	1 33%		3 19%					2 100%			2 13%	16	
Pinhal Interior Norte	9 90%	1 10%		10 91%					1 100%			1 9%					11	
Pinhal Interior Sul	5 100%			5 63%	2 100%			2 25%		1 100%		1 13%					8	
Pinhal Litoral	10 91%	1 9%		11 69%	1 100%			1 6%	4 100%			4 25%					16	
Serra da Estrela	5 100%			5 71%	1 100%			1 14%					1 100%			1 14%	7	
Setúbal	22 92%	2 8%		24 62%	9 100%			9 23%	4 80%		1 20%	5 13%	1 100%			1 3%	39	
Tâmega	19 95%	1 5%		20 63%	6 86%	1 14%		7 22%	2 100%			2 6%	3 100%			3 9%	32	
Total	304 92%	22 7%	6 2%	332 66%	64 91%	6 9%		70 14%	47 90%	4 8%	1 2%	52 10%	46 96%	2 4%		48 10%	502	

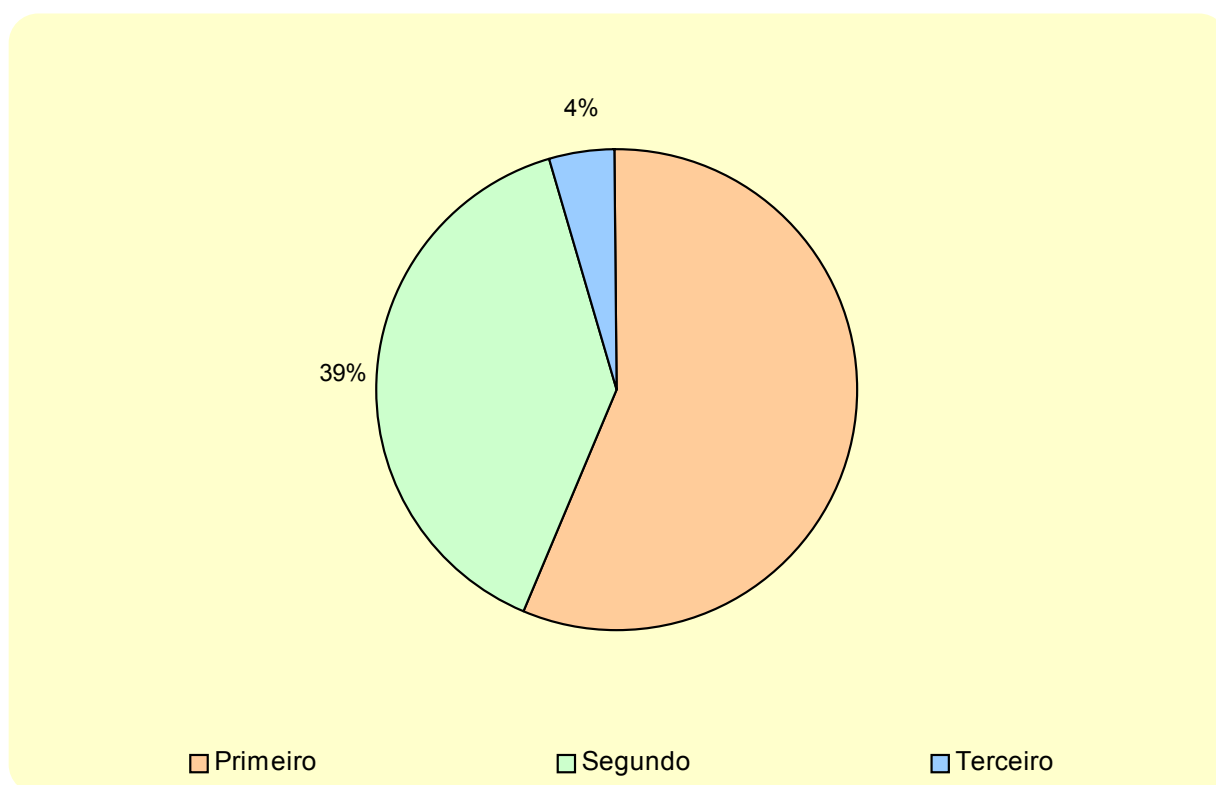
### 7.6.2.2 Firefighters – General analysis

Of all 786 rescues, firefighters were present in 178 (23%). This was 19% of all checks.

Firefighters arrived first in 56% (100) of the times in which they participated. Compared with the other services, they arrived third (and last) only in 4% of times (8).

An analysis per NUTS reveals that firefighters were systematically (100%) the first service to arrive in the regions of Alto Trás montes (2 arrivals), Entre Douro e Vouga (2 arrivals) and Lezíria Tejo (2 arrivals).

**Graph 8 – Arrival of firefighters – General analysis**



**Table 39 - Arrival of Firefighters** (178 of 957 calls - 19%)  
(23% of 786 rescues)

	Firefighters - General				Rescues
	First	Second	Third	Total	
Alentejo Central	2 50%	2 50%		4 24%	17
Alentejo Litoral		2 100%		2 22%	9
Algarve	6 60%	3 30%	1 10%	10 25%	40
Alto Alentejo	1 25%	2 50%	1 25%	4 36%	11
Alto Trás Montes	2 100%			2 15%	13
Ave		2 100%		2 13%	15
Baixo Alentejo		4 100%		4 50%	8
Baixo Mondego	3 38%	4 50%	1 13%	8 22%	37
Baixo Vouga	7 78%	2 22%		9 30%	30
Beira Interior Norte				0 0%	1
Cávado	2 50%	2 50%		4 20%	20
Cova da Beira	1 50%	1 50%		2 22%	9
Dão Lafões	1 100%			1 4%	25
Douro	1 33%	2 67%		3 19%	16
Entre Douro e Vouga	2 100%			2 14%	14
Grande Lisboa	26 84%	5 16%		31 21%	151
Grande Porto	9 41%	12 55%	1 5%	22 22%	102
Lezíria Tejo	2 100%			2 9%	22
Médio Tejo	3 60%	2 40%		5 26%	19
Minho-Lima	1 33%	2 67%		3 14%	21
Oeste	6 67%	1 11%	2 22%	9 28%	32
Pinhal Interior Norte	1 50%		1 50%	2 13%	15
Pinhal Interior Sul	2 50%	2 50%		4 44%	9
Pinhal Litoral	6 55%	4 36%	1 9%	11 37%	30
Serra da Estrela	3 60%	2 40%		5 63%	8
Setúbal	10 56%	8 44%		18 27%	66
Tâmega	3 33%	6 67%		9 20%	46
<b>Total</b>	<b>100 56%</b>	<b>70 39%</b>	<b>8 4%</b>	<b>178 23%</b>	<b>786</b>

#### **7.6.2.2.1 Firefighters – Analysis per scenario**

Firefighters arrived more frequently in scenarios 1 (59%) and 3 (24%) and less in scenarios 2 (2% - 3 arrivals) and 5 (3% - 6 arrivals).

Firefighters arrived first more often in scenarios 5 (100%), 1 (77%) and 4 (75%); followed by scenarios 2 (67%) and 3 (30%). On the other hand, firefighters arrived third only in scenario 3, that is, after the arrival of the other emergency services, a situation that occurred 8 times (10%).

#### **7.6.2.2.2 Firefighters – Analysis per time frame**

Firefighters arrived first more frequently from 17:00 to 01:00 h (68%) and from 9:00 to 17:00 h (54%) and arrived first less frequently from 01:00-09:00 h (38%).

Firefighters arrived third 3 times (13%) from 01:00-09:00 h - 2 times in the NUTS Oeste and once in Baixo Mondego – 5 times (5%) from 9:00-17:00 h – once each in the NUTS of Algarve, Alto Alentejo, Grande Porto, Pinhal Interior Norte and Pinhal Litoral.

#### **7.6.2.2.3 Firefighters – Analysis per call language**

The emergency call language did not affect the order in which Firefighters arrived on location.

**Table 40 - Per Scenario (178 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters compared With the Other Emergency Services - Scenario																			Arrivals
	First						Second						Third							
	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total		
Alentejo Central	2 100%					2 50%			2 100%			2 50%							4	
Alentejo Litoral									2 100%			2 100%							2	
Algarve	5 83%		1 17%			6 60%	1 33%		2 67%			3 30%			1 100%			1 10%	10	
Alto Alentejo	1 100%					1 25%			2 100%			2 50%			1 100%			1 25%	4	
Alto Trás Montes	1 50%			1 50%		2 100%													2	
Ave									2 100%			2 100%							2	
Baixo Alentejo									3 75%	1 25%		4 100%							4	
Baixo Mondego	2 67%			1 33%		3 38%			2 50%	2 50%		4 50%			1 100%			1 13%	8	
Baixo Vouga	5 71%		2 29%			7 78%	1 50%		1 50%			2 22%							9	
Beira Interior Norte																			0	
Cávado	2 100%					2 50%			2 100%			2 50%							4	
Cova da Beira	1 100%					1 50%			1 100%			1 50%							2	
Dão Lafões	1 100%					1 33%	1 50%		1 50%			2 67%							3	
Douro	1 100%					1 100%													1	
Entre Douro e Vouga			1 50%	1 50%		2 100%													2	
Grande Lisboa	18 69%		5 19%	2 8%	1 4%	26 84%	1 20%		4 80%			5 16%							31	
Grande Porto	5 56%		1 11%	1 11%	2 22%	9 41%	5 42%		7 58%			12 55%			1 100%			1 5%	22	
Lezíria Tejo	1 50%			1 50%		2 50%	1 50%		1 50%			2 50%							4	
Médio Tejo	3 100%					3 60%	2 100%					2 40%							5	
Minho-Lima					1 100%	1 50%			1 100%			1 50%							2	
Oeste	2 33%		3 50%	1 17%		6 75%									2 100%			2 25%	8	
Pinhal Interior Norte			1 100%			1 50%									1 100%			1 50%	2	
Pinhal Interior Sul			1 50%	1 50%		2 50%	1 50%		1 50%			2 50%							4	
Pinhal Litoral		1 17%	4 67%		1 17%	6 55%	2 50%	1 25%	1 25%			4 36%			1 100%			1 9%	11	
Serra da Estrela	1 33%		2 67%			3 60%			2 100%			2 40%							5	
Setúbal	6 60%	1 10%	2 20%		1 10%	10 56%	2 25%		6 75%			8 44%							18	
Tâmega	2 67%		1 33%			3 33%	1 17%		5 83%			6 67%							9	
Total	59 59%	2 2%	24 24%	9 9%	6 6%	100 56%	18 26%	1 1%	48 69%	3 4%		70 39%			8 100%			8 4%	178	



**Table 41 - Per Scenario (178 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters compared with the Other Emergency Services - Scenario																				Cheg
	Scenario 1				Scenario 2				Scenario 3				Scenario 4				Scenario 5				
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	
Alentejo Central	2 100%			2 50%				0 0%		2 100%		2 50%				0 0%				0 0%	4
Alentejo Litoral				0 0%				0 0%		2 100%		2 100%				0 0%				0 0%	2
Algarve	5 83%	1 17%		6 60%				0 0%	1 25%	2 50%	1 25%	4 40%				0 0%				0 0%	10
Alto Alentejo	1 100%			1 25%				0 0%		2 67%	1 33%	3 75%				0 0%				0 0%	4
Alto Trás Montes	1 100%			1 50%				0 0%				0 0%	1 100%			1 50%				0 0%	2
Ave				0 0%				0 0%		2 100%		2 100%				0 0%				0 0%	2
Baixo Alentejo				0 0%				0 0%		3 100%		3 75%		1 100%		1 25%				0 0%	4
Baixo Mondego	2 100%			2 25%				0 0%		2 67%	1 33%	3 38%	1 33%	2 67%		3 38%				0 0%	8
Baixo Vouga	5 83%	1 17%		6 67%				0 0%	2 67%	1 33%		3 33%				0 0%				0 0%	9
Beira Interior Norte				0 0%				0 0%				0 0%				0 0%				0 0%	0
Cávado	2 100%			2 50%				0 0%		2 100%		2 50%				0 0%				0 0%	4
Cova da Beira	1 100%			1 50%				0 0%		1 100%		1 50%				0 0%				0 0%	2
Dão Lafões	1 50%	1 50%		2 67%				0 0%		1 100%		1 33%				0 0%				0 0%	3
Douro	1 100%			1 100%				0 0%				0 0%				0 0%				0 0%	1
Entre Douro e Vouga				0 0%				0 0%	1 100%			1 50%	1 100%			1 50%				0 0%	2
Grande Lisboa	18 95%	1 5%		19 61%				0 0%	5 56%	4 44%		9 29%	2 100%			2 6%	1 100%			1 3%	31
Grande Porto	5 50%	5 50%		10 45%				0 0%	1 11%	7 78%	1 11%	9 41%	1 100%			1 5%	2 100%			2 9%	22
Lezíria Tejo	1 50%	1 50%		2 50%				0 0%		1 100%		1 25%	1 100%			1 25%				0 0%	4
Médio Tejo	3 60%	2 40%		5 100%				0 0%				0 0%				0 0%				0 0%	5
Minho-Lima				0 0%				0 0%		1 100%		1 50%				0 0%	1 100%			1 50%	2
Oeste	2 100%			2 25%				0 0%	3 60%		2 40%	5 63%	1 100%			1 13%				0 0%	8
Pinhal Interior Norte				0 0%				0 0%	1 50%		1 50%	2 100%				0 0%				0 0%	2
Pinhal Interior Sul		1 100%		1 25%				0 0%	1 50%	1 50%		2 50%	1 100%			1 25%				0 0%	4
Pinhal Litoral		2 100%		2 18%	1 50%	1 50%		2 18%	4 67%	1 17%	1 17%	6 55%				0 0%	1 100%			1 9%	11
Serra da Estrela	1 100%			1 20%				0 0%	2 50%	2 50%		4 80%				0 0%				0 0%	5
Setúbal	6 75%	2 25%		8 44%	1 100%			1 6%	2 25%	6 75%		8 44%				0 0%	1 100%			1 6%	18
Tâmega	2 67%	1 33%		3 33%				0 0%	1 17%	5 83%		6 67%				0 0%				0 0%	9
Total	59 77%	18 23%		77 43%	2 67%	1 33%		3 2%	24 30%	48 60%	8 10%	80 45%	9 75%	3 25%		12 7%	6 100%			6 3%	178

**Table 42 - Per Time Frame (178 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters Compared With the Other Emergency Services - Tme Frame												
	First				Second				Third				Arrivals
	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total	
Alentejo Central	1 50%	1 50%		2 50%	1 50%		1 50%	2 50%					4
Alentejo Litoral					1 50%		1 50%	2 100%					2
Algarve	3 50%	2 33%	1 17%	6 60%	2 67%		1 33%	3 30%	1 100%			1 10%	10
Alto Alentejo	1 100%			1 25%	1 50%	1 50%		2 50%	1 100%			1 25%	4
Alto Trás Montes		2 100%		2 100%									2
Ave						1 50%	1 50%	2 100%					2
Baixo Alentejo					1 25%	2 50%	1 25%	4 100%					4
Baixo Mondego	1 33%	2 67%		3 38%	2 50%	1 25%	1 25%	4 50%			1 100%	1 13%	8
Baixo Vouga	5 71%	2 29%		7 78%	1 50%	1 50%		2 22%					9
Beira Interior Norte													0
Cávado		2 100%		2 50%		1 50%	1 50%	2 50%					4
Cova da Beira	1 100%			1 50%	1 100%			1 50%					2
Dão Lafões		1 100%		1 33%	2 100%			2 67%					3
Douro	1 100%			1 100%									1
Entre Douro e Vouga		1 50%	1 50%	2 100%									2
Grande Lisboa	14 54%	9 35%	3 12%	26 84%	2 40%	3 60%		5 16%					31
Grande Porto	3 33%	5 56%	1 11%	9 41%	9 75%	2 17%	1 8%	12 55%	1 100%			1 5%	22
Lezíria Tejo	1 50%	1 50%		2 100%									2
Médio Tejo	3 100%			3 60%	2 100%			2 40%					5
Minho-Lima	1 100%			1 33%	1 50%	1 50%		2 67%					3
Oeste	3 50%	3 50%		6 67%			1 100%	1 11%			2 100%	2 22%	9
Pinhal Interior Norte	1 100%			1 50%					1 100%			1 50%	2
Pinhal Interior Sul		1 50%	1 50%	2 50%	2 100%			2 50%					4
Pinhal Litoral	3 50%	2 33%	1 17%	6 55%	2 50%	2 50%		4 36%	1 100%			1 9%	11
Serra da Estrela	2 67%		1 33%	3 60%	1 50%	1 50%		2 40%					5
Setúbal	5 50%	5 50%		10 56%	5 63%	1 13%	2 25%	8 44%					18
Tâmega	3 100%			3 33%	4 67%	1 17%	1 17%	6 67%					9
Total	52 52%	39 39%	9 9%	100 56%	40 57%	18 26%	12 17%	70 39%	5 63%	0 0%	3 38%	8 4%	178

**Table 43 - Per Time Frame (178 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters Compared With the Other Emergency Services - Time Frame													Arrivals
	09H00 : 17H00				17H00 : 01H00				01H00 : 09H00					
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total		
Alentejo Central	1 50%	1 50%		2 50%	1 100%			1 25%		1 100%		1 25%	4	
Alentejo Litoral		1 100%		1 50%				0 0%		1 100%		1 50%	2	
Algarve	3 50%	2 33%	1 17%	6 60%	2 100%			2 20%	1 50%	1 50%		2 20%	10	
Alto Alentejo	1 33%	1 33%	1 33%	3 75%		1 100%		1 25%				0 0%	4	
Alto Trás Montes				0 0%	2 100%			2 100%				0 0%	2	
Ave				0 0%		1 100%		1 50%		1 100%		1 50%	2	
Baixo Alentejo		1 100%		1 25%		2 100%		2 50%		1 100%		1 25%	4	
Baixo Mondego	1 33%	2 67%		3 38%	2 67%	1 33%		3 38%		1 50%	1 50%	2 25%	8	
Baixo Vouga	5 83%	1 17%		6 67%	2 67%	1 33%		3 33%				0 0%	9	
Beira Interior Norte				0 0%				0 0%				0 0%	0	
Cávado				0 0%	2 67%	1 33%		3 75%		1 100%		1 25%	4	
Cova da Beira	1 50%	1 50%		2 100%				0 0%				0 0%	2	
Dão Lafões		2 100%		2 67%	1 100%			1 33%				0 0%	3	
Douro	1 100%			1 100%				0 0%				0 0%	1	
Entre Douro e Vouga				0 0%	1 100%			1 50%	1 100%			1 50%	2	
Grande Lisboa	14 88%	2 13%		16 52%	9 75%	3 25%		12 39%	3 100%			3 10%	31	
Grande Porto	3 23%	9 69%	1 8%	13 59%	5 71%	2 29%		7 32%	1 50%	1 50%		2 9%	22	
Lezíria Tejo	1 100%			1 50%	1 100%			1 50%				0 0%	2	
Médio Tejo	3 60%	2 40%		5 100%				0 0%				0 0%	5	
Minho-Lima	1 50%	1 50%		2 67%		1 100%		1 33%				0 0%	3	
Oeste	3 100%			3 33%	3 100%			3 33%		1 33%	2 67%	3 33%	9	
Pinhal Interior Norte	1 50%		1 50%	2 100%				0 0%				0 0%	2	
Pinhal Interior Sul		2 100%		2 50%	1 100%			1 25%	1 100%			1 25%	4	
Pinhal Litoral	3 50%	2 33%	1 17%	6 55%	2 50%	2 50%		4 36%	1 100%			1 9%	11	
Serra da Estrela	2 67%	1 33%		3 60%		1 100%		1 20%	1 100%			1 20%	5	
Setúbal	5 50%	5 50%		10 56%	5 83%	1 17%		6 33%		2 100%		2 11%	18	
Tâmega	3 43%	4 57%		7 78%		1 100%		1 11%		1 100%		1 11%	9	
Total	52 54%	40 41%	5 5%	97 54%	39 68%	18 32%	0 0%	57 32%	9 38%	12 50%	3 13%	24 13%	178	

**Table 44 - Per Language (177 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters Compared With the Other Emergency Services - Language															
	First					Second					Third					Arrivals
	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total	
Alentejo Central	2 100%				2 50%	2 100%				2 50%					0%	4
Alentejo Litoral						2 100%				2 100%						2
Algarve	4 67%	2 33%			6 60%	2 67%	1 33%			3 30%	1 100%				1 10%	10
Alto Alentejo	1 100%				1 25%	1 50%	1 50%			2 50%	1 100%				1 25%	4
Alto Trás Montes	2 100%				2 100%											2
Ave						2 100%				2 100%						2
Baixo Alentejo						4 100%				4 100%						4
Baixo Mondego						4 100%				4 80%	1 100%				1 20%	5
Baixo Vouga	3 100%				3 60%	2 100%				2 40%						5
Beira Interior Norte	6 86%	1 14%			7 100%											7
Cávado	1 50%	1 50%			2 50%	2 100%				2 50%						4
Cova da Beira	1 100%				1 50%	1 100%				1 50%						2
Dão Lafões	1 100%				1 33%	2 100%				2 67%						3
Douro	1 100%				1 100%											1
Entre Douro e Vouga	2 100%				2 100%											2
Grande Lisboa	17 65%	4 15%	2 8%	3 12%	26 84%	2 40%		2 40%	1 20%	5 16%						31
Grande Porto	6 67%	1 11%	2 22%		9 41%	9 75%	2 17%		1 833%	12 55%			1 100%		1 5%	22
Lezíria Tejo	2 100%				2 100%											2
Médio Tejo	2 67%			1 33%	3 60%	2 100%				2 40%						5
Minho-Lima	1 100%				1 33%	2 100%				2 67%						3
Oeste	6 100%				6 67%				1 100%	1 11%		2 100%			2 22%	9
Pinhal Interior Norte	1 100%				1 50%						1 100%				1 50%	2
Pinhal Interior Sul	1 50%		1 50%		2 50%	2 100%				2 50%						4
Pinhal Litoral	5 83%		1 17%		6 55%	2 50%	1 25%	1 25%		4 36%	1 100%				1 9%	11
Serra da Estrela	3 100%				3 60%	1 50%	1 50%			2 40%						5
Setúbal	6 67%	2 22%	1 11%		9 53%	6 75%		2 25%		8 47%						17
Tâmega	2 67%	1 33%			3 33%	6 100%				6 67%						9
Total	76 77%	12 12%	7 7%	4 4%	99 56%	54 77%	8 11%	5 7%	3 4%	70 40%	5 63%	2 25%	1 13%	0 0%	8 5%	177

**Table 45 - Per Language (177 arrivals - 19%)** (in 957 emergency calls)

NUTS III	Arrival of Firefighters Compared With The Other Emergency Services - Language																	Arrivals
	Portuguese				English				French				Spanish					
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total		
Alentejo Central	2 100%			2 50%		2 100%		2 50%				0 0%				0 0%	4	
Alentejo Litoral		2 100%		2 100%				0 0%				0 0%				0 0%	2	
Algarve	4 57%	2 29%	1 14%	7 70%	2 67%	1 33%		3 30%				0 0%				0 0%	10	
Alto Alentejo	1 33%	1 33%	1 33%	3 75%		1 100%		1 25%				0 0%				0 0%	4	
Alto Trás Montes	2 100%			2 100%				0 0%				0 0%				0 0%	2	
Ave		2 100%		2 100%				0 0%				0 0%				0 0%	2	
Baixo Alentejo		4 100%		4 100%				0 0%				0 0%				0 0%	4	
Baixo Mondego		4 80%	1 20%	5 100%				0 0%				0 0%				0 0%	5	
Baixo Vouga	3 60%	2 40%		5 100%				0 0%				0 0%				0 0%	5	
Beira Interior Norte	6 100%			6 86%	1 100%			1 14%				0 0%				0 0%	7	
Cávado	1 33%	2 67%		3 75%	1 100%			1 25%				0 0%				0 0%	4	
Cova da Beira	1 50%	1 50%		2 100%				0 0%				0 0%				0 0%	2	
Dão Lafões	1 33%	2 67%		3 100%				0 0%				0 0%				0 0%	3	
Douro	1 100%			1 100%				0 0%				0 0%				0 0%	1	
Entre Douro e Vouga	2 100%			2 100%				0 0%				0 0%				0 0%	2	
Grande Lisboa	17 89%	2 11%		19 61%	4 100%			4 13%	2 50%	2 50%		4 13%	3 75%	1 25%		4 13%	31	
Grande Porto	6 40%	9 60%		15 68%	1 33%	2 67%		3 14%	2 67%		1 33%	3 14%		1 100%		1 5%	22	
Lezíria Tejo	2 100%			2 100%				0 0%				0 0%				0 0%	2	
Médio Tejo	2 50%	2 50%		4 80%				0 0%				0 0%	1 100%			1 20%	5	
Minho-Lima	1 33%	2 67%		3 100%				0 0%				0 0%				0 0%	3	
Oeste	6 100%			6 67%			2 100%	2 22%				0 0%		1 100%		1 11%	9	
Pinhal Interior Norte	1 50%		1 50%	2 100%				0 0%				0 0%				0 0%	2	
Pinhal Interior Sul	1 33%	2 67%		3 75%				0 0%	1 100%			1 25%				0 0%	4	
Pinhal Litoral	5 63%	2 25%	1 13%	8 73%		1 100%		1 9%	1 50%	1 50%		2 18%				0 0%	11	
Serra da Estrela	3 75%	1 25%		4 80%		1 100%		1 20%				0 0%				0 0%	5	
Setúbal	6 50%	6 50%		12 71%	2 100%			2 12%	1 33%	2 67%		3 18%				0 0%	17	
Tâmega	2 25%	6 75%		8 89%	1 100%			1 11%				0 0%				0 0%	9	
Total	76 56%	54 40%	5 4%	135 76%	12 55%	8 36%	2 9%	22 12%	7 54%	5 38%	1 8%	13 7%	4 57%	3 43%	0 0%	7 4%	177	

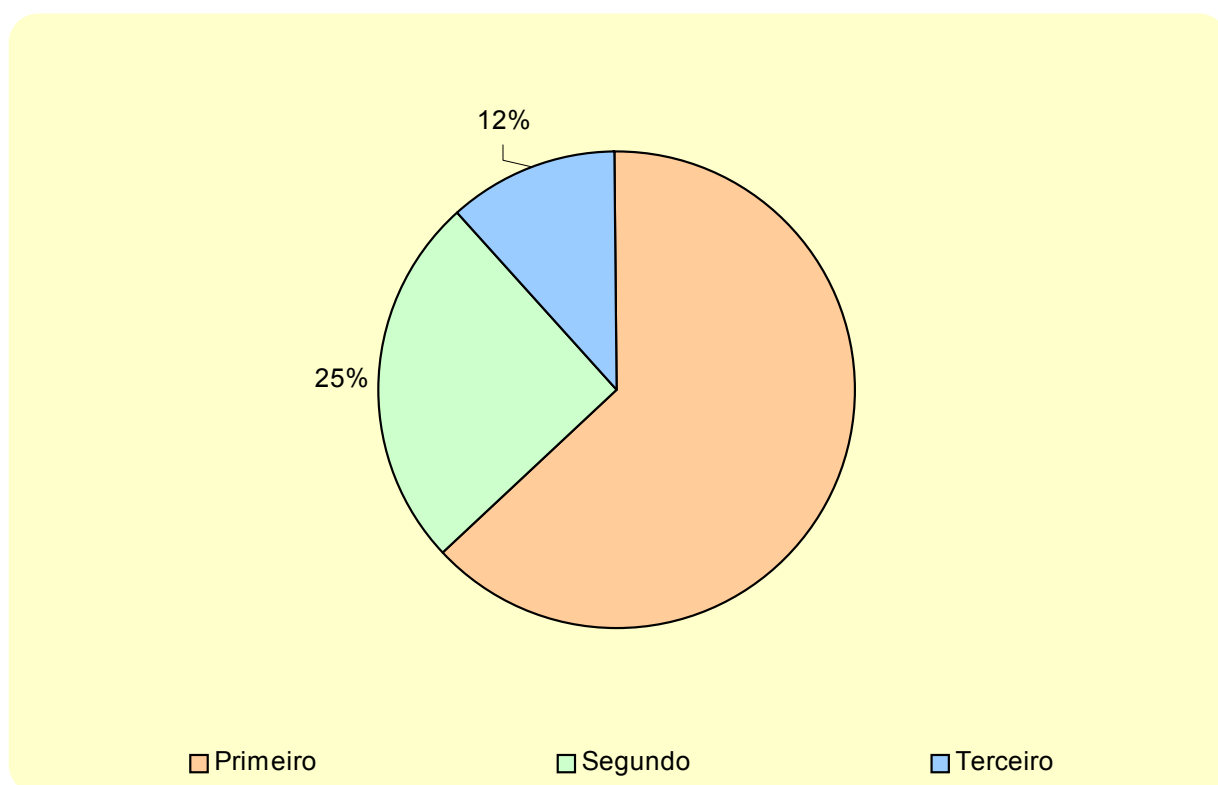
### 7.6.2.3 Police – General analysis

Of the 786 emergency actions, the Police participated in 255 (32%). This was 27% of all checks.

Police arrived first in 63% (160) of the times in which it participated. However, in 12% of times (30) it arrived in third (and last) place compared with the other emergency services.

An analysis per NUTS reveals that it was systematically (100%) the first service to arrive in Ave (4 arrivals) and Cova da Beira (2 arrivals).

**Graph 9 – Police arrival – General analysis**



**Table 46 - Police Arrival** (255 of 957 calls - 27%)  
(32% of 786 rescues)

	Police - General				
	First	Second	Third	Total	Rescues
Alentejo Central	4 67%	1 17%	1 17%	6 35%	17
Alentejo Litoral			1 100%	1 11%	9
Algarve	9 50%	6 33%	3 17%	18 45%	40
Alto Alentejo	2 50%	2 50%		4 36%	11
Alto Trás Montes	4 80%	1 20%		5 38%	13
Ave	4 100%			4 27%	15
Baixo Alentejo	2 33%	1 17%	3 50%	6 75%	8
Baixo Mondego	6 46%	4 31%	3 23%	13 35%	37
Baixo Vouga	3 43%	2 29%	2 29%	7 23%	30
Beira Interior Norte					1
Cávado	4 50%	3 38%	1 13%	8 40%	20
Cova da Beira	2 100%			2 22%	9
Dão Lafões	2 29%	3 43%	2 29%	7 28%	25
Douro	1 50%	1 50%		2 13%	16
Entre Douro e Vouga	1 50%	1 50%		2 14%	14
Grande Lisboa	29 73%	8 20%	3 8%	40 26%	151
Grande Porto	39 87%	3 7%	3 7%	45 44%	102
Lezíria Tejo	6 75%	2 25%		8 36%	22
Médio Tejo	6 67%	3 33%		9 47%	19
Minho-Lima	5 56%	4 44%		9 43%	21
Oeste	1 14%	6 86%		7 22%	32
Pinhal Interior Norte	3 50%	3 50%		6 40%	15
Pinhal Interior Sul	1 20%	2 40%	2 40%	5 56%	9
Pinhal Litoral	9 64%	4 29%	1 7%	14 47%	30
Serra da Estrela	1 33%	1 33%	1 33%	3 38%	8
Setúbal	13 72%	2 11%	3 17%	18 27%	66
Tâmega	3 50%	2 33%	1 17%	6 13%	46
<b>Total</b>	<b>160 63%</b>	<b>65 25%</b>	<b>30 12%</b>	<b>255 32%</b>	<b>786</b>

#### **7.6.2.3.1 Police – Analysis per scenario**

Police arrived more frequently in scenarios 2 (39%) and 3 (37%) and less in scenarios 4 (4% - 9 arrivals) and 5 (0.4% - 1 arrival).

Police arrived more often in first place in scenarios 2 (97%) and 4 (78%); followed by scenarios 1 (57%) and 3 (29%). On the other hand, it arrived third in scenarios 3 (25%), 4 (22%) and 1 (9%).

#### **7.6.2.3.2 Police – Analysis per time frame**

The call's time frame does not affect the Police's response.

#### **7.6.2.3.3 Police – Analysis per call language**

The call language does influence the arrival of the Police at the rescue sight.



**Table 47 - Per Scenario (254 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrival Compared With the Other Emergency Services - Scenario																		Arrivals
	First						Second						Third						
	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total	C 1	C 2	C 3	C 4	C 5	Total	
Alentejo Central		3				3	1					1			1			1	5
		100%				60%	100%					20%			100%			20%	
Alentejo Litoral															1			1	1
															100%			100%	
Algarve	2	6	1			9	3		3			6			3			3	18
	22%	67%	11%			50%	50%		50%			33%			100%			17%	
Alto Alentejo		1	1			2	1		1			2							4
		50%	50%			50%	50%		50%			50%							
Alto Trás Montes		2	1	1		4			1			1							5
		50%	25%	25%		80%			100%			20%							
Ave		3	1			4													4
		75%	25%			100%													
Baixo Alentejo		1		1		2			1			1			3			3	6
		50%		50%		33%			100%			17%			100%			50%	
Baixo Mondego		6				6	1		3			4			2	1		3	13
		100%				46%	25%		75%			31%			67%	33%		23%	
Baixo Vouga	1	1	1			3			2			2	1		1			2	7
	33%	33%	33%			43%			100%			29%	50%		50%			29%	
Beira Interior Norte																			0
Cávado		4				4			3			3			1			1	8
		100%				50%			100%			38%			100%			13%	
Cova da Beira		1	1			2													2
		50%	50%			100%													
Dão Lafões		2				2			2		1	3	1		1			2	7
		100%				29%			67%		33%	43%	50%		50%			29%	
Douro		1				1			1			1							2
		100%				50%			100%			50%							
Entre Douro e Vouga		1				1			1			1							2
		100%				50%			100%			50%							
Grande Lisboa	4	21	4			29	4	2	2			8	2		1			3	40
	14%	72%	14%			73%	50%	25%	25%			20%	67%		33%			8%	
Grande Porto	13	18	4	4		39	2		1			3			3			3	45
	33%	46%	10%	10%		87%	67%		33%			7%			100%			7%	
Lezíria Tejo		6				6	1		1			2							8
		100%				75%	50%		50%			25%							
Médio Tejo	1	3	2			6	2		1			3							9
	17%	50%	33%			67%	67%		33%			33%							
Minho-Lima	3		2			5			4			4							9
	60%		40%			56%			100%			44%							
Oeste			1			1	1		5			6							7
			100%			14%	17%		83%			86%							
Pinhal Interior Norte		2	1			3			3			3							6
		67%	33%			50%			100%			50%							
Pinhal Interior Sul	1					1			2			2			1	1		2	5
	100%					20%			100%			40%			50%	50%		40%	
Pinhal Litoral	3	1	4	1		9	1	1	2			4			1			1	14
	33%	11%	44%	11%		64%	25%	25%	50%			29%			100%			7%	
Serra da Estrela			1			1			1			1			1			1	3
			100%			33%			100%			33%			100%			33%	
Setúbal	2	11				13	1		1			2	1		2			3	18
	15%	85%				72%	50%		50%			11%	33%		67%			17%	
Tâmega		1	2			3			2			2			1			1	6
		33%	67%			50%			100%			33%			100%			17%	
Total	30	95	27	7	0	159	18	3	43	0	1	65	5	0	23	2	0	30	254
	19%	60%	17%	4%	0%	63%	28%	5%	66%	0%	2%	26%	17%	0%	77%	7%	0%	12%	

**Table 48 - Per Scenario (254 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrivals Compared With the Other Emergency Services - Scenario																				Arrivals
	Scenario 1				Scenario 2				Scenario 3				Scenario 4				Scenario 5				
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	
Alentejo Central		1		1	3			3			1	1				0				0	5
Alentejo Litoral		100%		20%	100%			60%			100%	20%				0%				0%	1
				0%				0%			100%	100%				0%				0%	
Algarve	2	3		5	6			6	1	3	3	7				0				0	18
	40%	60%		28%	100%			33%	14%	43%	43%	39%				0%				0%	
Alto Alentejo		1		1	1			1	1	1		2				0				0	4
		100%		25%	100%			25%	50%	50%		50%				0%				0%	
Alto Trás Montes				0	2			2	1	1		2	1			1				0	5
				0%	100%			40%	50%	50%		40%	100%			20%				0%	
Ave				0	3			3	1			1				0				0	4
				0%	100%			75%	100%			25%				0%				0%	
Baixo Alentejo				0	1			1		1	3	4	1			1				0	6
				0%	100%			17%		25%	75%	67%	100%			17%				0%	
Baixo Mondego		1		1	6			6		3	2	5			1	1				0	13
		100%		8%	100%			46%		60%	40%	38%			100%	8%				0%	
Baixo Vouga	1		1	2	1			1	1	2	1	4				0				0	7
	50%		50%	29%	100%			14%	25%	50%	25%	57%				0%				0%	
Beira Interior Norte				0				0				0				0				0	0
				0%				0%				0%				0%				0%	
Cávado				0	4			4		3	1	4				0				0	8
				0%	100%			50%		75%	25%	50%				0%				0%	
Cova da Beira				0	1			1	1			1				0				0	2
				0%	100%			50%	100%			50%				0%				0%	
Dão Lafões			1	1	2			2		2	1	3				0		1		1	7
			100%	14%	100%			29%		67%	33%	43%				0%		100%		14%	
Douro				0	1			1		1		1				0				0	2
				0%	100%			50%		100%		50%				0%				0%	
Entre Douro e Vouga				0	1			1		1		1				0				0	2
				0%	100%			50%		100%		50%				0%				0%	
Grande Lisboa	4	4	2	10	21	2		23	4	2	1	7				0				0	40
	40%	40%	20%	25%	91%	9%		58%	57%	29%	14%	18%				0%				0%	
Grande Porto	13	2		15	18			18	4	1	3	8	4			4				0	45
	87%	13%		33%	100%			40%	50%	13%	38%	18%	100%			9%				0%	
Lezíria Tejo		1		1	6			6		1		1				0				0	8
		100%		13%	100%			75%		100%		13%				0%				0%	
Médio Tejo	1	2		3	3			3	2	1		3				0				0	9
	33%	67%		33%	100%			33%	67%	33%		33%				0%				0%	
Minho-Lima	3			3				0	2	4		6				0				0	9
	100%			33%				0%	33%	67%		67%				0%				0%	
Oeste		1		1				0	1	5		6				0				0	7
		100%		14%				0%	17%	83%		86%				0%				0%	
Pinhal Interior Norte				0	2			2	1	3		4				0				0	6
				0%	100%			33%	25%	75%		67%				0%				0%	
Pinhal Interior Sul	1			1				0		2	1	3			1	1				0	5
	100%			20%				0%		67%	33%	60%			100%	20%				0%	
Pinhal Litoral	3	1		4	1	1		2	4	2	1	7	1			1				0	14
	75%	25%		29%	50%	50%		14%	57%	29%	14%	50%	100%			7%				0%	
Serra da Estrela				0				0	1	1	1	3				0				0	3
				0%				0%	33%	33%	33%	100%				0%				0%	
Setúbal	2	1	1	4	11			11		1	2	3				0				0	18
	50%	25%	25%	22%	100%			61%		33%	67%	17%				0%				0%	
Tâmega				0	1			1	2	2	1	5				0				0	6
				0%	100%			17%	40%	40%	20%	83%				0%				0%	
Total	30	18	5	53	95	3	0	98	27	43	23	93	7	0	2	9	0	1	0	1	254
	57%	34%	9%	21%	97%	3%	0%	39%	29%	46%	25%	37%	78%	0%	22%	4%	0%	100%	0%	0%	

**Table 49 - Per Time Frame (255 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrival Compared With the Other Emergency Services - Time Frame													Arrival
	First				Second				Third					
	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total	09H00 17H00	17H00 01H00	01H00 09H00	Total		
Alentejo Central	2 50%	2 50%		4 67%	1 100%			1 17%	1 100%			1 17%	6	
Alentejo Litoral									1 100%			1 100%	1	
Algarve	1 11%	4 44%	4 44%	9 50%	3 50%	2 33%	1 17%	6 33%	2 67%		1 33%	3 17%	18	
Alto Alentejo	1 50%	1 50%		2 50%	2 100%			2 50%					4	
Alto Trás Montes	1 25%	2 50%	1 25%	4 80%			1 100%	1 20%					5	
Ave	1 25%	1 25%	2 50%	4 100%									4	
Baixo Alentejo		2 100%		2 33%		1 100%		1 17%	1 33%	1 33%	1 33%	3 50%	6	
Baixo Mondego	3 50%	2 33%	1 17%	6 46%	3 75%		1 25%	4 31%	2 67%	1 33%		3 23%	13	
Baixo Vouga	2 67%	1 33%		3 43%	1 50%	1 50%		2 29%		2 100%		2 29%	7	
Beira Interior Norte													0	
Cávado	1 25%	1 25%	2 50%	4 50%	2 67%	1 33%		3 38%			1 100%	1 13%	8	
Cova da Beira	1 50%	1 50%		2 100%									2	
Dão Lafões	1 50%		1 50%	2 29%	1 33%	1 33%	1 33%	3 43%	1 50%	1 50%		2 29%	7	
Douro		1 100%		1 50%		1 100%		1 50%					2	
Entre Douro e Vouga	1 100%			1 50%			1 100%	1 50%					2	
Grande Lisboa	19 66%	10 34%		29 73%	4 50%	2 25%	2 25%	8 20%	1 33%	2 67%		3 8%	40	
Grande Porto	15 38%	12 31%	12 31%	39 87%		3 100%		3 7%	3 100%			3 7%	45	
Lezíria Tejo	4 67%	2 33%		6 75%	1 50%	1 50%		2 25%					8	
Médio Tejo	5 83%	1 17%		6 67%	3 100%			3 33%					9	
Minho-Lima	2 40%	3 60%		5 56%	1 25%	1 25%	2 50%	4 44%					9	
Oeste			1 100%	1 14%	4 67%	1 17%	1 17%	6 86%					7	
Pinhal Interior Norte	2 67%		1 33%	3 50%	1 33%	2 67%		3 50%					6	
Pinhal Interior Sul	1 100%			1 20%		2 100%		2 40%	1 50%		1 50%	2 40%	5	
Pinhal Litoral	6 67%	2 22%	1 11%	9 64%	1 25%	2 50%	1 25%	4 29%		1 100%		1 7%	14	
Serra da Estrela	1 100%			1 33%			1 100%	1 33%	1 100%			1 33%	3	
Setúbal	6 46%	7 54%		13 72%		1 50%	1 50%	2 11%	2 67%		1 33%	3 17%	18	
Tâmega	1 33%	1 33%	1 33%	3 50%	1 50%	1 50%		2 33%	1 100%			1 17%	6	
Total	77 48%	56 35%	27 17%	160 63%	29 45%	23 35%	13 20%	65 25%	17 57%	8 27%	5 17%	30 12%	255	

**Table 50 - Per Time Frame (255 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrivals Compared With Other Emergency Services - Time Frame												Arrivals
	09H00 : 17H00				17H00 : 01H00				01H00 : 09H00				
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	
Alentejo Central	2 50%	1 25%	1 25%	4 67%	2 100%			2 33%				0 0%	6
Alentejo Litoral			1 100%	1 100%				0 0%				0 0%	1
Algarve	1 17%	3 50%	2 33%	6 33%	4 67%	2 33%		6 33%	4 67%	1 17%	1 17%	6 33%	18
Alto Alentejo	1 33%	2 67%		3 75%	1 100%			1 25%				0 0%	4
Alto Trás Montes	1 100%			1 20%	2 100%			2 40%	1 50%	1 50%		2 40%	5
Ave	1 100%			1 25%	1 100%			1 25%	2 100%			2 50%	4
Baixo Alentejo			1 100%	1 17%	2 50%	1 25%	1 25%	4 67%			1 100%	1 17%	6
Baixo Mondego	3 38%	3 38%	2 25%	8 62%	2 67%		1 33%	3 23%	1 50%	1 50%		2 15%	13
Baixo Vouga	2 67%	1 33%		3 43%	1 25%	1 25%	2 50%	4 57%				0 0%	7
Beira Interior Norte				0 0%				0 0%				0 0%	0
Cávado	1 33%	2 67%		3 38%	1 50%	1 50%		2 25%	2 67%		1 33%	3 38%	8
Cova da Beira	1 100%			1 50%	1 100%			1 50%				0 0%	2
Dão Lafões	1 33%	1 33%	1 33%	3 43%		1 50%	1 50%	2 29%	1 50%	1 50%		2 29%	7
Douro				0 0%	1 50%	1 50%		2 100%				0 0%	2
Entre Douro e Vouga	1 100%			1 50%				0 0%		1 100%		1 50%	2
Grande Lisboa	19 79%	4 17%	1 4%	24 60%	10 71%	2 14%	2 14%	14 35%		2 100%		2 5%	40
Grande Porto	15 83%		3 17%	18 40%	12 80%	3 20%		15 33%	12 100%			12 27%	45
Lezíria Tejo	4 80%	1 20%		5 63%	2 67%	1 33%		3 38%				0 0%	8
Médio Tejo	5 63%	3 38%		8 89%	1 100%			1 11%				0 0%	9
Minho-Lima	2 67%	1 33%		3 33%	3 75%	1 25%		4 44%		2 100%		2 22%	9
Oeste		4 100%		4 57%		1 100%		1 14%	1 50%	1 50%		2 29%	7
Pinhal Interior Norte	2 67%	1 33%		3 50%		2 100%		2 33%	1 100%			1 17%	6
Pinhal Interior Sul	1 50%		1 50%	2 40%		2 100%		2 40%			1 100%	1 20%	5
Pinhal Litoral	6 86%	1 14%		7 50%	2 40%	2 40%	1 20%	5 36%	1 50%	1 50%		2 14%	14
Serra da Estrela	1 50%		1 50%	2 67%				0 0%		1 100%		1 33%	3
Setúbal	6 75%		2 25%	8 44%	7 88%	1 13%		8 44%		1 50%	1 50%	2 11%	18
Tâmega	1 33%	1 33%	1 33%	3 50%	1 50%	1 50%		2 33%	1 100%			1 17%	6
Total	77 63%	29 24%	17 14%	123 48%	56 64%	23 26%	8 9%	87 34%	27 60%	13 29%	5 11%	45 18%	255

**Table 51 - Per Language (254 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrivals Compared With Other Emergency Services - Language																Arrivals
	First					Second					Third						
	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total	Port.	Eng.	French	Span.	Total		
Alentejo Central	2 67%			1 33%	3 60%	1 100%				1 20%		1 100%			1 20%	5	
Alentejo Litoral											1 100%				1 100%	1	
Algarve	7 78%	1 11%		1 11%	9 50%	4 67%	2 33%			6 33%	1 33%	2 67%			3 17%	18	
Alto Alentejo	1 50%	1 50%			2 50%	2 100%				2 50%						4	
Alto Trás Montes	1 25%	1 25%	1 25%	1 25%	4 80%	1 100%				1 20%						5	
Ave	3 75%		1 25%		4 100%											4	
Baixo Alentejo	2 100%				2 33%	1 100%				1 17%	3 100%				3 50%	6	
Baixo Mondego	5 83%	1 17%			6 46%	4 100%				4 31%	3 100%				3 23%	13	
Baixo Vouga	2 67%	1 33%			3 43%	1 50%	1 50%			2 29%	2 100%				2 29%	7	
Beira Interior Norte																0	
Cávado	4 100%				4 50%	2 67%		1 33%		3 38%	1 100%				1 13%	8	
Cova da Beira	2 100%				2 100%											2	
Dão Lafões	2 100%				2 29%	2 67%		1 33%		3 43%	2 100%				2 29%	7	
Douro	1 100%				1 50%	1 100%				1 50%						2	
Entre Douro e Vouga	1 100%				1 50%	1 100%				1 50%						2	
Grande Lisboa	22 76%	1 3%	2 7%	4 14%	29 73%	6 75%		1 13%	1 13%	8 20%	2 67%		1 33%		3 8%	40	
Grande Porto	27 69%	8 21%	1 3%	3 8%	39 87%	1 33%		2 67%		3 7%	2 67%	1 33%			3 7%	45	
Lezíria Tejo	5 83%	1 17%			6 75%	2 100%				2 25%						8	
Médio Tejo	6 100%				6 67%	3 100%				3 33%						9	
Minho-Lima	3 60%	1 20%	1 20%		5 56%	3 75%		1 25%		4 44%						9	
Oeste		1 100%			1 14%	5 83%	1 17%			6 86%						7	
Pinhal Interior Norte	3 100%				3 50%	3 100%				3 50%						6	
Pinhal Interior Sul	1 100%				1 20%	1 50%	1 50%			2 40%	1 50%		1 50%		2 40%	5	
Pinhal Litoral	5 56%	1 11%	2 22%	1 11%	9 64%	4 100%				4 29%			1 100%		1 7%	14	
Serra da Estrela	1 100%				1 33%	1 100%				1 33%	1 100%				1 33%	3	
Setúbal	9 69%	1 8%	3 23%		13 72%	2 100%				2 11%	2 67%		1 33%		3 17%	18	
Tâmega	2 67%		1 33%		3 50%	1 50%	1 50%			2 33%	1 100%				1 17%	6	
Total	117 74%	19 12%	12 8%	11 7%	159 63%	52 80%	6 9%	6 9%	1 2%	65 26%	22 73%	4 13%	4 13%		30 12%	254	

**Table 52 - Per Language (254 arrivals - 27%)** (in 957 emergency calls)

NUTS III	Police Arrivals Compared With the Other Emergency Services - Language																	Arrivals
	Portuguese				English				French				Spanish					
	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total	1º	2º	3º	Total		
Alentejo Central	2 67%	1 33%		3 60%			1 100%	1 20%				0 0%	1 100%			1 20%	5	
Alentejo Litoral			1 100%	1 100%				0 0%				0 0%				0 0%	1	
Algarve	7 78%	4 67%	1 33%	12 67%	11 11%	2 33%	2 67%	5 28%				0 0%	1 100%			1 6%	18	
Alto Alentejo	1 50%	2 100%		3 75%	1 50%			1 25%				0 0%				0 0%	4	
Alto Trás Montes	1 25%	1 100%		2 40%	1 25%			1 20%	1 100%			1 20%	1 100%			1 20%	5	
Ave	3 75%			3 75%				0 0%	1 100%			1 25%				0 0%	4	
Baixo Alentejo	2 100%	1 100%	3 100%	6 100%				0 0%				0 0%				0 0%	6	
Baixo Mondego	5 83%	4 100%	3 100%	12 92%	1 17%			1 8%				0 0%				0 0%	13	
Baixo Vouga	2 67%	1 50%	2 100%	5 71%	1 33%	1 50%		2 29%				0 0%				0 0%	7	
Beira Interior Norte				0 0%				0 0%				0 0%				0 0%	0	
Cávado	4 100%	2 67%	1 100%	7 88%				0 0%		1 100%		1 13%				0 0%	8	
Cova da Beira	2 100%			2 100%				0 0%				0 0%				0 0%	2	
Dão Lafões	2 100%	2 67%	2 100%	6 86%				0 0%		1 100%		1 14%				0 0%	7	
Douro	1 100%	1 100%		2 100%				0 0%				0 0%				0 0%	2	
Entre Douro e Vouga	1 100%	1 100%		2 100%				0 0%				0 0%				0 0%	2	
Grande Lisboa	22 76%	6 75%	2 67%	30 75%	1 3%			1 3%	2 50%	1 25%	1 25%	4 10%	4 80%	1 20%		5 13%	40	
Grande Porto	27 69%	1 33%	2 67%	30 67%	8 21%		1 33%	9 20%	1 33%	2 67%		3 7%	3 100%			3 7%	45	
Lezíria Tejo	5 83%	2 100%		7 88%	1 17%			1 13%				0 0%				0 0%	8	
Médio Tejo	6 100%	3 100%		9 100%				0 0%				0 0%				0 0%	9	
Minho-Lima	3 60%	3 75%		6 67%	1 20%			1 11%	1 50%	1 50%		2 22%				0 0%	9	
Oeste		5 83%		5 71%	1 100%	1 17%		2 29%				0 0%				0 0%	7	
Pinhal Interior Norte	3 100%	3 100%		6 100%				0 0%				0 0%				0 0%	6	
Pinhal Interior Sul	1 100%	1 50%	1 50%	3 60%		1 50%		1 20%			1 100%	1 20%				0 0%	5	
Pinhal Litoral	5 56%	4 100%		9 64%	1 11%			1 7%	2 67%		1 33%	3 21%	1 100%			1 7%	14	
Serra da Estrela	1 100%	1 100%	1 100%	3 100%				0 0%				0 0%				0 0%	3	
Setúbal	9 69%	2 100%	2 67%	13 72%	1 8%			1 6%	3 75%		1 25%	4 22%				0 0%	18	
Tâmega	2 67%	1 50%	1 100%	4 67%		1 50%		1 17%	1 100%			1 17%				0 0%	6	
Total	117 74%	52 80%	22 73%	191 75%	19 12%	6 9%	4 13%	29 11%	12 55%	6 27%	4 18%	22 9%	11 92%	1 8%	0 0%	12 5%	254	

## 8. HIGHLIGHTS

- In the 947 checks, we generally found that in 87% of cases (827 times) the call was answered on first attempt. In 13% of calls (120) we had to call 112 more than once.
- A more in-depth analysis, covering the respective NUTS III, revealed that generally (for all time frames) there were regions with very poor emergency call centre service. These were the cases, for example, of the NUTS Entre Douro e Vouga, Cávado, Tâmega, Ave and Baixo Vouga. In Entre Douro e Vouga, 17 of the 28 calls (61%) had to be repeated before being answered. In Cávado, calls were repeated in 11 of the 31 calls (35%).
- In 83% of cases operators identified themselves correctly, indicating the “112” number. Since any call not immediately identified as “112” is incorrect, 17% of calls were answered incorrectly.
- We found that generally less than two thirds (61%) of operators who answered the emergency call did not request information about the respective victims.
- There weren't any NUTS where information about the victims' condition was systematically requested in all calls. However, there were great differences in the procedures. For example, whereas the NUTS of Alentejo Litoral (90%), Pinhal Interior Sul (89%), Pinhal Interior Norte (82%) and Setúbal (81%) had the highest rate of information asked about the victims, in Entre Douro e Vouga (25%), Ave (35%), Douro (38%) and Minho - Lima (38%) most callers were not asked for this information.

- Of the 878 calls, in 116 (13%) calls the operator did not ask about the event's location. If we consider that the location was not asked in 73 (63%) of those 116 calls because the operator hung up (17) or indicated another calling number (56), we are still left with 43 cases in which we ask how can it be possible for a operator to deploy an emergency service without asking where those emergency teams must go.
- Generally, considering the 910 calls, we may conclude that in most cases the operator was friendly and polite (58%) and attempted to transmit calm (57%). At times the operator even indicated procedures (16%) and rarely tried to dominate the conversation (6%).
- As negative behaviour, operators were rude (6%) and, at times, even hung up (2%). Operators hung up only in the following NUTS: 4 times in Ave, 3 times in Baixo Mondego, 2 times in Greater Lisbon and Oeste, and once each in Alentejo Central, Alentejo Litoral, Grande Porto, Setúbal and Tâmega.
- Of the 957 checks, in 171 calls (18%) no emergency assistance arrived.



## 9. FINAL GENERAL CONCLUSIONS

This study was from the start based on the need to evaluate the effectiveness of the 112 emergency services.

This nationwide study aimed to assess the performance of emergency systems assigned to 112 under any emergency situation susceptible of requiring its deployment.

We thus laid out specific goals to analyse the following: the time to reach an emergency operator; the type of answering service; the type of information requested during the call; and the wait time for the services in question.

To check the type of answering service, 60% of calls were made in Portuguese, 20% in English, 10% in French and 10% in Spanish. The calls were made to test the system's operation capacity and effectiveness when used by foreigners, particularly during the upcoming Euro 2004.

We therefore feel that our goals were attained and that the results provide a good evaluation of the promptitude, quality and effectiveness of the 112 emergency service.

Therefore, an analysis of the time to reach a 112 operator revealed that in 87% of cases we were able to contact the operator at the first attempt, and more than one attempt was necessary in 13% of cases regardless of the time frame.

In calls not answered on the first attempt, in 52% of these cases only one more call was necessary. However, in 20% of cases it was necessary to call four or more times before an answer was obtained.

On average it took **nine seconds**, about three rings, **to reach a 112 operator**. This figure varied slightly according to the time frame, on average eight seconds from 09:00 to 17:00 h and 10 seconds from 01:00 to 09:00 h.

Regardless of the time frame, in 30% and 27% of times, it took two or three rings, respectively, for the call to be answered. Also note that calls were more frequently answered on the fourth ring, in 23% of times, than on the first ring, in only 9% of calls.

As for the **type of answering service**, we concluded that in 10% of times operators did not identify themselves immediately regardless of the time frame.

We also found that operators identified themselves correctly in 83% of cases by stating the 112 emergency number. When proper identification was not made, the operators stated the word “emergency” in 16% of the occasions, and in other cases answered the call by saying: “CODU” (Orientation Centre for Urgent Patients), “PSP” (police), “GNR” (police), “police,” “good evening”, “corporation and service,” “hello,” “hello, yes,” and “can I help you.”

As for the type of answer, in 58% of cases operators were friendly or polite, attempted to transmit calm in 57% of cases, indicated procedures in 16% of cases and tried to control the conversation in 6% of cases.

In 36% of cases, operators tried to transfer or actually transferred the call to another operator and in 12% of cases indicated another telephone number to notify the emergency.

Operators were rude in 6% of cases, and in 2% of calls they even hung up.

Per language, 49% of calls made in French and 40% of calls in English were answered politely. There was a significant difference for calls in Portuguese and Spanish which were answered politely in 65% and 54% of the times, respectively.

Operators were rude in 17% of calls in English and in 16% of calls in French, which contrasted with 2% of Portuguese calls and 1% of Spanish calls answered rudely.

Operators transferred the call to another operator in 49% of English calls and in 47% of French calls. Calls were transferred less when in Spanish, 38%, and in Portuguese, 30%.

Operators hung up more frequently in English calls, 7%, and in French calls, 5%, than in Portuguese (0.5%) or Spanish (1%).

Differences per time frame were found only in relation to operator friendliness. In calls from 17:00 to 01:00 operators were significantly less friendly (51%) than in calls during the other time frames (60% and 69%).

On the other hand, calls from 09:00 to 17:00 (33%) and those from 17:00 to 01:00 were significantly (42%) transferred more to another operator than calls from 1:00 to 9:00 h (29%).

Per scenario, we found that in calls based on scenarios three (65%), four (66%) and five (64%) the operator transmitted more calm than in the other scenarios. In calls based on scenario one (51%) and two (52%) operators were less friendly than in those based on the other scenarios (between 60% and 63%).

On the other hand, calls based on scenarios three (21%), four (22%) and five (31%) were more likely to have the operator indicate procedures about how to act when compared with calls for scenarios one (3%) and two (4%).

Also, as for the operator indicating another number, per scenario we found that in calls for scenario one (29%) and two (23%) the operator was much more likely to indicate another number than in the other scenarios (from 2% to 6%).

As for the **type of information requested by the call centre**, in 88% of calls the operator requested general information about the event.

Per language, we found that the occurrence was identified significantly more in Portuguese (94%) or Spanish (94%) calls than when in English (69%) or French (79%).

As for detailed identification of the type of event, we found that in only 69% of calls the operator was concerned with obtaining details about the emergency situation. In this case requests for detailed information were also influenced by the language. French (63%) or English (60%) calls were asked less detailed information than calls in Portuguese (71%) or Spanish (78%).

As for information about victims, we found that generally in 61% of calls operators did not request details about victims. In this case the language did not significantly influence the operator's behaviour, although calls in English obtained a slightly lower rate (53%) than in Portuguese (61%), French (62%) and Spanish (71%).

As for the event's location, we found that in 13% of calls the operator did not request information about the event's location. In 63% of these calls, operators did not request the event's location because they interrupted the call or indicated another number.

As for the other calls, in 69% of cases operators asked for the exact event location, whereas in 18% of those calls the operators did not ask for detailed location information.

In a cross analysis with the call language, we concluded that operators were significantly less concerned about the location whenever the call was in English (28%) or French (20%) than when in Portuguese (9%) or Spanish (6%).

There were no significant differences in requests for caller information according to language: in 58% of calls no information was asked about the caller, although English (66%) and French (64%) calls were more likely not to be asked for caller information than calls in Portuguese (56%) and Spanish (53%).

When caller information was requested, we found that the operator essentially asked for the caller's telephone number (90%) and the caller's name (22%).

Although there were no significant difference between the language and requested information, there was a greater tendency not to ask the name in English calls (10%) than when calls were in Portuguese (24%), French (28%) or Spanish (24%).

Lastly, we analysed the **time for emergency services to arrive on location**. We concluded that on average services take 10 minutes to arrive after completing the call. Ambulances (10 minutes) and fire vehicles, except their ambulances (9 minutes), arrive on location faster than the police (11 minutes).

Per scenario, we found that ambulances (7 minutes) and fire vehicles, except their ambulances (8 minutes) arrive faster for scenario<sup>1</sup> one. Police take about the same time to arrive for all scenarios.

Per language and time frame, none of the emergency services showed a significant difference in the time to arrive at the location.

When emergency services did not arrive, for 18% of the calls, it was found that generally scenarios one and two had the highest rate of non-arrival.

Per time frame, we found that the highest rate of non-arrival (20%) occurred between 17:00 and 01:00 h.

Per language, calls in English (29%) and French (20%) had a significantly higher probability of not receiving assistance than those in Portuguese (15%) or Spanish (15%).

Our final general conclusions from the study, based on the analysed and processed results, are a solid basis by which to evaluate the emergency system's operation and, more importantly, by which to draw conclusions from the results.

As indicated, the study was ultimately used to obtain reliable, independent and verisimilar data for future application to set up regulatory and legal mechanisms and administrative procedures to improve the effectiveness of the 112 emergency service.

This study is the end result of that goal which we fully met.

---

<sup>1</sup> See. Pg. 11,12

## 10. ACKNOWLEDGEMENT

We would like to thank all personnel of the Portuguese Consumer Protection Association – DECO, and all personnel of the newly formed National Fire and Civil Protection Service. This study would not have been performed without their commitment and dedication.

We thank professionals and volunteers of the emergency services dispatched through the 112 emergency number who were always willing to participate with great professionalism.

We thank our partners, especially the National Civil Protection Service and the National Fire Service, now combined into the National Fire and Civil Protection Service, the National Institute of Medical Emergencies, the National Republican Guard and the Public Security Police.

We would also like to thank everyone who, in performing their duties or fulfilling their civil duties, contributed to this project.

## 11. INDEXES

### 11.1. Table Index

	pg.:
Table 1 – Sample Distribution per NUT	18
Table 2 – Sample Distribution per time frame and per NUT	19
Table 3 – Sample Distribution per scenario and per NUT	20
Table 4 – Sample Distribution per language and per NUT	21
Table 5 – Call answered on first attempt	22
Table 6 – Call answered on first attempt per network	25
Table 7 – Number of calls when call not answered on first attempt	27
Table 8 – Time to reach the operator	28
Table 9 – Number of rings before call is answered	29
Table 10 – Immediate operator identification	30
Table 11 – Operator identification mode	32
Table 12 – Event type identification	34
Table 13 – Detailed event identification	36
Table 14 – Information about victims	38
Table 15 – Exact location identification	40
Table 16 – Caller data identification	42
Table 17 – Requested information	43
Table 18 – Call evaluation – general	46
Table 19 – Call evaluation – per language	49
Table 20 – Call evaluation – per time frame	51
Table 21 – Call evaluation – per scenario	53
Table 22 – Time of emergency services to arrive	54
Table 23 – Emergency services arrival time, per scenario	55
Table 24 – Emergency services arrival time, per language	56
Table 25 – Emergency services arrival time, per time frame	57
Table 26 – Non-arrival of emergency services, general analysis	59
Table 27 – Non-arrival of emergency services, per scenario	61
Table 28 – Non-arrival of emergency services, per time frame	63
Table 29 – Non-arrival of emergency services, per language	65
Table 30 – Arrival of the various emergency services, per scenario	66
Table 31 – Emergency services order of arrival	67



Table 32 – Ambulance arrival - general	69
Table 33 – Ambulance arrival compared with other services, per scenario	71
Table 34 – Ambulance arrival compared with other services, per scenario	72
Table 35 – Ambulance arrival compared with other services, per time frame	73
Table 36 – Ambulance arrival compared with other services, per time frame	74
Table 37 – Ambulance arrival compared with other services, per language	75
Table 38 – Ambulance arrival compared with other services, per language	76
Table 39 – Arrival of firefighters – general	78
Table 40 – Arrival of firefighters compared with other services, per scenario	80
Table 41 – Arrival of firefighters compared with other services, per scenario	81
Table 42 – Arrival of firefighters compared with other services, per time frame	82
Table 43 – Arrival of firefighters compared with other services, per time frame	83
Table 44 – Arrival of firefighters compared with other services, per language	84
Table 45 – Arrival of firefighters compared with other services, per language	85
Table 46 – Police arrival – general	87
Table 47 – Police arrival compared with other services, per scenario	89
Table 48 – Police arrival compared with other services, per scenario	90
Table 49 – Police arrival compared with other services, per time frame	91
Table 50 – Police arrival compared with other services, per time frame	92
Table 51 – Police arrival compared with other services, per language	93
Table 52 – Police arrival compared with other services, per language	94

## 11.2. Graph Index

	pg.:
Graph 1 – Call answered on first attempt	23
Graph 2 – Number of calls to reach operator	26
Graph 3 – Immediate operator identification	31
Graph 4 – Type of information requested by the call centre	44
Graph 5 – General call evaluation	47
Graph 6 – Non-arrival of services – General analysis	60
Graph 7 – Ambulance – General analysis	68
Graph 8 – Arrival of Firefighters – General analysis	77
Graph 9 – Police arrival – General analysis	86

## 12. ANNEXES

## 112 CHECK INEM - (CODU) Contacts

INEM = National Medical Emergency Institute / CODU = Orientation Centre for Urgent Patients

CODU	Territorial Coverage (Counties)*
Oporto	
Coimbra	
Lisbon	
Algarve	

CODU	Medical Staff Contact*	Contact telephone number*
Oporto		
Coimbra		
Lisbon		
Algarve		

- INEM information

### CHECK IDENTIFICATION

DATE:    /    /

Time: .....h

NUT III:

County:

Scenario		
3	C3	<input type="checkbox"/>
4	C4	<input type="checkbox"/>
5	C5	<input type="checkbox"/>

CODU	Contact	
Oporto		<input type="checkbox"/>
Coimbra		<input type="checkbox"/>
Lisbon		<input type="checkbox"/>
Algarve		<input type="checkbox"/>

.....  
(DECO surveyor signature)

.....  
(SNPC signature)



# 112 SURVEY CHECK

CHECK IDENTIFICATION									
DATE: / /		Time: ..... h		NUT III:		County:			
<b>Time Frame</b> 09.00 : 17.00 T1 <input type="checkbox"/> (1) 17.00 : 01.00 T2 <input type="checkbox"/> (2) 01.00 : 09.00 T3 <input type="checkbox"/> (3)			<b>Scenarios</b> 1 C1 <input type="checkbox"/> (1) 2 C2 <input type="checkbox"/> (2) 3 C3 <input type="checkbox"/> (3) 4 C4 <input type="checkbox"/> (4) 5 C5 <input type="checkbox"/> (5)			<b>Language</b> Portuguese P <input type="checkbox"/> (1) English E <input type="checkbox"/> (2) French F <input type="checkbox"/> (3) Spanish S <input type="checkbox"/> (4)			

TELEPHONE CALL		
CALL START: Time: ..... h	CALL END: Time: ..... h	TOTAL TIME: .....min

Call by: Wired Network ☐ (1) 91 ☐ (2) 93 ☐ (3) 96 ☐ (4)

## A. TELEPHONE CALL

1. First call answered? YES ☐ (1) NO ☐ (2)

1.1 If "No," how many calls were necessary? .....

2. Number of rings (before answer)? 1 ☐ (1) 2 ☐ (2) 3 ☐ (3) 4 or more ☐ (4) in seconds.....

## B. TELEPHONE CONVERSATION

3. Immediate operator identification? YES ☐ (1) NO ☐ (2)

3.1 How did he/she identify himself/herself?

## 4. IDENTIFICATION of event type

4.1. Operator asked about **event nature / type**? YES ☐ (1) NO ☐ (2)

(Example: Accident, birth, fire, illness, aggression, etc.)

4.2. Requested **detailed information** about the event? YES ☐ (1) NO ☐ (2)

(Example: Car accident, pedestrian hit by car, fall, run off the road, collision, fire, trapped, poisoned, no. of vehicles, etc.)

4.3. Was information given about **victim(s)**? YES ☐ (1) NO ☐ (2)

**Examples:** Number of victims ☐ children ☐ elderly ☐

Condition: Injured ☐ Under risk ☐ Trapped ☐ Missing ☐

Conscious ☐ Unconscious ☐ Fractures ☐ Risks within the surroundings ☐

## 5. Event LOCATION

5.1. Asked about the **exact event location**?

YES, correctly and in detail ☐ (1) YES, but not fully ☐ (2) NO ☐ (3)

Ex: 5.1.1 Town ☐ Address ☐ Building ☐ Floor/apartment ☐

Ex: 5.1.2 Area: Urban ☐ Rural ☐ Forest ☐ Other ☐

Ex: 5.1.3 Reference points ☐ Instructions to get there ☐ Other information ☐

## 6. CALLER INFORMATION

6.1. Asked for your personal information? YES ☐ (1) NO ☐ (2)

6.1.1 Name ☐ (1) Telephone ☐ (2) Means of contact ☐ (3) Other ☐

(4) .....

## C. CALL EVALUATION

7. The person who answered the call:

Transmitted calm ☐ (1) Was friendly/polite ☐ (2) Was rude ☐ (3) Tried to control the conversation ☐ (4)

Tried/transferred the call to someone else ☐ (5) Gave instructions on procedures ☐ (6) Indicated another number to call ☐ (7)



## ARRIVAL ON LOCATION (RESCUE)

### A. AMBULANCE

ARRIVAL: Time: ..... h

WAIT TIME (after completing the call): .....min

8. Entity: INEM-National Medical Emergency Institute ☐<sub>(1)</sub> Firefighters ☐<sub>(2)</sub> PSP Police ☐<sub>(3)</sub> Other ☐<sub>(4)</sub>

### B. FIREFIGHTERS

ARRIVAL: Time: ..... h

WAIT TIME (after completing the call): .....min

9. Brigade: .....

### C. POLICE

ARRIVAL: Time: ..... h

WAIT TIME (after completing the call): .....min

10. No. of Police Officers: ..... PSP ☐<sub>(1)</sub> GNR ☐<sub>(2)</sub>

11. Means of arrival: Patrol car ☐<sub>(1)</sub> Van ☐<sub>(2)</sub> Motorcycle ☐<sub>(3)</sub> Other ☐<sub>(4)</sub>

### D. SERVICE ARRIVAL ORDER (when more than one of the aforementioned services arrived)

<b>NO ARRIVAL OF SERVICES</b>		
<b>AMBULANCE</b>		
<b>FIREFIGHTERS</b>		
<b>POLICE</b>		

(Indicate that no services arrived (NO ARRIVAL OF SERVICES) only after a wait period and when, through a new telephone call, the operator states that no services were sent)

Indicate choices by placing an x in the appropriate box, also applicable when a specific service does not arrive.

Other remarks: .....

.....

.....

.....  
(Surveyor's signature)

.....  
(SNPC signature)

Name:

Name: