Better policy ✓ Better diagnosis ✓ Better care

Alpha-1 Antitrypsin Deficiency –
Time to Get Better
**ALPHA-1 – A RARE DISEASE, A REAL NEED TO ACT**

3% of COPD patients are Alpha-1 patients

COPD will be a leading cause of death worldwide by 2020

Alpha-1 is the most widely recognised rare genetic cause of COPD

Alpha-1 is the only form of COPD with specific treatment and with the highest level of data for that treatment

Alpha-1 causes cirrhosis not attributable to alcohol consumption and accelerates progression of other liver diseases

More than 66m people have COPD in the European Region, of which at least 2m cases are caused by AAT deficiency. All COPD patients must be tested for Alpha-1, just this simple step would significantly improve diagnosis.

**Lung-related uncontrolled Alpha-1 complications**
- Reoccurring hospital admissions
- Oxygen therapy
- Immobility
- Need to seek Transplantation
- Homecare
- Death

**Liver-related uncontrolled Alpha-1 complications**
- Complications of liver disease
- Absenteeism at school/work
- Reoccurring hospital admissions
- Need to seek Transplantation
- Death

Alpha-1 antitrypsin deficiency was discovered more than 50 years ago, but most of its roles and properties are not known yet. We need more support for research.

Despite rare diseases is being a public health priority, we need to ensure that all Alpha-1 patients have access to early diagnosis and care, and can benefit from opportunities stemming from research and innovation.

It took me 15 years to be diagnosed with Alpha-1. It was a relief to know what is wrong with me, as now I can manage it. I wish it happened earlier!

Prof. Joanna Chorostowska-Wynimko, National Institute of Tuberculosis and Lung Disease, Poland

Dr. Ilaria Ferrarotti, University of Pavia, Italy

Marlene Mizzi, Member of the European Parliament, Malta

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INTRODUCTION

Alpha-1 antitrypsin deficiency (henceforth referred to as Alpha-1) is an inherited condition that increases the risk of lung, liver and other diseases. Alpha-1 is present worldwide, but the prevalence of its severe form varies across Europe, affecting about 1 in 1,500 to 3,500 individuals, whereas mild forms are much more common.

The principal difficulty in managing Alpha-1 is achieving early diagnosis, something which most patients will not receive until severe symptoms have begun, despite the cheap and effective means of diagnosis that exist. Many times, the symptoms of chronic obstructive pulmonary disease (COPD) and liver disease do not lead to appropriate referrals to Alpha-1 centres of excellence. This challenge requires a consolidated approach of educated healthcare professionals and patients. In addition, Alpha-1 patients require policy that facilitates sharing of expertise, encourages preventive measures such as screening and allows a tailored approach to evaluating medicines for Alpha-1 patients. Policy at the European level also must recognise that diseases like Alpha-1 benefit from a great deal of information sharing and at EU and national level, and consequently Alpha-1 should be considered in many policy areas such as in environmental, economic and educational policy.

The burden of Alpha-1 is not about the number of affected patients but about each individual’s life which can be significantly impacted by the delayed diagnosis and limited access to treatment. What is more, Alpha-1 is a life-threatening disease, and without proper treatment and care patients have a decreased life expectancy. The social aspect of Alpha-1 disease should not be forgotten: many Alpha-1 patients need to deal with stigma associated with lung disease as a “smokers’ disease” and liver disease as “alcoholics’ disease”.

OVERARCHING RECOMMENDATIONS

This paper calls on policy makers, healthcare professionals, individuals and carers to pursue these recommendations:

Recommendations for Policy Makers

- All Member States should develop an Alpha-1 diagnosis programme in their rare disease plan. The European Commission should develop a project to generate minimum credentials for Alpha-1 centres of excellence.
- National paying agencies should develop reimbursement decisions by distinguishing rapid or non-rapid declining Alpha-1 patients.
- National governments should ensure that legislation does not deter individuals from genetic testing for rare diseases by ensuring that non-symptomatic patients do not have higher insurance premiums.

Recommendations for Healthcare Professionals (HCP)

- HCPs should consider a diagnosis of Alpha-1 in patients with COPD, emphysema, bronchial asthma, bronchiectasis, unexplained liver disease, panniculitis, unexpected vasculitis and any patients with family histories of Alpha-1.
- Test all the above listed patients with a simple blood test and refer all positive tests to centres of excellence (specified on page 22).
- Centres of excellence should work through networks such as the European Reference Networks to share expertise, refer patients and educate healthcare professionals across Europe.

Recommendations for Individuals and Carers

- If you have unexplained symptoms of lung, liver or skin disease, ask your doctor to be tested for Alpha-1.
- Alpha-1 patients should adjust their lifestyles to reduce the chance of the onset, or aggravation of lung, liver or skin disease.
- Alpha-1 patients and carers should seek support from the patient and/or support groups.
WHAT IS ALPHA-1?

Alpha-1 is a genetic inherited condition, which is passed from parents to children through genes.

Alpha-1 occurs when there is a lack of a protein in the blood called Alpha-1 antitrypsin, or AAT. AAT, the Alpha-1 protein, is mainly produced by the liver. The main function of AAT is to protect the lungs from inflammation caused by infection and inhaled irritants such as tobacco smoke.

The low level of AAT in the blood occurs because the AAT is abnormal and cannot be released from the liver at the normal rate. This leads to a build-up of abnormal AAT in the liver that can cause liver disease and a decrease of AAT in the blood that can lead to lung disease in adults.³
HOW IS ALPHA-1 INHERITED?

As a genetic disorder, to inherit severe Alpha-1, a so-called Z-AT gene (or another severely impaired AT variant) must be passed on by both parents. If an individual carries two Z-AT, his/her level of AAT would be 10 to 20 % of what it should be. The AAT protein affected by the Z-AT gene builds up in the liver, which means that the individual does not have enough AAT released to control the enzyme in his/her body. The defective production of AAT protein in the liver mainly results in compromised pulmonary protection.

STANDARD OF CARE FOR ALPHA-1 PATIENTS

Symptoms can be treated by appropriate therapeutic measures. Besides specific treatments for the lungs and liver, all Alpha-1 patients should take precautions to avoid infections, which includes vaccinations, sensible consumption of alcohol (unless liver disease is established in which case it should be avoided) and no tobacco.

Alpha-1 patients with lung disease such as asthma, COPD or bronchiectasis can be treated by the same drugs that are used by non-Alpha-1 patients for these conditions.

Specific therapy available to Alpha-1 patients with lung disease called augmentation therapy. This therapy consists of intravenous infusions, usually weekly, of AAT protein in order to increase the level of the protein in the blood and lungs. The therapy has shown to reduce the rate of lung decline, and improve survival. The augmentation therapy cannot restore lost lung function, thus it is crucial for patients to receive it as early as possible if they have evidence of deteriorating lung function.

For liver diseases, liver transplantation is the only viable therapy today. Other treatment options may include adjustment of alcohol intake, hepatitis A&B vaccinations and nutrition adjustment.
RECOMMENDATIONS FOR POLICY MAKERS

Act, coordinate and evaluate

**Challenge 1: Late or incorrect diagnosis**

Although Alpha-1 is one of the most common hereditary disorders in Europe, lack of correct and timely diagnosis is a major challenge due to lack of awareness on the disease and thus its exclusion from systematic screenings programmes. Alpha-1 is diagnosed through the simple and low-cost way - a blood test. However, Alpha-1 diagnosis should also trigger family screening. While genetic testing is crucial for patients with a higher likelihood of Alpha-1, these patients might be hesitant to seek screening because of the fear of correspondingly increased insurance premiums.

The Call to Action

- The European Commission should update their CORDIS study from 2002 to find the current status of genetic testing for rare diseases and to issue subsequent recommendations for countries to promote an approach based on maintaining a high level of human health and not discriminating against patients taking effective steps to avoiding both human and health system costs.
- All Member States should develop an Alpha-1 diagnosis programme as part of the rare disease plan and ensure that guidelines for related diseases such as COPD and liver cirrhosis include mandatory tests for Alpha-1.
- Consider newborn screening for Alpha-1 recognising the importance in avoiding expensive organ transplantation, dangerous and expensive non-controlled disease progression.

**Challenge 2: Reimbursement**

Alpha-1 currently has no cure, however, there are number of treatments developed for better disease management. One of the most progressive treatments for Alpha-1 lung and skin affected patients is called augmentation therapy, aimed to slow down or prevent progression of lung disease and is often recommended for Alpha-1 patients. Despite promising results and proven cost-effectiveness of the augmentation therapy, there are only few countries which reimburse it.

The Call to Action

- Payers must consider the number of “rapid decliners” that would receive augmentation therapy rather than the whole patient population when assessing cost-benefit.
- Consider assessment by a Computed Tomography (CT) Scan.
- Augmentation therapy has been proven to be cost-efficient and Alpha-1 is the only form of COPD with specific treatment and has one of the highest levels of data and hence it should be made available for all patients who need it.

**Challenge 3: Coordination**

Centres of excellence are the cornerstone of rare disease care in the EU. Across all countries, centres of excellence must have a more coordinated approval process so that patients know where expert care exists and where appropriate referrals can take place. This is crucial for the development of European Reference Networks (ERNs) in all disease areas and so that detected Alpha-1 patients can be appropriately managed. In 2017, there were two ERNs launched, in which Alpha-1 is included: the European Reference Network on Rare Respiratory Diseases (ERN RARE-LUNG) and the European Reference Network on Rare Hepatological Diseases (ERN RARE-LIVER). In addition, there are 63 designated centres of excellence listed on the Orphanet website but these are self-assigned by national health services and 24 of these centres are in a single country.

The Call to Action

- Implement EU Cross-Border Healthcare Directive to support the right of patient to get the best possible care, also abroad, if deemed appropriate.
- The European Commission should incorporate a project under the 3rd Health Programme generating an Alpha-1 centre of excellence accreditation.
- The development of an “EU Stamp”, recorded on the Orphanet database denoting a centre of excellence by disease area. This stamp would be the same processing form for ERN applications and comparatively applicable for patients to know where they will receive expert care.

**Challenge 4: Holistic policy on Alpha-1**

Alpha-1 does not just require strong health policy but also a considered approach that environmental issues such as pollution (indoor and outdoor) and the toxicity of chemicals in employment settings have a major impact on human health. Alpha-1 patients experience organ degeneration noticeably faster than other patients with COPD in environments with more pollutants in the air.

What can be done?

- The EU Member States should improve ambient air quality through effective implementation of the EU and WHO developed air quality standards.
- The EU should develop comprehensive strategy on indoor air quality.

Poor air quality is an invisible killer which currently affects 90% of city dwellers in the EU, particularly lung disease patients. Achieving the highest outdoor and indoor air quality standards is just one measure that legislators can take to improve health for Alpha-1 patients.
A message from the European Parliament

Rare diseases, including Alpha-1, affect only a small group of the population, and for a long time the needs of such patients were neglected: limited knowledge on rare diseases, high cost of specialised services and effective therapies resulted in lack of consideration and investment in research and healthcare services in this area.

However, for the last decade, the EU has been actively contributing to the changing perspective on rare diseases: the legislative developments at EU level have led to the development of national rare disease plans and centres of expertise in most Member States, as well as the facilitation of research and clinical trials and the possibility to receive diagnosis, treatment and care abroad. Many useful tools for rare diseases are already in place, including but not limited to the EU Regulation on Orphan Medicinal Products, the EU Directive on Patients’ Rights to Cross-Border Healthcare, the EU Public Health Programme and the Clinical Trials Regulation although it is paramount to continuously evaluate and ameliorate existing legislative instruments, develop new solutions to enhance diagnosis, care and research.

In the upcoming years, special attention should be paid to development of Alpha-1 diagnosis programmes, as a part of rare disease plans in the Member States. Better diagnosis is needed to efficiently tackle the disease and to avoid higher costs in the future. To ensure access to a quality care for all Europeans, the tools provided by the cross-border health provisions should be fully exercised by all Member States. As elected European citizens representatives we would like to express our continuous commitment to work on the health and well-being of all Europeans, with a great focus on rare disease patients.

Seb Dance, Member of the European Parliament, S&D, UK
Marlene Mizzi, Member of the European Parliament, S&D, Malta
Sirpa Pietikäinen, Member of the European Parliament, EPP, Finland

Rare diseases, such as Alpha-1, require a combination of coordinated EU policy work to harmonise standards and benefit from differential expertise, and strong national plans to ensure patients are cared for in a holistic way within resource-constrained health systems.

Effective policy solutions for Alpha-1 are not necessarily complicated, but the lack of awareness around this disease has simply meant policy has omitted key elements for these patients. This is an area where European and national policy makers can make rapid changes to patients’ lives, which will improve not only the prosperity of patients, but the socio-economic functioning of European societies.

Lack of political action creates a vicious circle, where an unaddressed issue leads to another unaddressed issue and deepens, contributing to an increased burden for Alpha-1 patients and healthcare systems.
RECOMMENDATIONS FOR HEALTHCARE PROFESSIONALS

Key Recommendations for Healthcare Professionals

- Healthcare professionals should keep the tear-out as a reminder of all patients who could have Alpha-1. You are the key to identifying the undetected population of Alpha-1 patients and to ensure that all can receive good care.

- In addition to striving to consider Alpha-1 in more patients, healthcare professionals should aim at attending and participating in respiratory and other Alpha-1 related medical events to increase knowledge and enhance networking.

- There are many centres of excellence around Europe with the expertise to diagnose and care for Alpha-1 patients appropriately. Look to establish links with these centres of excellence and contact them in all cases.

- Centres of excellence should work through networks such as the European Reference Networks to share expertise, refer patients and educate healthcare professionals across Europe. The full list of centres of excellence in your country can be found at the end of this document.

Recommendations for Recognising Alpha-1 Patients

Conditions indicating risk of Alpha-1:

- Bronchiectasis
- Panniculitis
- Vasculitis (in particular ANCA)
- Hepatocellular carcinoma
- Unexplained liver disease

Test all patients with:

- COPD
- Asthma
- Family history of Alpha-1
- Chronic liver disease
- Patients with frequent infections
- On lung and liver transplant lists

1. Positive for low levels of Alpha-1 Antitrypsin?

2. Refer to centre of excellence (see page 22)

3. Treatment and care at centre of excellence

RECOMMENDATIONS ON TREATING AND CARING FOR ALPHA-1 PATIENTS

Initial Visit(s)

- Undertake baseline assessment after obtaining a full clinical history
  - Full physical examination
  - A high-resolution CT of the lungs or a posteroanterior (PA) and Lateral Chest X-Ray
  - Pulmonary function test (spirometry, lung volumes, diffusion capacity, oximetry, or arterial blood gases)
  - Liver function test (AST, ALT, total and direct bilirubin, Albumin, INR, liver ultrasound or fibroscan examination, non-invasive assessment of liver fibrosis)
  - Other appropriate tests for specific associations including vasculitis screen

- Discuss need for liver evaluation with appropriate referral to a liver specialist (paediatric or adult)

- Discuss need for lung evaluation or referral to a pulmonologist

- Discuss use of drug therapy for lung problems
  - Use of bronchodilators
  - Use of corticosteroids
  - Early identification and treatment of lung infections

- Discuss active management and treatment of liver complication symptoms

- Discuss need for vaccinations
  - Influenza (annual)
  - Pneumococcal vaccine
  - Hepatitis A
  - Hepatitis B

- Assess smoking status and provide strong message on the harm, reason to and appropriate advice on how to quit if patient smokes any form of tobacco, including cigars, pipes and cigarettes

- Discuss risk of occupational and environmental exposures including second hand tobacco smoke, dusts, chemicals

- Discuss alcoholic beverage consumption
RECOMMENDATIONS ON TREATING AND CARING FOR ALPHA-1 PATIENTS

- Discuss developing an exercise programme if relevant
- Discuss developing a nutrition plan if relevant
- Discuss reducing stress if relevant
- Discuss referring patient to a psychologist (if necessary)
- Refer patients to the joint resources listed at the end of the recommendations after discussing the reasons with the patient
- Discuss patient at a relevant MDT if appropriate, and provide advice to patient

Subsequent Visit(s)

- Discuss the results and implications of the initial baseline assessment
- Discuss requirements and frequency of follow-up visits
- Discuss the potential prognosis and treatment options
- Discuss potential benefits of augmentation therapy specific for the individual patient
- Discuss the use and benefits of supplemental oxygen (if necessary)
- Discuss the benefit of surgical options (if appropriate)
- Discuss referring patient to a psychologist (if necessary)
- Discuss referring patient to a genetic counsellor (if necessary)

RECOMMENDATIONS FOR HEALTHCARE PROFESSIONALS

Healthcare professionals hold the ultimate key to improving care for Alpha-1 patients but the lack of adequate education about identifying the disease and awareness on how to react to appropriate symptoms obstructs good care. This section aims to provide healthcare professionals with the key tools for identifying and appropriately dealing with Alpha-1 patients.

The Key Steps

**RECOGNISING – It is more common than you think!**

Who to test? The World Health Organisation and the European Respiratory Society recommend the testing of all patients with COPD, emphysema, a diagnosis of adult onset asthma especially with incompletely reversible airflow obstruction, individuals with unexplained liver disease, and adults with necrotizing panniculitis or multisystem vasculitis.

Any patients on lung and liver transplant lists should be tested, and keep in mind that bronchiectasis, panniculitis, vasculitis, hepatocellular carcinoma and unexplained liver disease are all potential indicators of Alpha-1.

**REACTING – Testing is cheap and can be life saving**

What to do? All patients who have been recognised within the above groups should be tested for Alpha-1. Testing can be conducted on a single blood sample (blood draw or finger prick test).

Once this has been done, more specific tests and evaluations may be necessary please consult the tear out for more information.

**REFERING – Centres of Excellence exist across Europe**

Now what? All tests for Alpha-1 on the above groups should be referred immediately to a centre of excellence in your country for a full examination, diagnosis and expert information.

The list of centres of excellence can be found at the end of this document.

Our greatest opportunity to care better for Alpha-1 patients is to increase the recognition of the disease amongst healthcare professionals so that patients can be referred to specialists linked to multidisciplinary teams. Doctors are the essential bridge between a huge community of undiagnosed patients and the centres of excellence.

Prof. Robert Stockley, University Hospital Birmingham, UK
**RECOMMENDATIONS FOR INDIVIDUALS AND CARERS**

Do I have Alpha-1?

Alpha-1 can be confused with other lung and liver diseases. If you have any of the symptoms described below, it is suggested to ask your doctor to conduct some tests, especially if you are under the age of 40.

**Lungs**
- Frequent infections
- Frequent coughs, phlegm production
- Shortness of breath
- Wheezing

**Liver**
- Elevated liver enzymes
- Discomfort in right upper abdomen
- Easier bruising
- Fatigue
- Eyes and skin turning yellow
- Dark urine
- Distressing itching
- Weight faltering
- Swelling of the abdomen (ascites)
- Vomiting blood or passing blood in the stool

When should I seek screening?

It is suggested to go through screening if you have family history of Alpha-1, if you have symptoms listed previously, as well as any of the following diseases:

**Lungs**
- COPD
- Emphysema
- Chronic bronchitis
- Chronic bronchiectasis
- Suspected allergies and or asthma

**Liver**
- Chronic liver disease
- Cirrhosis
- Unexplained liver disease
- Unexplained paediatric liver disease
- Hepatocellular carcinoma

**Skin**
- Panniculitis
- Unexplained Vasculitis

Depending on experienced symptoms, lung screening should be done irrespective of age.

Some people experiencing Alpha-1 symptoms are hesitant to seek diagnosis, preferring “better not to know” about the potential disease. However, it is highly recommended to get screened, as timely and correct diagnosis will significantly improve your quality of life and can stop disease progression.

**QUESTIONS TO ASK YOUR DOCTOR**

- What is my diagnosis? What is Alpha-1?
- Will I need a test? What is the test for? What will the results tell me?
- Should my family members take the test for Alpha-1?
- What are my treatment options? What are the benefits of each option? What are the side effects?
- What will the medicine you are prescribing do? How do I take it? Are there any side effects? Can they adversely interact with other medications you are prescribing for me?
- Why do I need surgery? Are there other ways to treat my condition? How often do you perform this surgery?
- Do I need to change my daily routine? What I can do to maintain and improve my health?
- If my symptoms worsen, what should I do on my own? When should I contact you?
How are diagnosis made?

Alpha-1 can be diagnosed through a simple blood test. One type of blood test measures the body’s level of AAT. If the AAT level is lower than normal, your health care provider may order a genotype or a phenotype blood test. The genetic analysis looks at the changes in the genetic code and shows if the person is an Alpha-1 carrier. To have a better understanding of how genetic testing is done and what the outcomes may be, please seek genetic counselling beforehand.

Can I be treated?

Alpha-1 is not yet curable, however, treatments for symptoms are available. The same medicines which are used by non-Alpha-1 patients for lung conditions such as COPD, asthma or bronchiectasis can help Alpha-1 patients with lung diseases. In addition, in some European countries, lung-affected Alpha-1 patients may receive infusions of AAT, which is known as augmentation therapy. The therapy is a preventive measure, it can protect against further lung damage but it cannot restore it. Augmentation therapy might also be suggested for the treatment of panniculitis. In case of the presence of one or more additional diseases co-occurring with Alpha-1 (comorbidities), please seek advice from your doctor on the treatment.

For the Alpha-1 liver condition there is no specific treatment, the only currently available treatment, when liver disease is most severe, is surgery or liver transplantation. Augmentation therapy is not used for the liver disease patients.

Where can I find support?

Check if there are support groups and/or patient organisations in the area where you live. Join this network to get the support and information you may need. Patient groups are also essential for providing information to patients, and working on their behalf on policy and medical levels. In addition, they connect Alpha-1 patients to deal together with ongoing issues and to support each other. All patients are encouraged to find their local Alpha-1 patient group, please check page 22, if you have a patient group near you, otherwise please contact Alpha-1 Global for further information.

Being diagnosed with Alpha-1 is one of the most stressful experiences in a person’s life. Patient organisations are the best place to share experiences and to learn from others who are in similar situation. You will find support in your country by visiting http://www.alpha-1global.org/en

Dr. Frank Willersinn, Alpha-1 Global (Belgium)
USEFUL LINKS/QR CODES

European Reference Network on Rare Respiratory Diseases (ERN LUNG)
http://ern-lung.org/

List of Centres of Excellence

Please visit Orphanet – the portal for rare diseases and orphan drugs – to find Alpha-1 centre of excellence in your country: www.orpha.net

List of Patient Organisations

Alpha-1 Austria
www.alpha1-oesterreich.at

Alpha-1 France
www.alpha1-france.org

Alpha-1 Plus Belgium
www.alpha1plus.be

Alpha-1 Germany
www.alpha1-deutschland.org

Alpha-1 Denmark
www.alfa-1.dk

Alpha-1 Ireland
www.alpha1.ie

Alpha-1 Italy
www.alfa1at.it

Alpha-1 Netherlands
www.alpha1nederland.nl

Alpha-1 Portugal
www.aa1p.pt

Alpha-1 Romania
www.unutest.webcentral.eu

Alpha-1 Spain
www.alfa1.org.es

Alpha-1 Sweden
www.alfa-1.se/news.php

Alpha-1 Norway
www.alfa1foreningen.wordpress.com

Alpha-1 Poland
www.a1at.wordpress.com

Alpha-1 Switzerland
www.alpha-1.ch

Alpha-1 UK Support Group
www.alpha1.org.uk

Alpha-1 Awareness UK
www.alpha1awareness.org.uk

Alpha-1 Global
www.alpha-1global.org

Alpha-1 Awareness UK
www.alpha1awareness.org.uk

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## PAST SUCCESS TABLE

This table of success should serve as an overview of what has **successfully been achieved from the list of policy recommendations** developed in 2011 and what remains to be done.

<table>
<thead>
<tr>
<th>Recommendation 2011</th>
<th>Status of achievement 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition of Alpha-1 as rare condition</td>
<td>Partially achieved</td>
</tr>
<tr>
<td>Increased Alpha-1 awareness</td>
<td>Partially achieved. Through establishment of patient organisations, awareness campaigns, meetings with MEPs, distribution of the previous set of the expert recommendations</td>
</tr>
<tr>
<td>Diminishing health inequalities affecting Alpha-1 and other rare disease patients</td>
<td>Partially achieved. Through Cross-Border Health Directive, which sets framework to ensure better access to cross-border treatment, however it requires positive reimbursement decisions in more Member States to truly reduce inequalities</td>
</tr>
<tr>
<td>EU definition of rare diseases is respected by all Member States</td>
<td>Partially achieved. Member States with adopted plans or strategies on rare diseases comply with the EU definition. Those without plans in place usually do not have any official definition of rare disease.</td>
</tr>
<tr>
<td>Development of the EU and national policies with a relevance to rare diseases</td>
<td>Achieved. European policy in the field of rare diseases has improved European cooperation. European policy encouraged national policies in the field. 22 national plans for rare diseases were adopted (as of 2016). National policies are guided by recommendations issued at the European level. Over 80 orphan drugs authorised as a result of the European incentives (as of 2016).</td>
</tr>
<tr>
<td>Increased access to treatment through implementation of the Cross-Border Healthcare Directive</td>
<td>Partially achieved. Although possibilities for treatment abroad have expanded, there are still not many patients using them and the barriers to achieving treatment remain prohibitive to good cross-border care.</td>
</tr>
</tbody>
</table>

### Recommendation 2011

- Better standardisation of treatments and devices supporting breathing
- EU Strategy on information to patients
- Need of lung transplants is reduced through the optimal Alpha-1 treatment
- Patients should be given a possibility to decide whether and when they should undergo organ transplantation
- Alpha-1 Expert Groups, including academic and patients are supported by the EU and Member States
- Establishment of Alpha-1 patient registries

### Status of achievement 2017

- Partially achieved. Revised Medical Devices Regulations will come into force as from 2019, resulting in safer medical devices supporting breathing.
- Not achieved
- Partially achieved.
- Partially achieved.
- Partially achieved.
- Partially achieved.

### Alpha-1 Expert Groups, including academic and patients are supported by the EU and Member States

- The EU has allocated €449.4 million (2014-2020) through the Third Health Programme to support cooperation projects at EU level, actions jointly undertaken by Member State health authorities, functioning of nongovernmental bodies, cooperation with international organisations. Particular attention of the programme is given to rare diseases.

### Establishment of Alpha-1 patient registries

- 63 Alpha-1 centres of excellence in Ireland, Italy, Netherlands, France, UK, Belgium, Denmark, France, Spain, Switzerland (24 of 63 reference centres are in Italy) (as of 2017).
EXPERT GROUP OVERVIEW

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The recommendations are produced with the support of Alpha-1 Global. Its mission is to develop a collaborative global network of Alpha-1 patient leaders, physicians and researchers, to increase awareness, detection and access to care for Alphas around the world.

Facilitated and edited by:  
Kit Greenop, Jelena Malinina and Yordan Aleksandrov - RPP Healthcare

Note: This recommendations paper has been edited by RPP Healthcare with the financial support from Alpha-1 Global for meeting costs, design and printing of this document. The contents of the recommendations are based on desk research and stakeholder interviews. We would like to express our thanks to the aforementioned experts who have reviewed and provided guidance on the drafting of this document. This document is intended to provide guidance to policy makers, healthcare professionals and patients in strengthening the efforts to improve care for patients with Alpha-1 antitrypsin deficiency.

LIST OF REFERENCES

2. Ibid
5. Alpha-1 Foundation “What is Alpha-1?”, https://www.alpha1.org/what-is-alpha1, [accessed 17 January 2017]
6. Esquinás, Cristina et al. “Practice and Knowledge about Diagnosis and Treatment of Alpha 1 Antitrypsin Deficiency in Spain and Portugal”, BMC Pulmonary Medicine 16, 2016
12. It is important to note that Alpha-1 is associated with more rapid decline in lung function in some patients compared with non-Alpha-1 COPD. The lower lung function is, the greater likelihood of death and the need for transplantation.
13. Teschler, Helmut “Long-term experience in the treatment of α1-antitrypsin deficiency” (see footnote 10)
16. It is important to know that alpha-1 prevalence varies by population. The disorder affects about 1 in 1500 to 3500 individuals with European ancestry. It is uncommon in people of Asian descent. Many individuals with Alpha-1 are likely undiagnosed, particularly people with COPD. COPD can be caused by Alpha-1, however, the Alpha-1 is often never diagnosed while patients are often misdiagnosed with asthma.
22. See footnote 17, 19
23. Ibid
24. Alpha-1 Awareness UK “Alpha-1 Diagnosis and Treatment” (see footnote 18)
Time to Stop Reading, Time to Act!

For questions, comments and suggestions please contact
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