

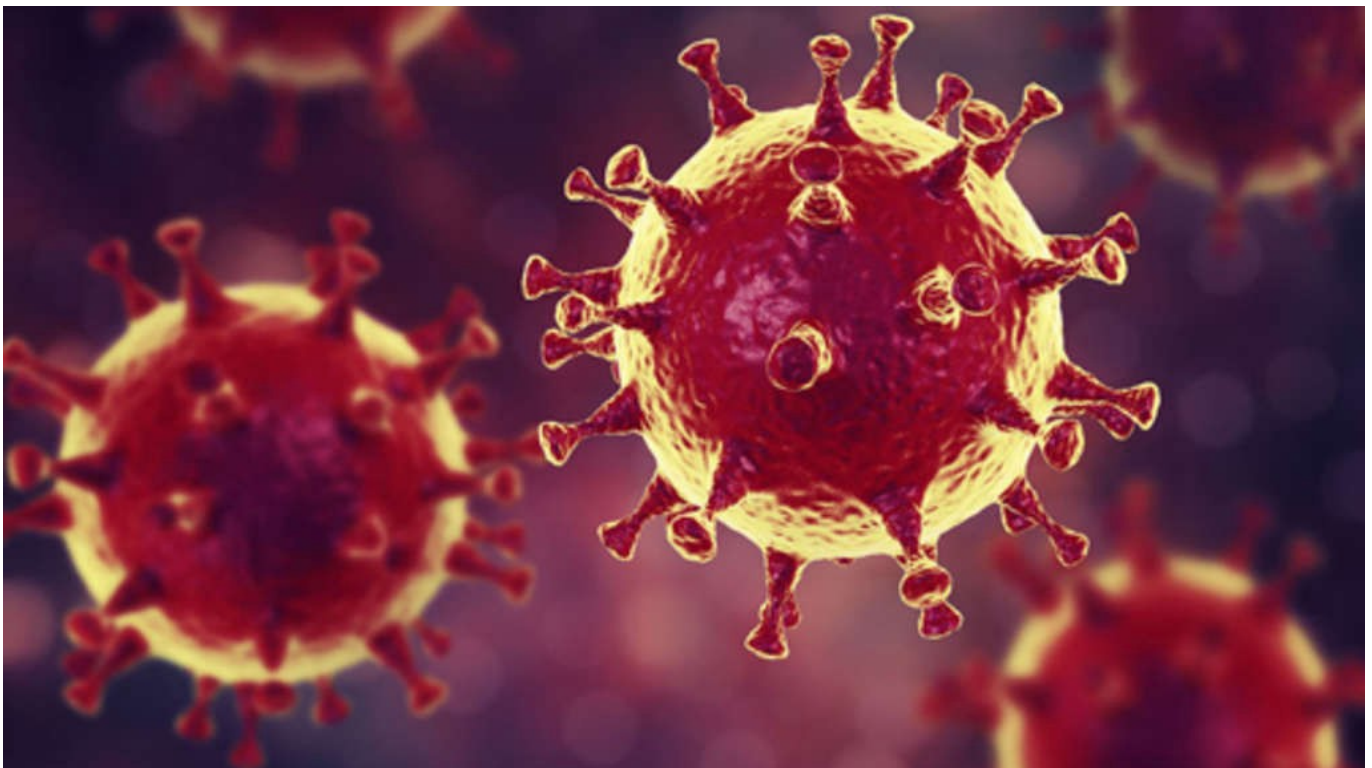
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Coronavirus: German Parliament knew about Sars-CoV-2 since 2012



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Mar 16 · 19 min read



The German parliament had a risk analysis carried out in civil protection in **2013**. It's terrifying that **this article was written in 2013**, it could have been written today.

Due to the extensive text, I have no time to manually translate the article into English. The following text is an automatic translation. I'm thankful when it will be translated into other languages.

Don't forget, this article was published on 03 January 2013.

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1. Definition of risk/type of event

A pandemic is a worldwide spread of a disease event Exceptional disease events can have natural causes, e.g. Recurrence of known pathogens (measles, typhoid fever) Imported cases of diseases with rare highly contagious and/or highly pathogenic agents (Ebola, Lassa fever) Pandemics with variations of known pathogens (influenza pandemic) Occurrence of new pathogens (Severe Acute Respiratory Syndrome, SARS) In exceptional cases, however, the occurrence of a pandemic can also be due to accidental or intentional release, e.g.: accidental release, for example through a laboratory accident (as in individual cases after the SARS pandemic or the H1N1 influenza in 1977, the so-called “Russian flu”, which was presumably the result of a laboratory release intentional release in the area of food extortion or also with a bioterrorist background (the best-known example here is the “Anthrax Letters” in the USA in 2001).

The present scenario describes an extraordinary epidemic that is based on the spread of a novel pathogen. The scenario is based on the hypothetical pathogen “Modi-SARS”, whose properties are described in the information sheet and which is very closely related to the SARS virus. Past experience has shown that pathogens with novel properties that trigger a serious epidemic event can suddenly appear. (e.g. SARS coronavirus [CoV], H5N1 influenza virus, Chikungunya virus, HIV).

A current example of a newly emerging pathogen is a coronavirus (“novel coronavirus”), which is not closely related to SARS-CoV.

This virus has been detected in six patients since summer 2012, two of whom have died. One patient was treated in Germany and was discharged as cured.

In contrast to SARS-CoV, however, this virus does not appear to be transmissible from person to person, or only very poorly, so that the current risk assessment assumes that the risk of illness as a result of transmission from person to person is low (as of 26 November 2012).

SARS-CoV and HIV were “new”, previously unknown viruses with a high lethality, which for HIV could only be reduced after years and extremely costly research. In contrast, chikungunya viruses and H5N1 viruses were already known; however, mutations altered the properties of these viruses, making them more transmissible to humans. SARS-CoV and H5N1 are transmitted via the respiratory tract; Chikungunya is transmitted by a vector (mosquitoes).

These diseases are therefore more difficult to control than HIV, which is transmitted through sexual intercourse or contact with HIV-positive blood. While HIV control in Germany and other countries in Western Europe or North America is relatively successful, this is not the case in many other countries with less good health care infrastructure — an indication of how essential control measures are in limiting the spread of the disease.

2. Description of the event

The hypothetical mode SARS virus is identical to the natural SARS-CoV in almost all characteristics. The incubation period, i.e. the time from the transmission of the virus to a human being until the first symptoms of the disease appear, is usually three to five days, but can range from two to 14 days. Almost all infected persons also fall ill.

The symptoms are fever and dry cough, the majority of patients have difficulty breathing, changes in the lungs visible in X-rays, chills, nausea and muscle pain. Diarrhoea, headache, exanthema (rash), dizziness, cramps and loss of appetite may also occur. The lethality rate is high with 10% of the patients, but varies in different age groups.

Children and adolescents generally have milder disease courses with a lethality rate of around 1%, while the lethality rate for over 65-year-olds is 50%. The duration of the disease also differs depending on the age of the patients; younger patients often get over the infection after only one week, while more seriously ill, older patients have to be treated in hospital for about three weeks, and treatment of up to 60 days has also been described for SARS-CoV. This age-dependent course of infection with SARS-CoV was not

assumed for SARS modes. To model the numbers of patients and affected persons in the scenario, we assume that all age groups are affected in the same way.

Other parameters that could modify the course of the disease, such as human contacts and mobility in conurbations or social networks, were also not taken into account. Transmission is mainly via droplet infection, but since the virus can remain infectious on inanimate surfaces for several days, smear infection is also possible. This is the only difference in transmissibility between the hypothetical SARS mode and SARS-1 lethality, which describes the proportion of people who die as a result of the infection.

CoV-naturally occurring pathogens can only be transmitted from person to person if a person already shows clear symptoms of the disease; there are no drugs available for treatment, so that only symptomatic treatment is possible. A vaccine is also not available for the first three years. In addition to adhering to hygiene measures, protective measures in this sense can be taken exclusively by isolating the diseased or suspected infectious persons and by using protective equipment such as protective masks, protective goggles and gloves. However, isolation, isolation and quarantine are only of limited effectiveness, since very pronounced infectiousness is already present at the onset of symptoms.

The infectious disease spreads sporadically and in clusters. Transmission takes place particularly through household contacts and in the hospital environment, but also in public transport, at work and during leisure time.

2.1 Location/spatial extension

Where does the event happen?/Which area is affected by the event?

The event occurs globally (mainly Asia, North America, Europe). The propagation in Germany is via a trade fair city in northern Germany and a university city in southern Germany.

In the initial phase of the event, a total of ten cases are registered to Germany. Two cases are of particular importance here, as they occupy key positions for dissemination. The other cases concern travellers who contribute to the dissemination.

The distribution is nationwide over Germany, analogous to the population density. This assumption reflects a theoretical, simplified model; in the case of a natural “real” eruption, geographical differences would have to be expected, the complexity of which cannot be illustrated here. The choice of a SARS-like virus is also based on the fact that the natural variant in 2003 quickly pushed very different health care systems to their limits. The Green Paper quoted here has also gone through a similar thought experiment with a mutated SARS virus. The present mode SARS scenario differs in its characteristics and the assumptions derived from them for the extent of damage.

A map of the spatial distribution of the number of patients at the peak of the first wave of infection is attached to the scenario.

2.2 Timing

When does the event happen? (Season/occasional time of day)

The event begins in Asia in February, but its dimension/significance is not recognized there until a few weeks later, and the first identified Mode SARS case occurs in Germany in April. This point in time forms the starting point of the present scenario.

2.3 Triggering events

What events lead to this event?/What triggers the event?

The pathogen originates from Southeast Asia, where the pathogen found in wild animals was transmitted to humans via markets. Since the animals themselves did not become ill, it was not apparent that there was any danger of infection. Chains of infection set in motion by this zoonotic transmission could only be traced retrospectively; this was not possible in all cases.

Domestic pets and farm animals cannot be infected by Modi-SARS and therefore do not contribute to the spread or maintenance of the chain of infection. two of the first cases introduced into Germany concern persons who have become infected in the same Southeast Asian country.

One of the persons flies to Germany that same evening to look after a stand at a trade fair in a large city in northern Germany, the other person flies back to Germany the day after to resume his or her studies in a university city in southern Germany after a

semester abroad in China. These two persons are two of the index patients in Germany through whom the infection is spread further, and are of particular interest because both persons come into contact with an extraordinary number of people and thus contribute greatly to the initial spread of the infection.

There are further cases imported into Germany, so that a total of ten infected persons are assumed to be responsible **for the first wave of infection**.

2.4 Duration and course

How long does the event and/or its direct effects last?

New cases can be expected until a vaccine is available.

The present scenario is based on a total period of three years, assuming that a vaccine is developed, released and available in sufficient quantity after this period. During the three years, the pathogen changes through mutations in such a way that even people who have already experienced an infection become susceptible to infection again.

This **results in a total of three disease waves of varying intensity**, and which period of time after the beginning/occurrence of the event is to be taken into account when determining the extent of damage?

The extent of damage is determined as a sum for the entire three-year period.

How does the event proceed?

Starting with the first cases in northern and southern Germany, the pandemic spreads in waves with increasing numbers. In principle, a correspondingly higher number of cases can be expected, especially in conurbations, due to the high population density and patterns of movement (high mobility, use of mass transport, etc.)

It is assumed that each infected person infects an average of three people and it takes three days before the next transmission occurs. So-called “super spreaders” are not taken into account here. Furthermore, it is assumed that the population is fully susceptible to the virus. A reduction in the number of susceptible people is achieved by passing through the infection. The number of people who can be infected decreases because

those who are infected die or develop temporary immunity. The spread is also slowed and limited by the use of anti-epidemic measures. Such measures include quarantine for contact persons of infected persons or other isolation measures such as the treatment of highly infectious patients in isolation wards, taking into account special infection control measures.

Means of containment include school closures and cancellation of major events. In addition to these measures, which can be ordered according to the Infection Protection Act, there are other recommendations that contribute to personal protection, e.g. for occupationally exposed persons, such as adherence to hygiene recommendations. **The anti-epidemic measures begin after ten patients in Germany have died of infection. In general, measures are described as effective between day 48 and day 408.**

During the first wave (days 1 to 411) a total of 29 million people in Germany fall ill, during the second wave (days 412 to 692) a total of 23 million and during the third wave (days 693 to 1052) a total of 26 million people fall ill in Germany.

In addition, the mortality rate of both those affected by Modi-SARS and other diseases as well as those in need of long-term care will increase, as they will no longer be able to receive adequate medical care or nursing due to the overburdening of the medical and nursing sector.

The pool of people who can be infected and thus potential carriers of the infection becomes smaller over time, since people who were infected and have since recovered are now initially immune to the pathogen, while other people have died of their disease.

After a peak, the rate of new cases also falls, because the population generally reacts to the massive disease incidence with increased (self-)protective measures. As a result of these measures, the number of new cases decreases, which leads to a decline in individual protective measures (due to a lower subjective perception of risk), which in turn increases the number of new cases.

These interactions contribute to the occurrence of new the enormous number of infected persons whose disease is so severe that they should be hospitalised or would require intensive medical care in hospital exceeds the existing capacities many times over. This requires comprehensive screening (triage) and decisions as to who can still be admitted to a hospital

and treated there and who cannot be treated there. As a consequence, many of those who cannot be treated will die.

2.5 Predictability/alerting/communication

Is the event expected?

The occurrence of new diseases is a natural event that will occur again and again. In practice, however, it is not possible to predict which new infectious diseases will occur, where they will occur and when they will occur.

The pathogen Modi-SARS was discovered only a few weeks before its first appearance in Germany. **The official warning via the regular WHO reporting channels will only be issued at the time when the first two diseases are already detected in Germany.**

How can the authorities prepare for this event? The discovery of the pathogen will only be known to the German authorities a few days before the first case of illness in Germany.

Accordingly, only existing plans/measures can be activated at first. The Infection Protection Act (IfSG)⁸ applies, according to which two or more similar illnesses for which an epidemiological connection is probable or suspected are subject to notification (§6 paragraph 1 sentence 1 no. 5 IfSG). In addition, depending on the epidemiological situation, the BMG may restrict or extend the reporting obligation (§15 IfSG). At the international level, the International Health Regulations (WHO, 2005), which are legally binding guidelines for the control of infectious diseases, apply. At the national level, efforts have been made to develop influenza pandemic plans, particularly since the increased occurrence of human cases of H5N1 avian influenza (“bird flu”). There is a national influenza pandemic plan (RKI, 2007), which consists of three parts: 1. overview of the measures 2. phase-oriented tasks and recommendations for action 3. scientific connections. On the federal state and local authority level, own pandemic plans have been drawn up on this basis (e.g. City of Frankfurt am Main, 2008, Lower Saxony Ministry for Social Affairs, 2006).

In addition, many large companies and institutes have developed their own plans to reduce absences due to illness and to ensure working ability, e.g. through teleworking. Loss of working time can have various causes; on the one hand, the employee himself

can be ill, but on the other hand he can also stay away from the workplace to reduce his risk of infection (e.g. in public transport, but also when in contact with colleagues), or the care of sick relatives can be the reason.

Once it has been identified that the pathogen is transmissible via the respiratory tract, the population is informed very quickly about general protective measures (e.g. follow hygiene rules, avoid mass gatherings, avoid public transport, follow the measures ordered by the IfSG). It is questionable to what extent the communicated recommendations/instructions are implemented, e.g. to what extent people have protective equipment and can use it correctly. The actions of people in danger or disaster situations are determined by a number of different factors that also influence each other, including, for example: -own risk perception-social context (family, job, ...)-socioeconomic status (income, class and milieu, ...)-level of education.

Educational level communication:

The time between the German authorities becoming aware of the pathogen and the dissemination of initial information by the media is approximately 24 hours. Accordingly, uncertainty among the population is to be expected. In addition, a (more or less qualified) exchange via new media (e.g. Facebook, Twitter) is to be expected. The event requires the production of information material which must be continuously adapted to the situation and which is given to the population via different media (e.g. print media, television, social media).

In the initial phase, the occurrence of the disease and the associated uncertainties are communicated (e.g. unknown pathogens, extent, origin, dangerousness cannot be described precisely, countermeasures can only be formulated in general terms). New findings are passed on promptly. Care is taken to ensure that the questions and fears of the population are adequately addressed. It can be assumed that crisis communication is not always adequately successful. For example, contradictory statements from different authorities/agencies can make it difficult to build trust and implement the necessary measures. Only if the population is convinced of the usefulness of measures (e.g. quarantine), these can be implemented.

2.6 Official measures

In addition to informing the population, the authorities take measures to contain and manage the event, building on existing plans and past experience.

Crisis committees are convened in good time and take over the management and coordination of the measures. The foresighted assessment of the situation and the corresponding planning of defence measures are coordinated among all levels involved. The official measures in the health sector include isolation, isolation and quarantine. Segregation describes the spatial and temporal segregation measures of sick people, suspects of illness and infection from each other and from susceptible, non-infected persons, but also in groups (cohort isolation, quarantine, household quarantine). quarantine defines the segregation of persons not requiring treatment without including sick people or suspects of illness.

The term isolation should exclusively describe the inpatient treatment of sick or suspected sick persons in an isolation or special isolation ward. A precise definition and precise use of these terms is important for communication at all levels — especially since these terms are not or only insufficiently described in the IfSG. It is important to identify and find contact persons suspected of being infected, to hold (sometimes difficult) discussions with them and to implement measures provided for under the IfSG.

If a contact search by the public health authorities is no longer possible due to the large number of cases, an individual case report is no longer meaningful and can be cancelled. The competent authorities, first of all the public health authorities and there primarily the public health officers, must take measures to prevent communicable diseases. The IfSG permits among other things, restrictions of basic rights (§16 IfSG), such as the right to the inviolability of the home (Article 13 (1) GG).

Within the framework of necessary protective measures, the fundamental right of personal freedom (Article 2 (2) sentence 2 GG) and the freedom of assembly (Article 8 GG) can also be restricted (§ 16 (5) to (8) and § 28 IfSG). In addition to these measures to be ordered directly by the public health officer, the Federal Ministry of Health can order by statutory order that threatened sections of the population have to take part in protective vaccinations or other measures of specific prophylaxis (Article 20 (6) IfSG), whereby the right to physical integrity (Article 2 (2) sentence 1 GG) can be restricted. In the course of the event on which this report is based, these tasks present the competent authorities with major or sometimes no longer manageable challenges. This applies both

in terms of human and material resources and in terms of the enforceability of official measures.

3. Effects on CRITIS/supply

Preliminary remark: The critical infrastructures listed below are complex systems on which a large number of supply functions depend; in principle, it can be assumed that the impairment of individual infrastructure sectors and industries will also have an impact on other infrastructures and their supply services. Since the risk analysis is conducted from the federal government's overarching perspective, the expected effects on the area of CRITIS/supply are presented below in a generalised, qualitative manner. Significant interdependencies are discussed in the explanations of the individual sectors. As described under 2.4, the event takes place in three waves of illness.

During the first wave, particularly acute effects are generally to be expected in all of the areas mentioned below, since up to 8% of the total population is affected at the same time. The risks of infection and transmission differ according to occupational field. The following explanations are based on the assumption that this will also apply accordingly in the working population.

In addition, there are staff shortfalls due to the care of sick relatives, the care of children, etc. or the fear of infection. As sick leave increases, approved holidays and further training have to be postponed, operational procedures are adapted accordingly, non-urgent maintenance work, etc. is reduced, and the possibilities offered by paragraphs 14 and 15 of the Working Hours Act are used.

The increasingly high number of sick persons and absences due to the care of sick relatives or the fear of infection have an impact on personnel availability in all branches and sectors. This applies in particular to areas with many personal contacts. In the long term, it can also be assumed that there will be fundamental difficulties in the operation of infrastructures due to the permanent loss of personnel (deceased). Conversely, experience from the first wave will lead to corresponding adjustments and measures in the operation of critical infrastructures. It can be assumed that the maintenance of supply will be given the highest priority, that the suppliers will make corresponding efforts and that therefore no large-scale supply failures are to be expected.

However, at certain points, longer-lasting disruptions may also be expected, since services are not available everywhere to the usual extent due to staff shortfalls. This applies in particular to personnel-intensive areas and areas with low personnel redundancy in key positions. The operation of critical infrastructures is dependent in many places on highly qualified and specialised personnel, the failure of which can have far-reaching consequences (e.g. in the area of transmission network control, air traffic control, etc.) and could result in supply shortfalls or bottlenecks of a magnitude that is relevant for the federal government.

The following estimates are based on the assumption that the filling of these key positions can still be guaranteed, i.e. that not too high a proportion of these personnel will fall ill at the same time within the period under review. This restriction is necessary because this scenario would have to be assessed significantly differently under a different assumption. In addition, in view of the many international interdependencies, care services from other countries are also of great importance for Germany. Many goods and services are provided worldwide by only a few key producers. Thus, failures in the area of imported goods and raw materials could lead to noticeable bottlenecks and cascade effects in Germany as well.

4. Objects of protection concerned

Which objects of protection are directly/directly affected by the event? Note: This section generally records for which objects of protection impacts/damage is to be expected from the event and from the failure of critical infrastructures. The actual extent of the damage is determined in a separate step of the risk analysis.

Dead: At least 7.5 million dead are to be expected over the entire period.

Injured / ill: **During the first wave of the disease alone, 6 million people are expected to fall ill at the same time.** Those in need of help: Where isolation, isolation, quarantine are necessary, the persons affected are dependent on appropriate external care. Similarly, the provision of food and medicines, especially for the elderly and sick, could be more difficult and may require state intervention, e.g. because nursing staff are not protected by vaccination (i.e. more difficult working conditions, additional work, etc.). Examples of conceivable cases: People in domestic quarantine must be cared for and (their health parameters) controlled -without these measures, the quarantine will

not be adhered to -Elderly people or people with previous illnesses are particularly unsettled by the development and avoid visiting shops -People who have previously looked after elderly or ill neighbours (shopping, pharmacy visits) reduce this commitment for a variety of reasons (e.g. they are not able to take care of their children) delivery service of pharmacies collapses Missing persons: Missing persons as a result of the event are to be expected to a lesser extent, e.g. persons who die unnoticed due to the illness and whose fate cannot be clarified.

5. Reference events

- SARS pandemic 2002/2003, mainly in Canada and some Asian countries
- EHEC: 855 HUS diseases and 2,987 cases of EHEC gastroenteritis (without development of HUS), i.e. a total of 3,842 diseases were recorded, and there have been hardly any exceptional epidemic events in Germany in recent decades that would have led to abnormal material damage or loss of life.
However, the example of SARS shows that such epidemics can easily affect countries with high development and health care standards.

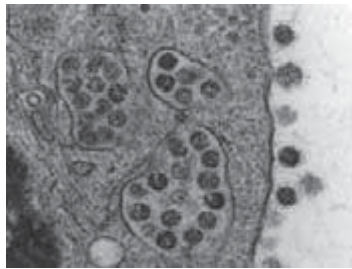
Examples of described outbreak patterns of SARS:

- The index patient infected 13 other hotel guests and visitors to Hotel M — these persons had no direct contact with the index patient. A Hotel M guest infected 47 nursing staff and doctors, causing about 112 secondary infections and 26 tertiary cases.
 - Another hotel guest infected 225 people in Toronto between February and June; subsequently, the Toronto Health Department counted 2,132 suspected cases; 23,105 contacts were quarantined (Breugelmans et al. 2004).
 - Study among medical students in Hong Kong: whoever had visited a SARS patient in their area (before diagnosis of SARS) had a 7-fold increased probability of falling ill. All students who were at least one meter away from the patient became infected.
 - Flight: 16 of 119 passengers (13%) became infected (laboratory confirmed cases), 2 other suspected cases after a flight with a symptomatic person. The risk of getting infected was 3 times higher within a 3-row distance from the sick passenger.

SARS information:

SARS coronavirus (coronavirus), intracellular and on the surface of verocells.

Transmission electron microscopy, ultra thin section. Scale = 100 nm. Source: RKI
source:Hans R. Gelderblom, Freya Kaulbars (2003)/RKI



Pathogen: SARS corona virus (enveloped virus, 80–200 nm, positive strand RNA, approx. 30 kbase length).

Incubation period: 2–14 (mostly 3–5) days

Infectiousness: Patients become infectious when symptoms are already pronounced, i.e. some time after the onset of symptoms, R_{015} is estimated to be 2.7 or between 2.2 and 3.7.

So-called Super Spreaders are not taken into account in the calculation.

Virus was cultured from respiratory secretions, stool and urine and detected in tear fluid.

Symptoms: Fever $>38^{\circ}\text{C}$ (100%), dry cough (100%), shortness of breath (80%), radiological changes, chills (73%), nausea (70%), myalgia (60%), diarrhoea, headache, exanthema, dizziness, cramps, loss of appetite

Fatalities: around 10% (1–50%, depending on age and secondary diseases)

Tenacity: In stool 1–2 days, in diarrhoea 4 days, on surfaces (fomite) days

Prophylaxis: Exposure prophylaxis (protective clothing, isolation, quarantine), no vaccine available

Therapy: only symptomatic, between 20 and 30% need intensive medical care, about 14% need artificial respiration, no antiviral drugs available.

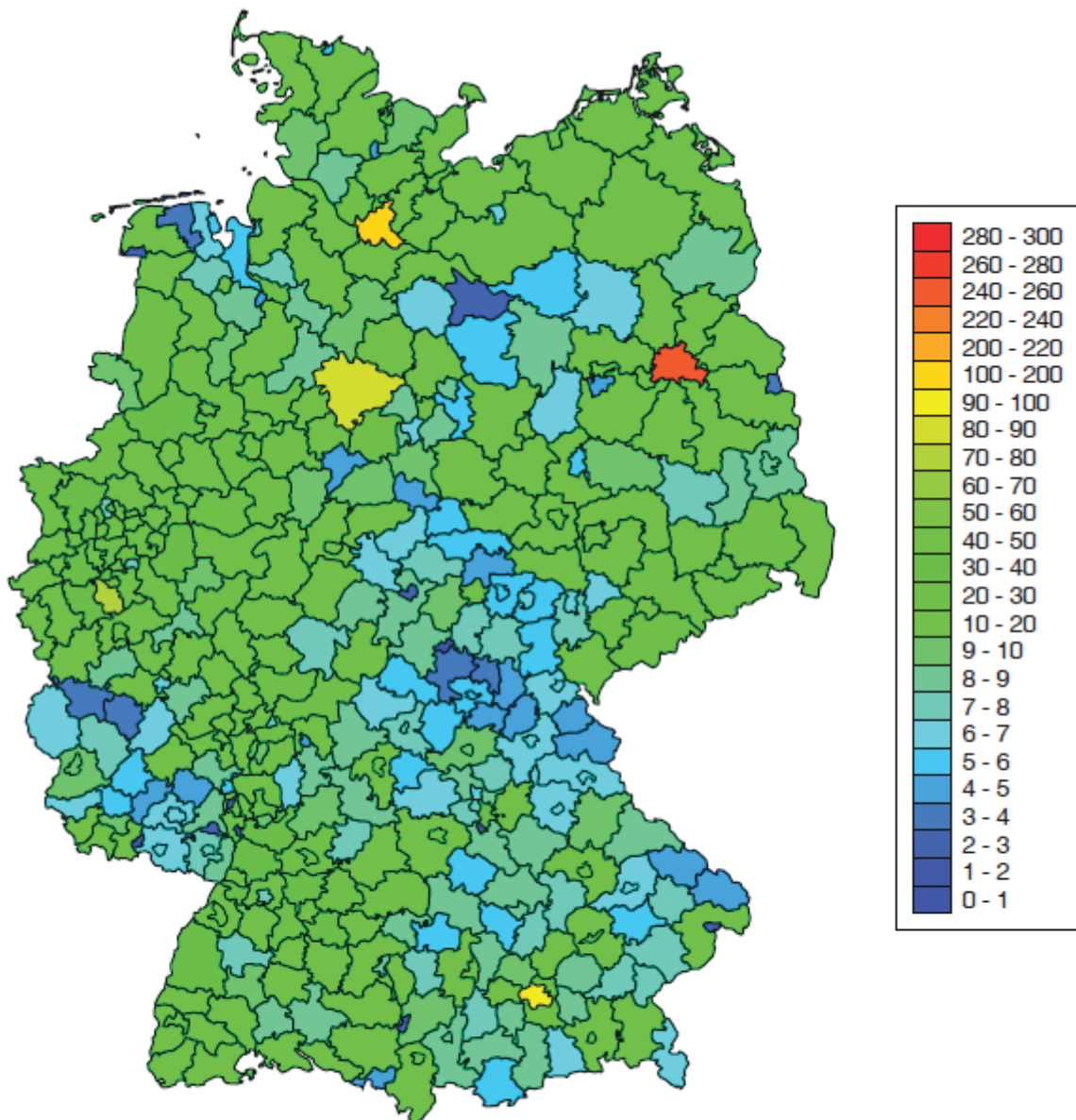
Quick start of therapy to prevent/control (bacterial) secondary infections improves the prognosis

Duration: The majority of patients could be discharged from hospital after 3 weeks, but in some cases it took 40–50 days. Patients over 60 years of age often had to be treated for 60 days, and fatal courses accounted for about 50% in this group.

Properties that made SARS controllable Later onset of virus excretion Virus was isolated only in exceptional cases 3 weeks after disease onset, no transmission is reported later than 10 days after defervescence. SARS was rarely observed in young children Chronic excretion or asymptomatic courses are rare.

Disease wave Modes-SARS

Sick people [in thousands]



Unterrichtung

durch die **Bundesregierung**

Bericht zur Risikoanalyse im Bevölkerungsschutz 2012