

The Director General

Maisons-Alfort, 13 March 2025

## **OPINION** **of the French Agency for Food, Environmental and** **Occupational Health & Safety**

### **on the assessment of the health risks to digital platform-based food delivery workers in France**

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*ANSES undertakes independent and pluralistic scientific expert assessments.*

*ANSES primarily ensures environmental, occupational and food safety as well as assessing the potential health risks they may entail.*

*It also contributes to the protection of the health and welfare of animals, the protection of plant health and the evaluation of the nutritional characteristics of food.*

*It provides the competent authorities with all necessary information concerning these risks as well as the requisite expertise and scientific and technical support for drafting legislative and statutory provisions and implementing risk management strategies (Article L.1313-1 of the French Public Health Code).*

*Its opinions are published on its website. This opinion is a translation of the original French version. In the event of any discrepancy or ambiguity the French language text dated 13 March 2025 shall prevail.*

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On 8 March 2021, ANSES received a formal request from the General Confederation of Labour (CGT) to carry out the following expert appraisal: assess the health risks to digital platform-based food delivery workers in France<sup>1</sup>.

#### **1. BACKGROUND AND PURPOSE OF THE REQUEST**

The rise of communication technologies has made contact between individuals easier, leading to the development of new business models and, in particular, digital platforms. Because of their flexible hours and accessibility (no minimum level of education required), the forms of work offered by these platforms are attracting many workers. A growing number of consumers are using these interfaces to order goods or services, thereby increasing the demand for workers on these platforms.

In view of this situation and the growing number of workers concerned, the General Confederation of Labour (CGT) – which meets the conditions of Article L.1313-3, paragraph 2, of the Public Health Code – made a formal request to ANSES to assess the health risks to

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<sup>1</sup> Although these workers may be referred to in different ways in the remainder of this opinion, the population under consideration remains "digital platform-based food delivery workers in France".

digital platform-based food delivery workers, considering all the types of exposure associated with the work (accidents, biomechanical constraints, psychosocial risks, air pollution, temperature constraints, etc.), the specific working conditions associated with its organisation, and the delivery workers' relations with these digital platforms.

This expert appraisal was carried out against a backdrop of emerging regulations, both in France (with the adoption of new rules on the remuneration of delivery riders, for example) and at European level (with the debates surrounding a European directive on self-employed workers).

As part of this expert appraisal, ANSES's work sought to:

- identify and characterise the digital platforms in France serving the catering market and the workers using two-wheeled vehicles to deliver food for these platforms;
- analyse the associated business model, the way these platforms operate, their dynamics, the regulations that govern them and the relationships they create with the delivery riders (contracts, algorithms, etc.);
- describe the work of the delivery riders in relation to the characteristics of the work organisation put in place by the platforms, and in particular the use of technology and algorithmic management;
- characterise the risks to worker health (characterisation of the population, vulnerability factors, OA/OD<sup>2</sup> reporting, environmental, physical, organisational, social or psychosocial risk factors, possible health effects);
- identify the possible ways and forms in which occupational health and safety prevention could be developed.

## 2. ORGANISATION OF THE EXPERT APPRAISAL

The expert appraisal was carried out in accordance with French Standard NF X 50-110 "Quality in Expert Appraisals – General requirements of Competence for Expert Appraisals (May 2003)".

The expert appraisal falls within the sphere of competence of the Expert Committees (CESs) on "Physical agents and new technologies" (lead CES) and "Socio-economic analysis" (for contribution). ANSES entrusted the expert appraisal to the Working Group (WG) on "Platform delivery riders" set up in January 2022. The methodological and scientific aspects of the work were presented to the CESs between 26 May 2021 and 10 October 2024. This work was adopted by the CES on "Physical agents and new technologies" at its meeting on 10 October 2024.

The expert appraisal was coordinated jointly by the Unit for Assessment of Risks Related to Physical Agents (part of the Risk Assessment Department) and the Social Sciences, Economics & Society Department.

ANSES analyses interests declared by experts before they are appointed and throughout their work, in order to prevent risks of conflicts of interest in relation to the points addressed in expert appraisals.

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<sup>2</sup> OA: Occupational accident, OD: Occupational disease.

The experts' declarations of interests are made public via the website: <https://dpi.sante.gouv.fr/>.

To carry out this expert appraisal, the Working Group drew mainly on the available academic and grey literature (institutional reports, publications and web pages of the platforms themselves), whether directly or indirectly related to platform workers.

Given the relatively recent and evolving nature of the subject, the Working Group interviewed representatives of the French players concerned by the delivery of food via digital platforms: the Authority for Labour Relations on Job Platforms (ARPE), the Association of Platforms Using Freelance Workers (API) and the General Confederation of Labour (CGT). ANSES also made a request to the API for access to data (on ride times, distances covered, OA/OD reporting and the general terms and conditions offered by the platforms to workers), but this was not followed up. Lastly, organisations potentially holding health data (on accident rates) were interviewed: National Health Insurance Fund (CNAM), Ministry of Labour's Directorate for Research, Studies & Statistics (DARES) and *Santé Publique France*. This expert appraisal also led to an exploratory study on the physical and mental health of platform delivery riders. This study, funded by ANSES, was carried out by the Toulouse branch of the Interservice Occupational Health Association (ASTI).

It appeared necessary to provide a precise description of the work carried out by platform delivery riders in order to better analyse the associated health issues and the potential risk prevention actions identified. To do this, the Working Group drew on various models for analysing work organisation and occupational health, based on a conceptual and scientific framework that enabled a multidisciplinary approach.

As the work organisation and conditions were closely tied to the highly specific business model of these platforms, this business model was analysed in depth, along with the regulations governing it. A comprehensive approach to assessing this subject was therefore developed.

### **3. ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS OF THE EXPERT COMMITTEE ON "PHYSICAL AGENTS AND NEW TECHNOLOGIES" AND THE WORKING GROUP ON "PLATFORM DELIVERY RIDERS"**

#### **3.1. Framework for the discussion**

Analysing the risks of a work situation such as that of food delivery riders on two wheels involves going beyond the principle of exposure-effect, because this does not appear to be sufficient to address the health issues associated with these workers. This expert appraisal favoured an approach that took account of both the interactions between factors (individual, collective, organisational, societal, economic and environmental) and the realities of work and their dynamic changes over time. This approach made it easier to explain what created the risk and the diversity of effects on worker health, but also to identify the diverse factors (economic, regulatory, etc.) giving rise to the situations where these effects are manifested.

It was important to be able to consider and question the following:

- the business model of these platforms, which leads to a specific type of work organisation and realities;
- the main direct effects on worker health of each factor taken in isolation;

- the interactions between these different factors, which alter the main known effects and give rise to new, additional direct effects on worker health;
- and lastly, the existence of indirect effects resulting from the interactions between these factors. The causal processes and chains are complex, meaning that, for example, these factors could initially cause tension and fatigue that in the longer term might lead to a lasting and possibly irreversible disorder.

In addition, this dynamic, interactionist approach highlighted the adaptation activities – attempts to regulate imbalances whose effects do not arise from simple, linear relationships – developed by individuals, organisations and institutions. Depending on the context, variations in the intensity or frequency of the same factor could lead to different positive or negative effects. For example, depending on their living conditions and resources, workers will use various coping mechanisms, in different ways, and consequently will not all develop the same disorders.

### 3.2. Emergence of digital labour platforms and the associated business model

The development of digital labour platforms in France really took off in the early 2010s. A report by the General Inspectorate of Social Affairs (IGAS) on "Les plateformes collaboratives, l'emploi et la protection sociale" ["Collaborative platforms, employment and social protection"]<sup>3</sup>, distinguished three subsets of platforms, each included in the other:

- **digital platforms** that focus on referencing results, such as search engines or social media platforms;
- **collaborative platforms** that promote peer-to-peer exchanges and relationships;
- **job platforms**, "because they have more direct and indirect job content than the others and because of the more specific social issues relating to labour law and social protection that they raise"<sup>4</sup>.

These job platforms have always claimed to be simple digital intermediaries – "marketplaces" – facilitating transactions between third parties (in this expert appraisal: between restaurants and their customers). They therefore consider themselves exempt from any real responsibility, whether this concerns the way in which the service is provided or the working conditions of the delivery riders. The business model of these job platforms systematically and massively calls on self-employed contractors. Among the different job platforms, mobility platforms (for passenger transport and deliveries) are at the crossroads of various legal positions between the case law of the Court of Justice of the European Union (CJEU) on the type of services provided by platforms, the case law of the French Court of Cassation (which has reclassified workers as employees) and a succession of national laws that have tended to confirm the status of self-employed worker.

When digital platforms offering food deliveries first appeared in France, they claimed to be technically and socially innovative, highlighting new services and new ways of working that were supposed to meet the expectations of part of the population in terms of "breaking free from salaried employment" (flexible hours, no hierarchical relationships, no qualifications required, etc.), thereby facilitating access to employment for all.

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<sup>3</sup> Amar, N., & Viossat, L. C. (2016). Les plateformes collaboratives, l'emploi et la protection sociale. Inspection générale des affaires sociales (IGAS), rapport.

<sup>4</sup> *Ibid.*

To gain a foothold on the market and then establish a dominant position, the platforms, backed by major capital fundraising campaigns<sup>5</sup>, began by offering attractive remuneration packages to delivery riders in order to build up the "fleet" that was essential to their operations. In a second step, once the market had stabilised, they rapidly adjusted their terms and conditions of use, in particular by changing the method of remuneration: from payment by the hour to payment per ride, remuneration that varied according to distance, and distribution of tasks (order collection, delivery). These recurring adjustments, decided unilaterally by the platforms, have led to uncertainty, due to the lack of visibility in terms of income for the delivery riders.

On a legal level, the French legislator acted very promptly (2016 Labour Act<sup>6</sup>), expressly and formally favouring the use of self-employed workers by platforms. This legislative option crystallised as regulations were introduced, notwithstanding the case law of the Court of Cassation in favour of a salaried status for platform workers. French law therefore stands out from the legislation of other European countries, especially those that have created an *ad hoc* status, between salaried employment and self-employment. In April 2024, the European Parliament adopted a new directive on platform workers (Directive (EU) 2024/2831<sup>7</sup>). This aims to ensure that people performing platform work have a correctly defined professional status and to correct "false self-employment"<sup>8</sup>. The text also regulates algorithmic management for the first time in the European Union. Member States have two years to transpose its provisions into national law.

On a socio-technical level, the parallel development of technical tools, powerful algorithms<sup>9</sup> and marketing techniques is taking advantage of all the data available from the enormous growth in digital exchanges. This has enabled platforms to make massive use of workers supervised remotely, in particular via geolocation. There is still a major lack of transparency about how the various algorithms work, both in terms of understanding by workers and external audits. This opacity cannot be justified by the need to prevent fraud<sup>10</sup>. It also makes it more difficult to analyse the delivery riders' situation, for the riders themselves and for observers.

### 3.3. Population and organisation of work

#### **Three generations of delivery riders**

When delivery platforms emerged, workers may have been attracted by the promised freedom regarding working hours and the opportunity for physical exercise. The "first generation" of riders was made up of more athletic individuals and cyclists, who did not wish to spend their days sitting behind a desk and working set hours. Although some of them are still working, they have gradually been replaced by workers who had found it difficult to enter the job market, or even by illegal immigrants with no other possible source of income. They have been described as "second generation" delivery riders. The "third generation" refers primarily to undocumented workers, who have been mainly working in France's major conurbations for a

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<sup>5</sup> For further information, refer to Section 2.1.4 of the expert appraisal report.

<sup>6</sup> Act no. 2016-1088 of 8 August 2016 on labour, modernisation of social dialogue and safeguarding of career paths.

<sup>7</sup> Directive (EU) 2024/2831 of the European Parliament and of the Council of 23 October 2024 on improving working conditions in platform work.

<sup>8</sup> Terms used in the new directive on platform workers (Directive (EU) 2024/2831).

<sup>9</sup> For the sake of convenience, a distinction can be made between the different types of algorithms used by the platforms: identification algorithms, matching algorithms, pricing algorithms, disconnection algorithms and algorithms that do not fall into any of these categories.

<sup>10</sup> See Section 2.2.2.5 of the expert appraisal report.

number of years now. This chronology of delivery rider profiles, based on an analysis of the scientific literature, is presented in more detail in Section 3.2.2 of the expert appraisal report.

Without identifying them all, studies of platform workers in France<sup>11</sup> have highlighted the main characteristics of the delivery rider profile: predominantly male and young, from a working-class background and with few or no qualifications. It should be noted that the delivery rider profiles described in these studies are similar to those found in studies of delivery riders in other countries and continents.

### **Self-employed status**

To understand how delivery platforms have been able to emerge and develop in the French socio-economic landscape, it is necessary to go back to the creation of the self-employment scheme in 2008. Self-employed status under this scheme is an explicit condition laid down by the vast majority of platforms for creating a delivery rider account. Since 2016, the semantics associated with this scheme have changed, with the term "micro-entrepreneur" now preferred. Despite this context favouring the development of non-standard forms of work and employment, French labour law has remained unchanged in its binary structure: workers are either employees or self-employed. Several European countries have introduced a third, intermediate status between salaried employment and self-employment. These third statuses are, in fact, very diverse. They include "workers" in the UK (self-employed workers who are economically dependent on a small number of platforms), the Italian "co.co.co."<sup>12</sup> with a special status for food delivery riders, and the Spanish "TRADE"<sup>13</sup>.

While the platforms claim to offer a simple process whereby all a person needs to do for an easy job is to sign up, submit documents online to "become a delivery partner" and open the app to start earning money, the registration procedures are in fact restrictive.

In general, all entrepreneurs face these same issues, but not all are equal when it comes to meeting these demands. In the case of delivery riders, the platform requires them to be registered with the self-employed scheme. Once again, this is not a choice for most workers, particularly those of the "third generation". The status of micro-entrepreneur leads to transfers of responsibility that need to be taken into account, with consequences for the occupational health and safety of platform delivery riders.

### **Algorithmic management: fundamental to the work**

The operation of these platforms relies heavily on algorithmic management, as defined by the European Agency for Safety and Health at Work (EU-OSHA<sup>14</sup>): *"the use of algorithms to allocate, monitor and evaluate work tasks and/or to monitor and evaluate workers' behaviour and performance through digital technologies and the (semi)automatic implementation of decisions."* The aim is to ensure that self-employed contractors are assigned to tasks in an optimised way, and that they are assessed and disciplined using algorithms. Huge volumes of

<sup>11</sup> Jan, 2018 (sociology); Lebas, 2019 (political science); Leblanc *et al.*, 2019 (psychology of work and organisations); Dablanc *et al.*, 2021 (urban planning and statistics); Le Lay & Lemozy, 2021 (sociology and psychodynamics of work); Daugareilh, 2022 (multidisciplinary and comparative approach).

<sup>12</sup> *Contratti di collaborazione coordinata e continuativa*: continuous and coordinated contractual relationships organised by the client.

<sup>13</sup> *Trabajadores autonomos economicamente dependientes (TRADE)*: economically dependent self-employed workers.

<sup>14</sup> [https://osha.europa.eu/sites/default/files/documents/artificial-intelligence-worker-management-definitions\\_en.pdf](https://osha.europa.eu/sites/default/files/documents/artificial-intelligence-worker-management-definitions_en.pdf)

data are also captured at any one time through the use of their smartphones. The system is designed to operate without human interaction, and therefore without the possibility of discussion or negotiation between the worker and the platform. This absence of human interaction is sometimes presented as offering greater neutrality. In practice, digital tools also incorporate many biases (e.g. reproduction of socio-ethnic stereotypes). The lack of transparency in the rules governing the construction of algorithms, operating rules and work rules, as well as their constant development, prevents any assessment of the reality of their "neutrality" (or fairness).

The available studies show that algorithmic management plays a dominant and disruptive role in work organisation<sup>15</sup>:

- it eliminates local human management by automating supervision of the work (prescription, monitoring and control, discipline);
- it creates an exacerbated imbalance of information between platforms and delivery riders, compared with the way work is traditionally organised, with a lack of transparency for the delivery riders;
- it leads to a significant gap between prescribed and actual work<sup>16</sup>. One example of this is the way in which the platforms talk about how easy it is to do this job, which does not at all reflect the reality of the delivery riders' experience.

In response to all the constraints generated by this organisational model, delivery riders are obliged to develop coping strategies (working more quickly, extending their working hours, etc.) that can have a negative impact on their physical and mental health, as well as on their social and emotional lives.

Even if some groups do become organised, the self-employed status, the turnover of the workforce, the heterogeneity of the delivery riders' profiles and motivations, as well as the competition between them, are the greatest obstacles to the emergence of collective strategies of worker representation, which could foster the development of preventive actions (see Section 5.2 of the expert appraisal report).

### **3.4. Issues and findings relating to occupational health**

#### **A lack of data**

There is a lack of data in the platform-based delivery sector, particularly with regard to occupational health issues (mainly occupational accidents and diseases). This shortage, which can largely be explained by the workers' self-employed status, contrasts with the massive amount of data on activities, delivery riders and consumers collected by the platforms for their own operations. These data are rarely communicated to the public authorities. When they are, they are submitted in a format that makes them difficult to use.

The systematic absence of health data on riders carrying out deliveries on two wheels (and on digital platform workers more generally) is one of the first lessons to be learned from this expert appraisal, and was one of the main methodological difficulties faced by the Working Group. Quantitative data on exposure and health problems associated with this work are therefore lacking. Nevertheless, a number of quantitative studies (mainly socio-demographic studies) and qualitative studies (mainly in sociology and work psychology) have been conducted on

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<sup>15</sup> See for example Ivanova *et al.*, 2018.

<sup>16</sup> For a definition of these concepts (in French), see: [https://www.anact.fr/sites/default/files/2024-06/fiche\\_outil\\_2\\_comprendre\\_et\\_questionner-2.pdf](https://www.anact.fr/sites/default/files/2024-06/fiche_outil_2_comprendre_et_questionner-2.pdf).



delivery riders on bikes, or on two wheels more generally, in France and many other countries around the world (Europe, North and South America, Asia, etc.). They provide detailed and convergent analyses of the health issues associated with this type of work organisation.

The literature on the health problems of delivery riders on bikes or motorised two-wheeled vehicles focuses mainly on the risks of accidents and the psychosocial risks associated with the specific organisation of this activity. To compensate for the lack of specific data on platform-based food delivery riders (at both international and national levels), studies of occupations and activities with common characteristics were analysed.

### **Risk factors associated with digital platform-based food delivery work**

In addition to the risks specific to delivery work on two wheels, and more particularly while riding a bike in an urban environment (exertion, postures, noise pollution, temperature constraints, etc.), these studies highlighted a number of aspects specific to the organisation of work by the platforms that increase the risk of health problems.

Because customer demand fluctuates greatly, the platforms need to be able to mobilise a large number of delivery riders in a very short space of time in order to keep their promise of rapid delivery. They also want to be able to do this without having to bear the cost of keeping delivery riders available during off-peak periods. The low barriers to entry make it easy for the platforms to find delivery riders in good time, while the riders' self-employed status and piecework remuneration mean that they shoulder the responsibility and the consequences of the risks associated with the work.

For the delivery riders, the lack of any remuneration for waiting time, the opacity of the rules for allocating rides and the proliferation of evaluation metrics (geolocation data, ratings, etc.) create a situation of anxiety that pushes them to constantly try and "do more" to earn a decent income: respond more quickly to notifications, deliver faster, stay connected longer, be connected at times when there are the most requests (evenings, weekends, during bad weather), etc.

Moreover, this organisation creates widespread competition among delivery riders to obtain rides (and if possible the most profitable rides, as well as the least arduous or risky ones). This hinders the formation of work collectives that could help maintain health, for example in terms of social support.

Delivery riders also have to take responsibility for any divergence between the capricious world of the algorithm and the real world in which the delivery takes place (incorrect addresses, poorly packaged food or drink, theft of the bike, etc.). This is because the platforms are not organised in a way that enables the riders to report problems, whether to obtain support or limit the impact of these problems on their ratings (with the ultimate risk being the deactivation of their account by the platform).

These factors of acceleration, intensification, competition, isolation and job insecurity combine with the characteristics of delivery work by bike in an urban environment to increase the risk of accidents (minor, serious or fatal), fatigue, and physical and mental wear and tear.

### **Effects on the health of delivery riders associated with digital platform-based food delivery work**

Based on the analysis conducted for this expert appraisal, it appears that platform-based food delivery work is detrimental in various respects to the health of the workers concerned.



Notwithstanding the lack of systematic data, following an analysis of the scientific literature, the effects on the health of platform delivery riders that emerged most frequently were:

- accident-related trauma;
- musculoskeletal disorders (MSDs);
- effects on mental health.

#### *Accident-related trauma*

The lack of official statistics on occupational accidents or diseases suffered by delivery riders in France is mainly due to their self-employed status. The health of these workers remains their own responsibility, unlike the health monitoring of salaried employees, which is institutionally organised, enabling an assessment through data that are collected systematically. Furthermore, no epidemiological studies involving these populations were identified during the course of this expert appraisal. The studies consulted lacked data on the health of delivery riders, who are reluctant to respond to questionnaires. In spite of these shortcomings, it was established in France that platform-based food delivery riders have a high accident rate, as shown by various sources:

- more than a quarter (26.4%) of delivery riders who took part in a survey in the Paris region<sup>17</sup> had already suffered an accident in the course of their delivery work. It should be noted that self-employed delivery riders were the category most affected, since 46.2% of them stated that they had already suffered an accident in the course of their delivery work;
- several deaths from road accidents have been reported in the press: 17 deaths and 14 serious injuries between 2019 and 2023 in France<sup>18</sup>. These figures are probably underestimated.

Delivery riders on two wheels are faced with a number of risk factors that can exacerbate these accident rates: time pressures, time spent on the road, failure to wear protective equipment or use of inadequate equipment, use of mobile phones while riding, which has an impact on visibility and visual perception of the environment. An accident occurring to a rider on two wheels can lead to a variety of injuries, ranging from skin lesions and/or limb injuries (fractures of the wrist, collarbone, etc.) to facial and/or head trauma, or even death.

#### *Musculoskeletal disorders*

According to the scientific literature on cyclists, intensive bike riding can lead to musculoskeletal disorders. This risk can be increased by poor "human-bike" ergonomics, particularly when combined with intense riding on poor road surfaces that can cause vibrations. The mechanisms described above may be observed in weather conditions that are sometimes extreme (rain, snow, cold, heat). These disorders are also compounded by high levels of stress. They can concern all the joints used when riding a bike for delivery work, whether in the spine (cervical, dorsal and lumbar), shoulders, upper limbs and hands, or knees and feet. The main symptoms are muscle pain and stiffening, numbness or dysaesthesia, particularly in

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<sup>17</sup> Laetitia Dablanç, Anne Aguilera, Camille Krier, Alice Cogne, Julie Chretien, *et al.* Étude 2022 sur les livreurs des plateformes à Paris et en petite couronne. [2022 study of platform delivery riders in Paris and the inner suburbs.] [Research report] French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR). 2022, 118p. (hal-03903595).

<sup>18</sup> Source: *Maison des Livreurs* in Bordeaux, based on an analysis of press articles.

the hands, and tendonitis. These effects, observed in platform workers in China, have been described in various studies. However, such studies have not yet been carried out in France.

#### *Effects on mental health associated with the combination of harmful factors*

Because algorithmic management focuses on the planning and distribution of tasks using artificial intelligence, delivery riders are under constant pressure to develop "self-acceleration" strategies (e.g. taking risks on the road, limiting the amount of time they spend with customers or restaurants, or even within their family unit). This exposes them to the risk of physical, cognitive and emotional exhaustion. These factors foster burnout, depression, anxiety, accidents and sleep disorders – creating a complex set of challenges for their psychological and psychosomatic well-being.

The self-employed status creates a particular dynamic. These workers face a lack of protection and resources. This situation, combined with their piecework remuneration and constant fluctuations in pay (with no room for negotiation), results in more time being spent on rides or looking for rides; this encroaches on their private lives and exhausts their psychological and physical resources, leading to attrition of the social-family sphere.

Working in urban environments, often without suitable places for rest, shelter or amenities, exposes delivery riders to considerable physical and psychological risks, leading to anxiety and fear. This vulnerability, combined with the intense competition between riders, can create a climate of mistrust, competition and social insecurity.

#### *Effects associated with the disruption of circadian rhythms (working hours and working time)*

The working hours of platform delivery riders are often atypical: night work<sup>19</sup>, split shifts, long hours and sometimes all of these at the same time. These hours can have a negative impact on their health. A previous report by ANSES (ANSES, 2016) pointed out the health effects of night work. In the scientific literature, the potential and documented health effects associated with atypical working hours are:

- effects on the quantity and quality of sleep: difficulty falling asleep, frequently waking up in the night, reduced total sleep time, fatigue and daytime drowsiness;
- effects on mental health, such as irritability, depression and anxiety;
- effects on physical health, such as cardiovascular disease and metabolic disorders resulting from altered circadian rhythms and exposure to light at night;
- effects on social, family and emotional life;
- increased risk of accidents and death.

ANSES is currently conducting an in-depth expert appraisal of the health effects of forms of atypical working hours other than night work.

#### *Other bodily effects*

Prolonged use of bikes by delivery riders, resulting in repeated pressure, friction or microtrauma in the perineum and lower pelvis area, may cause local health effects (on skin, subcutaneous tissue, bones, nerves), as well as urological and genital problems. Moreover, working outdoors and in urban environments exposes delivery riders to air, noise and light

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<sup>19</sup> See in particular ANSES's expert appraisal on night work and its consequences for health (in French): <https://www.anses.fr/en/content/anses-confirms-health-risks-associated-night-work>.

pollution, sometimes in extreme weather conditions. This environment can lead to cardiovascular effects (favoured by intense exertion), respiratory effects and possibly auditory effects, particularly in people who are already vulnerable. However, there are currently very few health data available specifically concerning delivery riders on bikes, and on two wheels more generally<sup>20</sup>.

Lastly, the CES on "Physical agents and new technologies" highlights an increasingly widespread practice: renting out food delivery accounts to undocumented migrants. Although often seen as a temporary solution enabling its practitioners to earn an income, it raises health and social issues that go beyond the consequences for individuals: it can lead to these workers taking greater risks given the additional economic constraints (repayment of the cost of renting the account), as well as a culture of informality and the continued concealment of health issues whose aggravation has negative effects on individuals and, more broadly, in terms of public health.

### **3.5. Impact of climate change on the health of delivery riders**

Taking account of ANSES's report on the effects of climate change on worker health (2017)<sup>21</sup>, the CES on "Physical agents and new technologies" draws attention to the conditions under which delivery riders will be working in the future. For example, rising temperatures and more frequent heatwaves will increase the risks of dehydration, sunstroke, etc. Cardiorespiratory capacity will also be adversely affected by increased exposure to both chemical and biological atmospheric pollutants.

These conditions can lead to greater fatigue and reduced work capacity, which in turn increases the risk of accidents and injuries. Moreover, extreme weather events such as storms, heavy rain and floods, which are set to become more intense and more frequent, can make working conditions more dangerous, increasing the risk of falls and traffic accidents. Climate change may also indirectly affect the health of delivery riders through increased demand, because extreme weather events, whether in terms of precipitation or temperature, may encourage consumers to rely more on delivery services – bearing in mind that the platforms' promotional materials emphasise the convenience of home deliveries during bad weather.

### **3.6. Protecting the health of delivery riders by introducing preventive measures**

These working conditions, characterised by algorithmic management, cycling in urban environments and the self-employed status, have significant repercussions on the physical and mental health of platform-based food delivery riders. Moreover, the fact that this work is also carried out by particularly vulnerable populations, such as migrants and undocumented workers, who are "invisible" and lack the protection afforded by healthcare bodies or systematic monitoring, presents a real public health challenge. In order to safeguard the health of these platform workers, a number of preventive measures and actions on health and safety are already feasible, and could be implemented by the platforms and the public authorities.

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<sup>20</sup> A recent expert appraisal by ANSES concluded that road traffic pollution during working hours induced excess health risks in exposed workers (i.e. those working on or near roads) compared with a reference population not occupationally exposed (Expert appraisal report "Exposure of workers to air pollution near road traffic and its consequences for their health", ANSES, 2024).

<sup>21</sup> See in particular ANSES's opinion on the assessment of risks to the health of workers caused by climate change: <https://www.anses.fr/en/content/effects-climate-change-workplace-increased-occupational-risks-and-need-action-be-taken-world>

Neither the insurance cover for digital platform-based delivery work nor the legal framework for this activity are currently suited to the objective of safeguarding the health of delivery riders, for a number of reasons.

Because of the requirement to be self-employed, platform delivery riders do not have to be covered by the OA/OD branch of the social security system, which has a number of consequences:

- on compensation for delivery riders in the event of an accident:
  - no systematic reimbursement of accident-related healthcare costs;
  - no recognition of their health issues as an occupational accident;
- on the implementation of a prevention policy by the platforms:
  - no statistical records of occupational accidents and diseases suffered by riders, meaning that the rates for this population are largely invisible;
  - the costs of these health problems are not passed on to the platforms, which means they have no incentive to take any preventive action;
  - no collective preventive measures to benefit this population can be taken by prevention staff in the health insurance system (CARSAT<sup>22</sup>, CRAMIF<sup>23</sup>, CGSS<sup>24</sup>).

With the creation of ARPE<sup>25</sup>, the legislator has delegated the role of creating rights and obligations for self-employed platform workers and for the platforms themselves to social dialogue players in the sectors. Collective bargaining obligations have been established on various subjects, including "prevention of occupational risks and damage caused to third parties". In addition to the mandatory subjects for negotiation, the agreements may cover all the conditions relating to work, remuneration and exercise of the professional activity. However, the legislator has paved the way for social dialogue that does not fall within a clear legal context, setting neither benchmarks for public order (i.e. rules of mandatory application) nor default rules (applying in the event of disagreement).

Most national and international texts on occupational health and safety are not limited to employees, and can be applied to all workers, especially those who, because of the environment in which they work, find themselves in a similar situation to that of employees. At national level, the legislator has also explicitly extended the general law on occupational health and safety to non-salaried workers through measures that come under either social security law, the Labour Code or even the Transport Code. In these cases, therefore, even if the worker has self-employed status, when the work takes place in circumstances involving a client, a payer or a de facto user-employer (Part VII of the Labour Code), the whole of Part IV of the Labour Code on occupational health and safety must apply.

Although platform delivery riders – who work on a self-employed basis – are in a comparable situation, they do not benefit from any of these rules, even though it has been clearly demonstrated in case law, academic research and numerous reports that they do not have the means to decide or influence the organisation of their work and the resulting conditions. As organisers of the work carried out by the delivery riders, the platforms hold the main levers for establishing a prevention policy, and should therefore implement a work organisation that at least complies with the general principles of prevention (Art. L.4121-2 of the French Labour

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<sup>22</sup> CARSAT: French Occupational Health and Pension Insurance Fund.

<sup>23</sup> CRAMIF: Ile-de-France Regional Health Insurance Fund.

<sup>24</sup> CGSS: General Social Security Fund.

<sup>25</sup> ARPE: French Authority for Labour Relations on Job Platforms.

Code and European Directive 89/391/EEC). The expert appraisal report identifies a number of courses of action that could already be taken to prevent the risks associated with riding two-wheeled vehicles in an urban environment, under severe time constraints and in a context of algorithmic management.

### 3.7. Social issues

Digital platforms offering food deliveries raise a number of social issues that are part of a wider context of transformation of how work is organised. By dismantling the traditional model of salaried employment, this phenomenon is leading to the generalisation of self-employed status under the authority of algorithmic management for many workers. This has far-reaching social consequences, in particular a lack of social protection for these workers and increased job insecurity.

For delivery riders, self-employed status means greater responsibility for managing their work. Not only do they have to accomplish their delivery work, but they also have to carry out numerous ancillary tasks, such as managing administration, covering their insurance needs and any possible training. In salaried employment these are paid for by employers; this transfer to self-employed workers weakens their economic and social situation.

This "platformisation" model also exacerbates competition between delivery riders by exploiting the flexibility of their working hours. Their remuneration, calculated on a per-ride basis, is variable and unpredictable, creating permanent uncertainty for workers as to their income and generating an additional element of insecurity.

Algorithmic management does not take workers' needs and expectations into account, which calls into question the practice of decent work<sup>26</sup> (a balance between working conditions, safety standards, remuneration and well-being).

The social impacts suffered by platform-based food delivery riders can easily be transposed to platform workers in general (in particular through the practice of algorithmic management, piecework, autonomy in training, equipment to be paid for by the worker, social isolation, self-acceleration, etc.).

In addition, when delivery riders authorised to work in France rent out their accounts to undocumented migrants, this raises ethical issues, such as the fact that it may equate to human trafficking (according to the international definition given by the Palermo Protocol (2000)).

### 3.8. Recommendations of the Working Group on "Platform delivery riders" and the Expert Committee on "Physical agents and new technologies"

Considering that the conclusions of the expert appraisal set out above robustly demonstrate that the work organisation put in place by digital platforms (working conditions, in particular the use of bikes, and two-wheeled vehicles more generally, in urban environments, algorithmic management, self-employed status, method of remuneration, etc.) can lead to adverse effects on the physical and mental health of platform workers, the CES on "Physical agents and new

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<sup>26</sup> According to the International Labour Organization, "*decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men*".

technologies" adopts the conclusions and recommendations of the Working Group on "Platform delivery riders". In particular, it highlights the relevance of the following recommendations.

### 3.8.1.Recommendations on regulations and prevention

The WG and the CES recommend that the legislator and public authorities:

- strengthen the occupational health and safety obligations of digital platforms, in view of their involvement in how the work is organised, to ensure that digital job platforms apply the statutory health and safety obligations set out in Part IV of the Labour Code to all workers referred to in Article L.7341-1, regardless of their status (employee or self-employed);
- introduce occupational social security cover: in order to protect the health and safety of platform delivery riders, regardless of their status, the WG and the CES recommend that the legislator make membership of an occupational social security scheme compulsory;
- ensure effective social dialogue: in order to improve occupational health and safety, the WG and the CES recommend creating the conditions for local social dialogue within each platform, in particular by including this requirement in the Labour Code;
- introduce controls on data and their automated processing to ensure that the platforms' practices comply with all the regulations and agreements on data and automated processing;
- limit the use of the argument about fast delivery times in the platforms' promotional materials.

The WG and the CES recommend that the legislator, public authorities and platforms:

- make it mandatory to take account of occupational health and safety issues when calculating the remuneration of platform delivery riders;
- limit and monitor the delivery riders' daily and weekly working hours, across all platforms (if they work for several platforms);
- provide places with amenities for delivery riders, where they can take meals, rest and meet;
- in accordance with the provisions of Part IV of the aforementioned Labour Code on occupational health and safety, ensure that;
  - platforms provide the delivery riders with the equipment they need for personal protection and for carrying out their work in good health and safety conditions;
  - platform delivery riders have an effective right to certified *ad hoc* training, covering at least road safety, occupational health and safety (including first aid) and food safety.

The CES on "Physical agents and new technologies" also recommends raising consumer awareness about the working conditions of delivery riders and the importance of supporting fair practices, by informing them of all the risks associated with delivery work.

### 3.8.2. Recommendations on data production, studies and research

The WG and the CES recommend that:

- data on worker populations produced by platforms and insurance players be made accessible for analysis by bodies responsible for public statistics or social dialogue, and that public health and social protection bodies establish tools for statistical monitoring of the health of platform delivery riders, and platform workers more generally;
- research be encouraged on the mental and physical health of platform delivery riders, and more generally on segments of the population in comparable situations in terms of working environment, employment status and/or algorithmic management;
- work be carried out to assess the impact of consumer awareness campaigns.

## 4. AGENCY CONCLUSIONS AND RECOMMENDATIONS

Digital service platforms have been developing since 2010, calling on a growing number of workers, mainly with self-employed status. Among other things this business model raises health issues, partly due to the specific working conditions associated with the work organisation put in place by the platforms. The questions surrounding this business model are not specific to its deployment in France, since European Directive (EU) 2024/2831 on improving working conditions in platform work was adopted on 11 November 2024. It is therefore about to be transposed into French law.

This context led ANSES to conduct an expert appraisal, at the request of the General Confederation of Labour (CGT), to assess the health risks to digital platform-based food delivery workers.

To carry out this expert appraisal, ANSES deployed a novel approach, applying its various strategic orientations for occupational health risk assessment. This approach began with the identification and analysis of all the economic, regulatory, organisational and environmental factors that contribute – either individually or through their interactions – to determining the working conditions of delivery riders, and therefore their exposure to risk factors. Although it was not possible to clarify the specific contribution of each risk factor, their analysis led to the health issues associated with the work being identified, and enabled a description of all the mechanisms likely to have an adverse effect on the short- and long-term physical and mental health of platform delivery riders.

The expert appraisal was confronted with a clear lack of data for understanding the state of health of this worker population in qualitative and quantitative terms: absence of epidemiological data, inadequacy of data on exposure or on accident/illness reporting. This is due to the status of delivery riders, as well as the lack of cooperation from platforms in collecting and/or sharing such data. For this reason, the expert appraisal drew on scientific publications relating to populations with similar activities to those of delivery riders, and on analyses of the risk factors in other activities that are also faced by platform delivery riders. This made it possible to document the link between exposure to these risk factors and their effects on health.

The French Agency for Food, Environmental and Occupational Health & Safety endorses the conclusions and recommendations of the CES on "Physical agents and new technologies"



presented above. The recommendations of the Working Group and the CES are set out in Table 1 in the annex. ANSES wishes to highlight the following points in particular.

On the basis of the information analysed, ANSES can conclude that cycling and working outdoors in an urban environment, according to the business model and work organisation methods imposed by the platforms (self-employed status, method and level of remuneration), can clearly have adverse effects on physical and mental health. Because of the possibility of real-time adaptation, individual targeting of requests and the opacity of automated decisions (regarding allocation of rides, performance assessment, fare setting), algorithmic management increases the imbalances relating to information and the ability to act found in many service markets. In the cases studied in the expert appraisal report, algorithmic management was associated with business models largely based on financial investment in low-profitability situations. Investors' expectations of growth in a low value-added business model are mainly passed on to the operational part of the value chain, i.e. the service production activity (in this case the delivery). Algorithmic management therefore makes a definite contribution to the mechanisms by which physical and mental health effects occur.

The health effects associated with digital platform-based food delivery can be classified according to three time scales:

- short-term: observations of trauma from road accidents or falls during delivery, musculoskeletal disorders due to poor "human-bike" ergonomics;
- medium-term: consequences for mental health (stress, fatigue, exhaustion) related to the constant pressure of notifications, isolation and the absence of stable work relationships;
- long-term: atypical working hours and the environmental conditions associated with the work (urban pollution, noise, etc.) may also lead to sleep disturbance and metabolic, respiratory or cardiovascular diseases.

ANSES draws attention to the working conditions created by these platforms. Because of the low and unstable incomes of the workers, who also lack the protection afforded by a real risk prevention policy and satisfactory social security cover, and moreover are often socially isolated, these working conditions compound their job insecurity.

In view of all the health effects analysed here that are likely to affect platform-based food delivery riders, ANSES recommends:

- making it mandatory to apply the health and safety provisions of the French Labour Code to digital platform-based food delivery riders, as referred to in Article L.7341-1, guaranteeing them health and safety protection equivalent to that which employees have or would have. The Agency points out that such provisions already exist for other sectors, in which clients (principals) have been given specific occupational health and safety obligations when subcontractors are involved;
- when European Directive (EU) 2024/2831 on platform workers is transposed into French law, ensuring that the health effects identified and the health and safety recommendations made in ANSES's expert appraisal are taken into account. Actions need to be taken in this area, particularly regarding the consequences of algorithmic management and the improvement of social protection (see Table 1 in the annex);
- making it mandatory to report statistical data on the health of platform delivery riders, in order to continue documenting the health effects of this work organisation, while

ensuring the protection of personal data in accordance with the requirements of Article 7 of Directive (EU) 2024/2831<sup>27</sup>.

In addition to the delivery work considered in this expert appraisal, ANSES points out that the conclusions it has drawn regarding the health effects of algorithmic management should also be considered for work via other platforms. In this respect, the European Commission reported in 2021 that there were more than 500 digital labour platforms operating in Europe, and that the sector employed more than 28 million people – a figure that could rise to 43 million by 2025. Whenever this type of management is implemented, a specific risk assessment should be systematically carried out by the company deploying it.

More generally, this expert appraisal work raises the question of the use of artificial intelligence in the world of work and the analysis of its potential consequences for worker health.

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<sup>27</sup> Article 7 of Directive (EU) 2024/2831 on "Limitations on the processing of personal data by means of automated monitoring systems or automated decision-making systems".

## Annex

Table 1: Summary of recommendations

1. Recommendations on regulations	
Strengthen the statutory obligations of platforms	<ul style="list-style-type: none"> <li>• Strengthen the occupational health and safety obligations of digital platforms, in view of their involvement in the organisation of work; Apply the statutory health and safety obligations set out in Part IV of the Labour Code to all workers referred to in Article L.7341-1, regardless of their status (employee or self-employed)</li> </ul>
Ensure occupational social security cover	<ul style="list-style-type: none"> <li>• Make membership of an occupational social security scheme compulsory</li> </ul>
Ensure social dialogue	<ul style="list-style-type: none"> <li>• Ensure effective social dialogue; Create the conditions for local social dialogue within each platform</li> </ul>
Control data	<ul style="list-style-type: none"> <li>• Introduce controls on data and their automated processing to ensure that the platforms' practices comply with all the regulations and agreements on data and automated processing</li> </ul>
Delivery times	<ul style="list-style-type: none"> <li>• Limit the use of the argument about fast delivery times in the platforms' promotional materials</li> </ul>
2. Recommendations on prevention	
Delivery rider remuneration	<ul style="list-style-type: none"> <li>• Make it mandatory to take account of occupational health and safety issues when calculating the remuneration of platform delivery riders</li> </ul>
Amenities	<ul style="list-style-type: none"> <li>• Provide places with amenities for delivery riders, where they can take meals, rest and meet</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• Ensure that platforms provide the equipment needed for personal protection and for carrying out the work in good health and safety conditions</li> </ul>
Right to training	<ul style="list-style-type: none"> <li>• Provide an effective right to certified ad hoc training, covering at least road safety, occupational health and safety (including first aid) and food safety</li> </ul>
Raise consumer awareness	<ul style="list-style-type: none"> <li>• Raise consumer awareness about the working conditions of delivery riders and the importance of supporting fair practices, by informing them of all the risks associated with delivery work</li> </ul>
3. Recommendations on data production, studies and research	
Data processing and statistical monitoring	<ul style="list-style-type: none"> <li>• Make data on worker populations produced by platforms and insurance players accessible for analysis by bodies responsible for public statistics or social dialogue</li> <li>• Ensure that public health and social protection bodies establish tools for statistical monitoring of the health of platform delivery riders, and platform workers more generally</li> </ul>
Mental and physical health	<ul style="list-style-type: none"> <li>• Encourage research on the mental and physical health of platform delivery riders, and more generally on segments of the population in comparable situations in terms of working environment, employment status and/or algorithmic management</li> </ul>
Raise consumer awareness	<ul style="list-style-type: none"> <li>• Carry out work to assess the impact of consumer awareness campaigns</li> </ul>

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### **Key words**

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*Digital labour platforms, Platform workers, Food delivery, Work organisation, Algorithmic management, Trauma, Musculoskeletal disorders (MSDs), Mental health.*