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Why Chimney Sweeps Skip Safety: Barriers to Personal Protective Equipment Use

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Chimney sweeping is a high-risk occupation involving exposure to hazardous conditions such as working at heights, inhalation of soot particles, and musculoskeletal strain. Despite these risks, personal protective equipment (PPE) is often inadequately used, misused, or omitted. This study explored factors influencing PPE use among Swedish chimney sweeps, focusing on organizational structures, cultural norms, and practical constraints such as anthropometric measures and gender. Data were collected through a web-based survey (n=48) and semi-structured interviews (n=9) with professional sweeps and industry experts. Time pressure emerged as a key barrier, with PPE often deprioritized during tightly scheduled workdays. Employer attitudes and company ownership structures influenced safety practices; municipal companies generally offered better conditions and higher quality equipment than profit-driven firms. Comfort, fit, and compatibility between different types of equipment were critical determinants of use. PPE that was uncomfortable or impractical was frequently avoided. Protective gear, such as fall protection harnesses and respirators posed additional risks, especially when working alone. A normalization of risk and prevailing macho culture contributed to the perception of PPE as unnecessary or shameful, particularly among older workers. Younger sweeps were more likely to use PPE, partly due to formal training and different attitudes toward work-life balance. Female sweeps reported difficulties obtaining properly fitted equipment, affecting both safety and inclusion. The study concluded that PPE use is shaped by broader working conditions and occupational culture. To improve safety, manufacturers should design PPE that functions effectively in real work contexts and in combination with other gear. Employers should allocate time for fitting, donning, and maintaining PPE, and actively shape expectations around its use. These recommendations offer practical strategies to support correct usage and promote a safer, more inclusive work environment in the chimney sweeping industry.

Keywords: personal protective equipment, PPE, chimney sweeps, organizational factors, risk normalization, safety culture, anthropometrics, fall protection, occupational safety

1. Introduction

Chimney sweeps routinely encounter intertwined hazards: unstable or fragile roof surfaces, ladder transitions, confined attic spaces, heavy manual handling of equipment, and airborne particulate exposure from soot and related combustion residues. Epidemiology among Swedish chimney sweeps has documented elevated risks for cancer and respiratory morbidity, underscoring the long-term consequences of repeated low-level exposures (Alhamdow et al., 2017). Day-to-day accident risks also remain non-trivial because access and egress are frequently improvised at client sites and certified anchor points are often missing on residential roofs (OSHA, 2023). Although the hierarchy of controls emphasizes elimination, substitution and engineering measures before administrative approaches and personal protective equipment (PPE), building-stock constraints and the service nature of chimney sweeping often preclude higher-order controls at the worksite. In practice, PPE and administrative provisions become an essential but imperfect last line of defense. Their effectiveness depends on usability, compatibility with other equipment, and the time and facilities available to use them correctly (OSHA, 2023; NIOSH, 2024). Chimney sweeps frequently describe usability barriers, such as heat burden and breathing resistance with tight-fitting respirators; fogging and visual

occlusion when respirators interact with goggles; pressure points and limited dexterity from poorly fitting gloves; and degraded mobility or balance when multiple items are worn together (Alhamdow et al., 2017). Such barriers are well documented to reduce compliance in other sectors, when throughput incentives or social norms favor speed over caution (Lombardi et al., 2009). According to safety climate research, employees' protective behaviors are directly influenced by the extent to which they perceive management to prioritize safety; when supervisors are seen as valuing productivity above protection, adherence to procedures declines (Zohar, 1980). The Job Demands-Resources (JD-R) model shows how high demands and insufficient resources contribute to strain and undermine safe performance, whereas adequate resources support motivation (Bakker & Demerouti, 2007). A sociotechnical perspective adds that safety outcomes depend on the alignment of tasks, tools, environments, organizational structures and human actors, and that misalignment increases the likelihood that PPE will be bypassed (Carayon et al., 2006). Building on these organizational and system-level explanations, a complementary cognitive perspective is needed to clarify how workers make rapid, situation-specific PPE decisions in the field. Fang et al. (2016) address this by modelling how individuals obtain and interpret hazard information, form intentions under social and temporal pressure, and occasionally omit protective steps during complex transitions such as moving between ladders and roofs. Together, these perspectives indicate that PPE use among chimney sweeps is shaped by a multilayered interplay of system design, organizational priorities, job demands and real-time cognitive processes. However, empirical knowledge specific to chimney sweeping remains limited, particularly regarding how these factors interact in everyday practice. Therefore, the aim of this study was to identify and explain barriers to PPE use among Swedish chimney sweeps and to propose organizational, technical and cultural measures that improve feasibility, motivation and safety performance.

2. Method

Data were collected from a web-based survey and semi-structured interviews to capture the prevalence of PPE use among Swedish chimney sweeps and the contextual mechanisms shaping these patterns.

The web-based survey documented the participants' demographic characteristics, job tenure, and employment arrangements. It consisted of 18 questions and was distributed during the spring 2022 through the newsletter of the Swedish Chimney Sweeps' Association and by national Facebook group for chimney sweeps. Participation was fully anonymous, and no identifying information were collected. A total of 46 individuals filled out the survey, ranged in age 18-64 years. Average job tenure in the profession was 15 years. The survey included closed-ended items with optional free-text fields, providing both quantitative and qualitative data. It mapped the availability and frequency of use for different types of PPE, including respirators, gloves, hearing protection, protective clothing, safety footwear, and fall-arrest harnesses. It also examined perceived barriers to PPE use, such as issues of comfort and fit, heat, breathability of materials, equipment weight, interference between different items, the time required to don and doff equipment, and perceptions of risk and necessity. Additional questions addressed hygiene practices, the number of garments sets available, access to laundry facilities, and the organisation of clean and dirty zones. Organisational factors were also included, such as the scheduling of daily routes, the discretion to decline unsafe tasks, and levels of involvement in procurement processes. Additionally, the survey concluded with a few open-ended questions that invited to describe improvements regarded as necessary. The closed-ended responses were analysed descriptively, and the answers on the free-text fields and open-ended questions were thematically categorised. The qualitative responses subsequently informed the development of the barrier categories.

The semi-structured interviews comprised nine conversations: seven with practising chimney sweeps employed in municipal or private companies, and two with sector experts. The expert interviews provided insight into regulatory frameworks, organisational structures, and broader challenges affecting safety practices in the profession. All respondents were recruited

through organisational newsletters, and snowball sampling. The interviews were conducted by the same interviewer either in person, by telephone, or digitally, depending on preference and availability. The interviews lasted 1-2 hours, depending on how much the respondents chose to elaborate in greater depth. The interviews were audio-recorded and notes were also taken. A semi-structured interview guide ensured that core themes were consistently addressed while allowing respondents substantial freedom to raise issues they considered important. The respondents described their own experiences, but also observations from colleagues at other worksites, contributing to a broad and detailed picture of conditions across the sector. Key topics included work organisation and time pressure, employer expectations and interactions with clients, and issues concerning the comfort, fit, and compatibility of PPE. The feasibility of implementing fall-protection measures was also examined. Further discussions addressed hygiene practices, laundering routines, policies for maintaining clean zones, the implementation of respirator programmes, prevailing safety culture and peer norms, issues of inclusion and fit for women, and the respondents' suggestions for improving safety and working conditions. The qualitative material was analysed thematically, with particular attention to cross-case convergence and the identification of negative cases. The survey results were also used to assess the relative salience of the identified barriers.

3. Results

The empirical findings from the survey and the interviews were organised into thematic subsections that illustrate how organisational, technical, cognitive and cultural conditions shape chimney sweeps' opportunities and willingness to use PPE, ultimately influencing the feasibility and consistency of protective practices. Also, barriers as they manifest in everyday work practice are highlighted.

3.1. *Time pressure and scheduling*

Time pressure consistently emerged as a dominant barrier to PPE use and a safe work organisation. Across interviews, the respondents described daily routes that were scheduled so tightly that even minimal protective routines, such as donning gloves properly, fastening a respirator, or adjusting fall protection, were perceived as incompatible with meeting the required number of completed jobs per day. Several respondents noted that if all safety measures were followed '*by the book*', only half of the scheduled tasks could realistically be completed. This structural mismatch between regulatory requirements and production demands encouraged routine omission of PPE, particularly during roof transitions where both time and physical effort were at a premium. Stress was not only a temporal but also a physiological and cognitive burden. Some respondents described recurrent heart palpitations, rushing, and a constant sense of being behind. Under such conditions, decision-making degraded, resulting in running up ladders rather than climbing safely, removing gloves to '*speed up*' handling, and overlooking hazards normally assessed. Poor planning and over-booking created a '*cascade of shortcuts*' where PPE became one of the first things sacrificed. Municipal employers who reduced the number of daily assignments were frequently cited as examples of how realistic scheduling directly enables safer behaviour.

3.2. *Employer attitudes & organisational form*

Employer stance, both formal policies and everyday signals, proved to be one of the strongest determinants of PPE practice. The respondents described dramatic contrasts between municipal companies and profit-driven firms. Municipal employers were depicted as emphasising legal compliance, safe pacing and adequate recovery time, and supported workers' right to decline unsafe roof access. In such environments, safety discussions were integrated into regular staff meetings, and employees were invited to test and select equipment that fit their individual needs. In contrast, sweeps employed in commercial firms described strict productivity targets, implicit or explicit criticism of slow work, and inconsistent or poor-quality PPE procurement. Some respondents had experiences of receiving equipment '*like a lottery*' where only size was considered, not suitability for the task. A recurrent theme was that profit-oriented companies treated PPE as an expense rather than an investment, leading to delayed replacement of worn-out gloves, inadequate footwear, and minimal attention to comfort or fit. Employer attitudes also shaped the psychosocial climate.

Reports of macho norms, harassment, and dismissive reactions to injury or fatigue were more common in workplaces where management did not actively counter such cultures. Some respondents described feeling pressured to work while sick, take painkillers rather than rest, and downplay injuries. Conversely, supportive employers were associated with early reporting of strain injuries, temporary adjustments of duties, and fewer long-term health problems.

3.3. *Comfort, fit & equipment compatibility*

Comfort and fit were central determinants of PPE acceptability. More than half of the survey respondents indicated that discomfort was a key reason for non-use. The interviews revealed multiple problem sources, such as respirators perceived as hot and difficult to breathe through, goggles that fogged when combined with half-masks, gloves that were too large for many women (reducing grip strength and increasing fall risk), and clothing with seams that chafed or allowed soot ingress after repeated washing. High-quality, well-fitting PPE significantly changed behaviour. The respondents who had access to modern integrated full-face respirators, tailored hearing protection, or newer harness models reported fewer problems. In some cases, the respondents purchased their own specialised equipment, such as custom moulded ear defenders, after finding employer-provided gear inadequate. These individual purchases underline the gap between certification standards and real-world usability. Compatibility problems between different PPE items also discouraged consistent use. Helmet–earmuff–goggle combinations caused pressure points; hearing protection interfered with respirators hanging around the neck; and there were no storage solutions for glasses during climbing. Such ergonomic conflicts often made PPE feel like an obstacle rather than a support.

3.4. *Fall-protection harness & suspension risk*

While regulatory guidance emphasises fall-protection harnesses for work at height, the actual use was extremely limited. The results showed that most of the respondents *'rarely or never*' used a harness. The interviews clarified that most residential roofs lack certified anchor points, and attaching a harness to a loose ladder or roof ladder is not considered protective. The most dangerous phase, the transition from ladder to roof, is precisely the moment when no meaningful anchorage exists. Solo work further compounds the problem. In the event of a fall, a sweep suspended in a harness would risk rapid onset of suspension trauma, with no colleague available for rescue. Many respondents therefore judged the harness to introduce new risks, such as entanglement, reduced mobility and snag hazards, without providing viable fall protection. Older fall-arrest systems were described as bulky, difficult to don, and often left unused in storage rooms. In the absence of structural anchors on customers' buildings, the respondents perceived harnesses as symbolic measures with limited real protective value.

3.5. *Hygiene and secondary contamination*

The risk from soot was not limited to breathing it in; soot also posed a hazard through skin contact, contamination of clothing and equipment, and the spread of particles into vehicles, break rooms and homes. The respondents repeatedly described how soot accumulated on clothing, skin and hair, was transported into vehicles, break rooms and homes, and remained embedded in pores even after washing. Many had access to only two or three sets of work clothes per week, with laundry cycles typically limited to once weekly. Because soot is carcinogenic and readily transferred by contact, these constraints created extended periods of dermal exposure. The respondents revealed strong demand for increased hygiene infrastructure: more garment sets, daily laundry possibilities, showers at the end of shifts, and implementation of '*clean zones*' where contaminated clothing is removed before entering communal areas. Some workplaces had adopted such zones, modelled after fire-service protocols, and workers described them as markedly reducing cross-contamination. Use of thin nitrile under-gloves was another worker-driven innovation to reduce skin exposure during fine-motor tasks where heavy gloves are removed.

3.6. *Cultural norms and risk acceptance*

Cultural expectations deeply shaped the PPE behaviour. The profession carries longstanding images of dirt, toughness and individual responsibility. Some respondents said that '*if you*

haven't fallen, you're not a real sweep', which functioned as informal socialisation mechanisms. Nearly all respondents reported that they had experienced multiple injuries during their career. As examples minor cuts, soot in the eyes, sprains from rushing, and in some cases serious falls or near misses. Such incidents were often normalised as '*part of the job*', reinforcing a high tolerance for risk. Generational differences were pronounced. Older respondents, whose formative years in the trade predated modern PPE and safety culture, tended to view equipment as unnecessary, cumbersome or even a sign of weakness. Many had existing respiratory limitations that made older respirator models difficult to use, further entrenching avoidance. The younger respondents entered the workforce with safety training, different expectations of employer responsibilities, and a clearer boundary between work and personal life. They were more likely to view PPE as an integral part of professional practice rather than an extra option. Social dynamics could also work against protective behaviours. Some respondents described situations where refusing unsafe roof access led to ridicule, being labelled *difficult*', or concerns about customer complaints. This dynamic placed the sweeps in a double bind: uphold safety standards or maintain social and economic standing in the workplace. Where employers actively countered such norms and backed workers who declined unsafe tasks, PPE use and safe decision making improved markedly.

4. Discussion

The aim of the study was to identify and explain barriers to PPE use among chimney sweeps and to propose integrated measures that strengthen feasibility, motivation and safety performance. The overall results showed that PPE was profoundly constrained by structural conditions, such as tight scheduling, limited access to high quality and well-fitting equipment, poorly adapted buildings lacking anchor points, insufficient hygiene facilities, and workplace cultures that normalized risk taking. These constraints interacted with cognitive and social mechanisms, shaping the respondents' moment to moment decisions about protection in ways that cannot be reduced to individual motivation or awareness. In the discussion, the empirical findings are synthesised with established safety science frameworks to interpret how organisational demands, available resources, cognitive decision processes and cultural norms jointly shape PPE behaviour, and what this implies for system-level improvements in chimney-sweeping practice.

4.1. *Systemic constraints*

The results highlight that the respondents' non-use or mis-use of PPE stemmed from systemic constraints rather than personal shortcomings. Tight work schedules, PPE procurement based on price instead of comfort or fit, the absence of fall-protection anchors on residential roofs, and insufficient hygiene infrastructure created latent conditions that undermined protective routines. Many respondents explicitly stated that '*following all safety rules would make it impossible to complete scheduled work*,' illustrating a structural misalignment between regulatory expectations and operational design. From an organisational-accident perspective (Reason, 1997), these deficiencies function as 'holes in the Swiss cheese' long before any incident occurs. Effective improvement therefore requires redesigning work processes, such as route planning, building access, procurement systems, and hygiene arrangements, rather than placing the burden primarily on individual behavioural change.

4.2. *Demands, resources and motivation*

The findings map closely onto the JD-R model (Bakker & Demerouti, 2007). High demands faced by the respondents, such as intense routing, climbing transitions without anchors, solo work, and emotional pressure from impatient clients, combined with low resources, such as inadequate PPE fit, discomfort, limited laundry facilities, and inconsistent managerial support. This combination triggered a health-impairment process: many respondents described stress symptoms, rushing, reduced attention, and shortcutting practices such as removing gloves, climbing unsafely, or omitting respirators. In contrast, workplaces with realistic scheduling, participatory procurement, strengthened psychosocial support and adequate infrastructure created a motivational process in which PPE use felt feasible rather than

obstructive. The results clearly show that improving resources is essential for sustainable safety behaviour.

4.3. *Sociotechnical design*

The respondents' difficulties with PPE use demonstrate that protective behaviour is embedded in a sociotechnical system in which task design, equipment, organisational priorities and environmental constraints interact. For example, respondents highlighted that respirators fogged goggles, hearing protectors clashed with masks, and gloves were oversized, reducing grip strength particularly for women. These interactions underscore the need for joint optimisation rather than isolated intervention. The findings also reveal a misalignment with the hierarchy of controls (OSHA, 2023). Reliance on harnesses without viable anchors contradicts the principle of prioritising elimination and engineering controls. Structural fall-protection measures, such as client-side anchors, safer roof ladders, guardrails, would reduce reliance on discretionary PPE decisions and move risk management upstream.

4.4. *Cognitive mechanisms*

Cognitive models show how workers obtain and interpret hazard information, form intentions under social influence and act under time pressure. The respondents' stories illustrate how these processes shape everyday PPE decisions in their work. Decisive micro-moments recur in practice, such as visibility collapses when goggles fog, a harness snags at a ladder transition, a client is waiting and the schedule is tight, or gloves reduce dexterity when rushing. The respondents also described skipping respirators because of heat load or breathing resistance, avoiding harnesses because they slowed transitions or caught on equipment. In these situations, perceived feasibility and social expectations interact with comfort and fit to tilt decisions away from protection. This demonstrate that PPE choices are not simply a matter of attitude, but reflect dynamic utility assessments, such as whether protection is affordable in terms of time, physical demand and social acceptance. Interventions that reduce this decision load, such as simplifying donning sequences, improving compatibility between PPE items, embedding cues at points of use and making safe options faster, are therefore pivotal for shifting routine behaviour (Fang et al., 2016).

4.5. *Respiratory hazards*

Soot's carcinogenicity is well established, and exposure measurements among Swedish chimney sweeps show substantial within- and between-worker variation by task and technique, implying that planning and equipment choices can materially reduce dose (Klang et al., 2024). This underscores the need for employer programmes that ensure appropriate respirator selection, annual fit testing, maintenance routines, and alternatives such as powered air-purifying respirators (PAPRs) where tight seals are impracticable or where breathing resistance undermines use (NIOSH, 2024). The respondents' experiences of discomfort, breathing difficulty and persistent soot contamination further reinforce the importance of evidence-based respiratory protection. Many respondents, particularly the older ones, reported that respirators hindered breathing during roof work, making consistent use impractical, while others compensated by purchasing their own higher-quality equipment, highlighting gaps in employer provisioning and demonstrating that certification alone does not guarantee usability in practice. Given soot's carcinogenicity and the substantial variation in exposure linked to task type (Klang et al., 2024), respiratory protection programmes should include tailored respirator selection, annual fit testing, structured maintenance routines, and alternatives such as PAPRs where tight-seal respirators are infeasible. Implementing such measures would directly address the tension between health protection and physical effort reported and would support a more effective alignment between regulatory expectations and real-world work conditions.

4.6. *Fall protection feasibility*

The feasibility of fall protection was severely limited in the environments described by the respondents. When anchors are absent and solo work is common, the efficacy of harnesses is constrained and introduces suspension risks; robust rescue planning (including trauma-relief straps), collective protections and alternative access arrangements are therefore required. Policy or client-side requirements for safe access

infrastructure would shift responsibility upstream and reduce reliance on discretionary PPE decisions (Hsiao, 2014; OSHA, 2023). The respondents overwhelmingly judged harness uses infeasible because residential roofs lacked certified anchor points, and many added that the most dangerous phase, the ladder-roof transition, cannot be protected with current setups. Solo work created additional risks, as the respondents feared suspension trauma if a fall occurred without immediate rescue, noting that a suspended worker could be left hanging for an extended period with no colleague present to intervene. These findings expose a foundational mismatch between regulatory expectations and the realities of chimney-sweeping environments, where the physical infrastructure does not support the safe use of fall-arrest systems. System-level solutions are therefore required, including client-side or regulatory requirements for safe access infrastructure, the implementation of collective protective measures, and robust rescue planning incorporating trauma-relief straps (Hsiao, 2014). Without such upstream controls, fall-arrest PPE will remain largely symbolic rather than an effective protective measure.

4.7. *Culture and inclusion*

The respondents' narratives show that cultural norms exert a strong influence on PPE behaviour. Sayings such as *'If you haven't fallen, you're not a real sweep'* reflect a historical identity built on toughness, endurance and individual responsibility. Many respondents reported normalising minor injuries, soot in the eyes, and even near misses. Generational differences were pronounced: older respondents described PPE as unnecessary or 'for the weak', while younger respondents framed protection as a natural element of modern professionalism and personal well-being. Experiences of harassment, ridicule for refusing unsafe work, or being labelled 'difficult' illustrate how social pressures can outweigh formal safety rules. Inclusive PPE provisioning women's sizes, better glove fit, more ergonomic options would support both physical safety and a more inclusive occupational identity (Zohar, 1980). Strong leadership signalling and peer support are also crucial for shifting entrenched norms.

4.8. *Procurement and contracting*

The respondents' experiences show that procurement practices directly shape PPE use. When employers provided low-quality or incompatible equipment, non-use became rational. Conversely, in workplaces where the respondents were invited to test equipment, evaluate comfort and feasibility, and influence procurement, PPE became usable and was used. Contracting structures also matter. Municipal companies that emphasised safety and legal compliance offered better equipment, realistic schedules and improved hygiene facilities. In profit-driven firms, respondents described PPE as a cost, not a protective investment. Including PPE quality, hygiene facilities and safe access infrastructure as formal award criteria in procurement and contracting could shift incentives across the sector.

4.9. *Hygiene and secondary exposure*

The respondents repeatedly described extended dermal exposure to soot due to insufficient garment sets, infrequent laundry and the inability to shower or change during the day. The spread of soot into vehicles, offices and homes introduced additional pathways of exposure and psychological discomfort. Daily access to clean garments, shower facilities, 'clean zones', and vehicle segregation systems would significantly reduce secondary exposure. The respondents who had experienced such systems emphasised their effectiveness and the positive safety-climate signals they provided.

4.10. *Limitations and Future Work*

The survey sample (n = 46) is modest and may not capture the full heterogeneity of company forms, regional variations or divergent organisational cultures across the chimney-sweeping sector. Although the interview respondents (n=9) represented a broad range of experiences, the qualitative sample may still over-represent narratives or working conditions. Future research should therefore expand sampling and apply multilevel analytical approaches capable of disentangling individual, worksite and organisational effects on PPE use, exposure patterns and safety behaviour. Also, economic and contractual mechanisms merit closer examination. The findings suggest that procurement requirements, tender criteria and

bonus structures may substantially influence safety climate and PPE uptake in profit-driven contexts. Experimental studies that vary incentive structures could quantify how specific economic levers shape organisational priorities and frontline behaviour. Such work would be crucial for designing policy instruments that align economic incentives with safety performance across the sector.

5. Conclusion

The aim of this study was to identify and explain barriers to PPE use among chimney sweeps and to propose integrated measures that improve feasibility, motivation and safety performance. The findings showed that the respondents' omissions stem primarily from structural and cultural constraints rather than from individual attitudes. Time pressure and unrealistic scheduling made it difficult to allocate even minimal time for donning, adjusting or maintaining protective equipment. At the same time, comfort, fit and compatibility limitations, particularly affecting respirators, gloves and combined equipment setups, reduced the practicality of PPE in everyday tasks. The study also demonstrated that fall-protection challenges arise from infrastructural deficits: without certified anchors or collective protections on residential roofs, harness use was perceived as ineffective or even hazardous. Similarly, respiratory protection was undermined by breathing resistance, heat load and inconsistent fit, despite the well-established carcinogenic risks of soot. Hygiene constraints further amplified exposure, as limited garment sets, infrequent laundry and the absence of clean-zone protocols resulted in persistent dermal contamination and the spread of soot into vehicles and communal areas. Cultural norms additionally shaped the decisions regarding use of PPE. Longstanding ideals of toughness, peer expectations and fear of criticism for '*slowing down'* influenced whether protective routines were followed. In workplaces where employers actively legitimised safe pacing and supported decisions to decline unsafe tasks, PPE use was more feasible and more consistent. Overall, the results made clear that improving PPE use among chimney sweeps requires coordinated organisational, technical and cultural actions. Realistic scheduling that includes time for PPE routines, participatory procurement with inclusive sizing, engineered access solutions such as anchors and safer roof systems, robust respiratory protection programmes, and strengthened hygiene infrastructure are all essential. Equally important is a safety climate that endorses professional judgement and supports workers who act cautiously. Implementing this integrated approach offers a realistic pathway to higher PPE adoption, reduced exposure and safer everyday practice in chimney sweeping.

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