Preplanned Studies

Mushroom Poisoning Outbreaks — China, 2025

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Summary

What is already known about this topic?

Mushroom poisoning is a major food safety threat in China. Since 2019, systematic investigations by China CDC have mapped the spatial and temporal patterns of poisoning incidents and documented the diversity of poisonous mushroom species nationwide. From 2019 to 2024, the annual number of incidents ranged from 276 to 676, and the case fatality rate ranged from 0.87% to 2.86%.

What is added by this report?

In 2025, China CDC investigated 828 mushroom poisoning incidents across 27 provincial-level administrative divisions (PLADs), affecting 2,165 individuals and causing 13 deaths — a case fatality rate of 0.6%, the lowest of the past six years. In total, 138 poisonous mushroom species were identified, including 34 newly recorded in poisoning incidents in China.

What are the implications for public health practice?

Prompt identification of the mushroom species, detection of toxins, and confirmation of the clinical syndrome are critical for guiding appropriate treatment and implementing effective public health interventions. Continued efforts are needed to strengthen public education and to enforce stricter market regulation of wild mushroom sales.

ABSTRACT

Introduction: Mushroom poisoning is a significant food safety concern in China. Over the past decade, the country has developed an effective system for the prevention and control of mushroom poisoning through the coordinated efforts of government agencies, clinicians, CDC experts, and mycologists.

Methods: Within this established system, we systematically collected information on mushroom poisoning incidents, including identification of the species involved, detection of the associated toxins, and analysis of the spatial and temporal distribution patterns and species diversity.

Results: In 2025, China CDC investigated 828 mushroom poisoning incidents across 27 provincial-level administrative divisions (PLADs), involving 2,165 patients and resulting in 13 deaths — a case fatality rate of 0.6%, the lowest recorded since 2019. Incidents occurred throughout the year but were most frequent between May and November, peaking in September. Geographically, cases were reported in 27 PLADs, the five most affected were Hunan, Guizhou, Yunnan, Sichuan, and Shandong. Deaths occurred in 6 PLADs, led by Guizhou (7 deaths) and Yunnan (2 deaths). Altogether, 138 poisonous mushroom species linked to six distinct clinical syndromes were identified, of which 34 were newly documented in poisoning incidents. The four most lethal species were *Galerina sulciceps*, *Amanita exitialis*, *Russula subnigricans*, and *A. abrupta*, responsible for 3, 3, 2, and 2 deaths, respectively. *Chlorophyllum molybdites* caused the most incidents (269, affecting 540 patients, with one death). Notably, *Paxillus ammoniavirescens*, a species known to cause hemolysis, was identified in a poisoning incident for the first time.

Conclusions: Mushroom poisoning remains a major food safety threat in China. Although summer and autumn are the peak seasons, fatal cases can occur at any time of year, and northern China has shown a marked upward trend. Moreover, a growing number of poisonous mushrooms — including several potentially new species — have been identified in poisoning incidents. This persistent burden calls for sustained public education, robust market supervision, and stronger interdisciplinary collaboration to reduce its incidence.

Mushroom poisoning remains a significant food safety concern in China. Over the past decade, the country has built a robust system for the prevention and control of mushroom poisoning that integrates government agencies, clinicians, China CDC experts,

and mycologists, and the system has continued to draw in additional professionals (*1*–*6*). Within this framework, CDC personnel and hospital staff collect mushroom specimens, photographs, and biological samples — such as blood and urine — immediately after an incident occurs. The specimens and images are then sent to mycologists for species identification (using both morphological and molecular methods), while the mushroom and biological samples are delivered to CDC experts and hospital specialists for toxin analysis (e.g., LC-MS/MS detection of 12 mushroom toxins). Drawing on the species identification, toxicological findings, and clinical symptoms, patients receive accurate diagnoses and timely treatment (*1*–*6*). In 2025, China CDC continued to investigate mushroom poisoning incidents and systematically collected key information — including the time and location of each incident, the number of people poisoned, the death toll, and the species involved, all of which were re-confirmed by local CDC staff or physicians — and analyzed it in depth. That year, China CDC investigated 828 mushroom poisoning incidents across 27 PLADs, affecting 2,165 individuals and resulting in 13 deaths — a case fatality rate of 0.6%. Investigators identified 138 poisonous mushroom species from 1,629 specimens, including 34 newly documented species, associated with 6 distinct clinical syndromes. By the end of 2025, this brought the cumulative number of mushroom species linked to poisoning incidents in China to 280, accounting for over 40% of the country's known poisonous mushrooms (660 species as of the end of 2024).

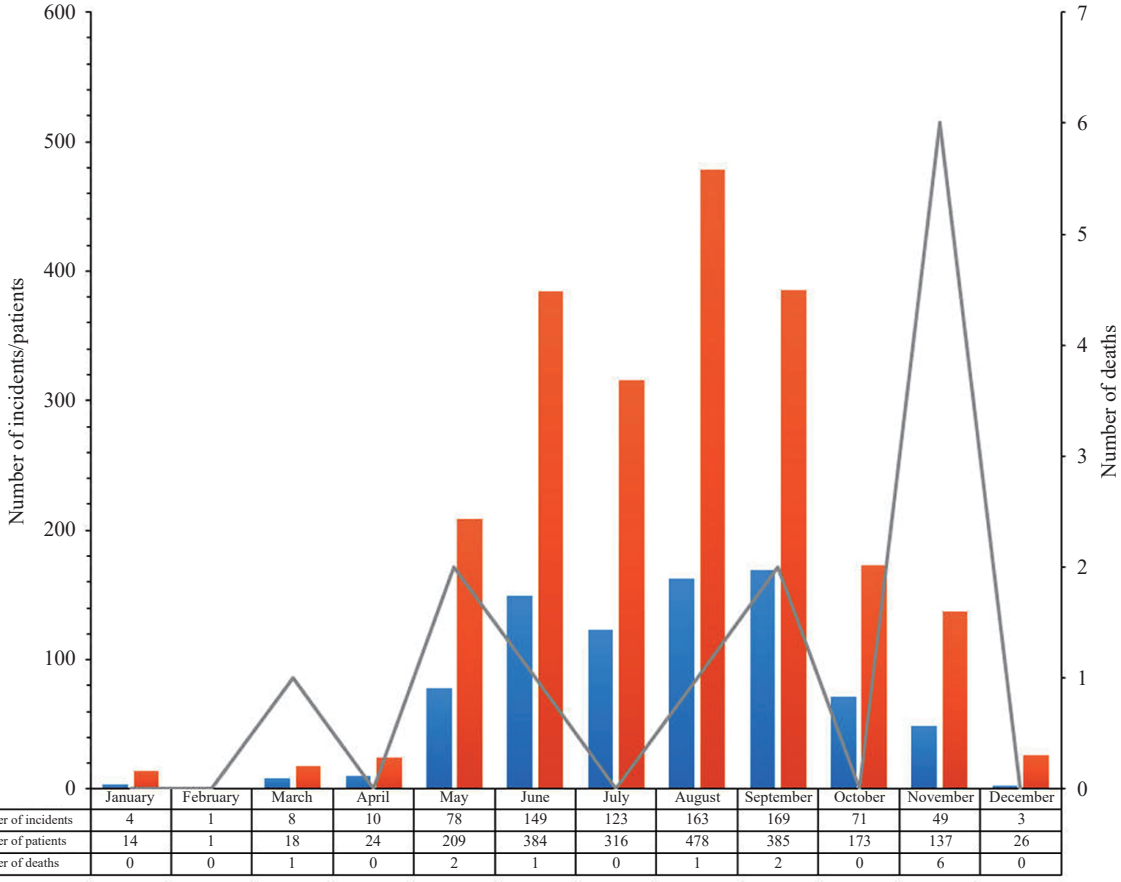
In 2025, the number of cases per incident ranged from 1 to 15, with a median of 2, and 9 incidents involved more than 10 patients. Notably, 69 patients from 20 incidents had eaten poisonous mushrooms purchased from markets: 4 incidents were linked to wild mushrooms bought online, 2 to informal street vendors, 1 to a traditional Chinese medicine shop, and 13 to various wild-mushroom or vegetable markets. A further 38 patients from 13 incidents (8 of which involved purchased wild mushrooms) were poisoned after eating dried mushrooms, and 543 patients from 175 incidents after eating mixed mushrooms. In addition, 12 patients from 8 incidents fell ill after eating uncooked wild mushrooms (Supplementary Table S1, available at https://weekly.chinacdc.cn/).

Temporal analysis showed that incidents occurred throughout the year but were most frequent between May and November (802 incidents, 2,082 patients, and 12 deaths), peaking in September (169 incidents, 385 patients, and 2 deaths). That September, poisonings were reported in 18 PLADs nationwide, with *Chlorophyllum molybdites* alone responsible for 93 incidents — 55% of the month's total. The year's first death occurred on March 8 in Guangdong and was caused by *Amanita exitialis*. Mortality was highest in November (6 deaths), mainly from *Galerina sulciceps* (3 deaths), *A. abrupta* (2 deaths), and *A. subpallidorosea* (1 death), followed by May and September with 2 deaths each (Figures 1–2).

Geographically, incidents were reported across 27 PLADs, 15 of which recorded more than 10 incidents. The five most affected were Hunan, Guizhou, Yunnan, Sichuan, and Shandong (Table 1, Figure 2). Fatalities occurred in 6 PLADs: Guizhou (7 deaths), Yunnan (2 deaths), and Guangxi, Hubei, Anhui, and Guangdong (1 death each) (Table 1). Southwest China (Guizhou, Yunnan, Sichuan, Chongqing, and Xizang) was hit hardest, with 362 incidents, 1,099 patients, and 9 deaths. It was followed by Central China (Hunan, Hubei, Henan, and Jiangxi) with 205 incidents, 388 patients, and 1 death; East China (Anhui, Jiangsu, Zhejiang, and Fujian) with 96 incidents, 226 patients, and 1 death; and Northern China (Shandong, Hebei, Shanxi, Inner Mongolia, Beijing, and Tianjin) with 80 incidents and 198 patients but no deaths. Southern China (Guangxi, Guangdong, and Hainan) reported 66 incidents, 203 patients, and 2 deaths; Northwestern China (Shaanxi, Ningxia, Qinghai, and Gansu) reported 18 incidents and 49 patients with no deaths; and Northeastern China (Liaoning) recorded a single incident involving 2 patients and no fatalities. Detailed statistics for each PLAD are provided in Table 1 and Figure 2.

In 2025, the 138 poisonous mushroom species identified in poisoning cases were associated with 6 distinct clinical syndromes. Of these, 19 species (*Amanita abrupta*, *Paxillus ammoniavirescens*, *Atheniella flavoalba* complex, *Chlorophyllum palaeotropicum*, *Collybiopsis yunnanensis*, *Entoloma* cf. *subsaundersii*, *Gerronema nemorale*, *Gymnopus dryophiloides*, *Lactarius* cf. *alpinihirtipes*, *L. citrinus*, *Lepista* cf. *subisabellina*, *Russula rufobasis* nom. prov., *R. straminella*, *Scleroderma australe*, *S. lunare*, *Gymnopilus igniculus*, *Inocybe involuta*, *I.* cf. *insinuata*, and *I.* cf. *soluta*) were newly documented as poisonous mushrooms in China (*1*–*7*) (Supplementary Table S1).

The four most lethal mushrooms were *Galerina sulciceps*, *Amanita exitialis*, *Russula subnigricans*, and *A. abrupta*, causing 3, 3, 2, and 2 deaths, respectively



	January	February	March	April	May	June	July	August	September	October	November	December
Number of incidents	4	1	8	10	78	149	123	163	169	71	49	3
Number of patients	14	1	18	24	209	384	316	478	385	173	137	26
Number of deaths	0	0	1	0	2	1	0	1	2	0	6	0

FIGURE 1. Monthly distribution of mushroom poisonings in China, 2025.

(Supplementary Table S1). *Chlorophyllum molybdites* caused the most poisoning incidents (269 incidents affecting 540 patients, with 1 death), either alone or together with other species. It also showed the widest geographical range (16 PLADs) and the longest period of activity (from late April to mid-November). Its high incidence can be attributed to its resemblance in appearance and taste to certain edible mushrooms and to its growth in areas close to people — vegetable fields, roadside grasslands, and parks — which makes it easy to forage and eat.

In 2025, 10 amatoxin-producing species from the genera *Amanita*, *Galerina*, and *Lepiota* were identified as causes of acute liver failure in China (Supplementary Table S1). The most lethal were *Amanita exitialis* and *Galerina sulciceps*, each responsible for three deaths, while *Amanita fuligineoides* and *A. subpallidorosea* each caused one. The three species involved in the most incidents were *Lepiota brunneoincarnata* (24 incidents, 56 patients), *Galerina sulciceps* (16 incidents, 44 patients, 3 deaths), and *Amanita subjunquillea* (10 incidents, 33 patients).

Seven species — *Amanita abrupta*, *A. gymnopus*, *A. kotohiraensis*, *A. neoovoidea*, *A. oberwinkleriana*, *A. pseudoporphyria*, and *A. virginioides* — were identified as causes of acute kidney injury in 2025 (Supplementary Table S1). *A. oberwinkleriana* was the most common, appearing in 6 incidents involving 13 patients, either alone or with other species. *Amanita abrupta* caused 2 deaths in Guizhou on November 1.

Russula subnigricans caused 12 incidents of rhabdomyolysis, affecting 35 patients and resulting in 2 deaths, either alone or together with other mushrooms. *Paxillus ammoniavirescens* caused hemolysis in 1 patient in Inner Mongolia on October 7 (Supplementary Table S1). Both rhabdomyolysis and hemolysis have an incubation period of less than 6 hours, after which gastrointestinal symptoms appear — signs that are easily mistaken for gastroenteritis-type mushroom poisoning.

In 2025, 78 mushroom species were identified as causes of gastroenteritis in China (Supplementary Table S1), of which 22 were newly recorded in poisoning incidents (*1*–*7*). The three most frequently encountered were *Chlorophyllum molybdites* (269 incidents, 540 patients, 1 death), *Russula* aff. *japonica*

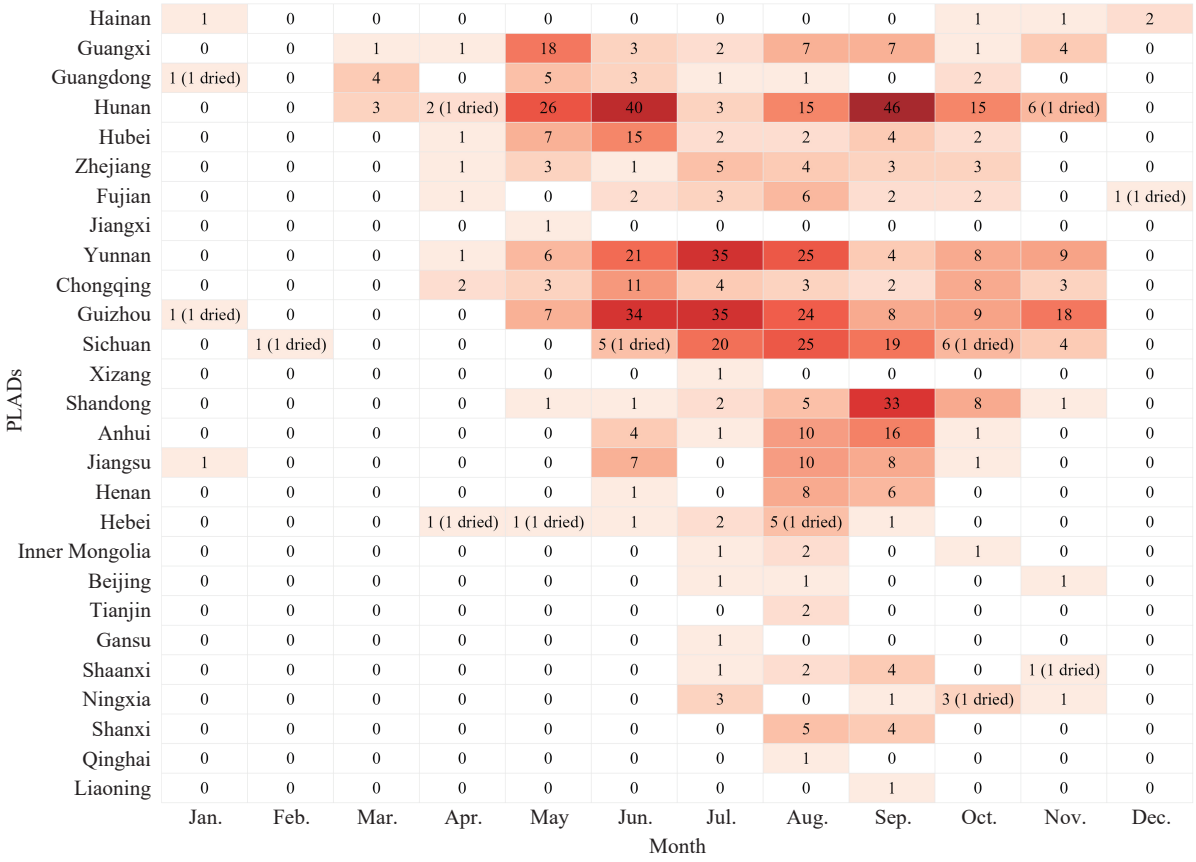


FIGURE 2. Heatmap of the number of mushroom poisoning incidents in China, 2025.
Note: dried means cases affecting consumption of dried mushrooms.

(41 incidents, 100 patients), and *Entoloma omiense* (34 incidents, 90 patients).

In 2025, 41 mushroom species associated with psycho-neurological disorders were documented in China (Supplementary Table S1), of which 10 were newly identified in poisoning incidents (*1*–*7*). The three most frequently involved were *Gymnopilus dilepis* (13 incidents, 31 patients), *Pseudosperma triaciculare* (7 incidents, 16 patients), and *Amanita subglobosa* (7 incidents, 15 patients).

Overall, mushroom poisoning incidents rose markedly in 2025. Summer and autumn remained the peak seasons for poisonings, whereas winter saw a notable peak in fatalities. Southern regions continued to bear the heaviest burden, but northern regions showed a marked upward trend. A growing number of poisonous mushrooms have been identified in poisoning incidents, including several potentially new poisonous species.

DISCUSSION

In 2025, the numbers of mushroom poisoning incidents and affected patients reached a seven-year high, whereas the number of fatalities was the lowest over that period (*1*–*6*). This paradox of more incidents but fewer deaths can be attributed to greater public awareness, faster medical intervention, and more effective treatment. Of the 138 poisonous mushrooms identified from poisoning incidents in 2025, 104 had been documented previously (*1*–*6*), bringing the cumulative number of species implicated in poisoning incidents in China to approximately 280 by the end of 2025. The year's most lethal species were *Galerina sulciceps* and *Amanita exitialis*, each responsible for three deaths. Acute liver failure was the deadliest clinical presentation, accounting for eight deaths, followed by rhabdomyolysis and acute renal failure with two each. Notably, one death was attributed to *Chlorophyllum molybdites*, a species that typically causes only gastroenteritis. Many specimens could not be identified to species level and were therefore labeled as "sp.," largely because the taxonomy of many mushroom groups remains poorly understood and numerous species await discovery; in other cases, identification was limited to a preliminary level because

TABLE 1. Geographical distribution of mushroom poisoning incidents in China, 2025.

PLADs	Number of incidents	Number of patients	Deaths	Case fatality (%)
Hunan	156	278	0	0
Guizhou	136	513	7	1.36
Yunnan	109	261	2	0.77
Sichuan	80	247	0	0
Shandong	51	119	0	0
Guangxi	44	140	1	0.71
Chongqing	36	77	0	0
Hubei	33	72	1	1.39
Anhui	32	89	1	1.12
Jiangsu	27	63	0	0
Zhejiang	20	37	0	0
Fujian	17	37	0	0
Guangdong	17	29	1	3.45
Henan	15	35	0	0
Hebei	11	27	0	0
Shanxi	9	23	0	0
Shaanxi	8	25	0	0
Ningxia	8	19	0	0
Hainan	5	34	0	0
Inner Mongolia	4	20	0	0
Beijing	3	4	0	0
Tianjin	2	5	0	0
Jiangxi	1	3	0	0
Qinghai	1	3	0	0
Gansu	1	2	0	0
Liaoning	1	2	0	0
Xizang	1	1	0	0
Total	828	2,165	13	0.60

Abbreviation: PLAD=provincial-level administrative division.

specimens were unavailable or in poor condition. Consistent with the trends of the past six years, most poisoning incidents continued to be caused by mushrooms that induce gastroenteritis and psycho-neurological disorders.

Analysis of temporal patterns showed that the 2025 poisoning season extended from May to November. This duration matched 2021 and 2022 but was longer than in 2019–2020 and 2023–2024 (*1*–*6*). Surprisingly, and unlike the summer or autumn peaks seen in 2019–2024, poisonings in 2025 peaked in September, while fatalities peaked in November (*1*–*6*). Geographically, a rapid rise in incidents pushed Shandong to fifth place in 2025. These shifts in the timing and regional pattern of poisonings may be partly attributable to climate change: in 2025, China's climate showed pronounced warming and wetting, breaking multiple records and triggering frequent extreme-weather events.

In 2025, *Amanita exitialis*, a cause of acute liver failure, was recorded for the first time in Zunyi, northern Guizhou, after an incident involving five patients on June 12. This finding contrasts with previous studies, which had reported the species only in the Qianxinan Buyi and Miao Autonomous Prefecture(*1*–*6*). In addition, *A. molliuscula* caused three poisonings — in Hubei, Shaanxi, and Yunnan — extending its known range to include Yunnan in Southwest China (*6*). These marked geographical expansions of *A. exitialis* and *A. molliuscula* may reflect

both genuine range expansion (e.g., climate-driven) and improved surveillance and identification.

In 2025, seven *Amanita* species were identified as causes of acute kidney injury, an increase over 2019–2024 (*1*–*6*). Notably, *Amanita abrupta* was associated with two deaths in Guizhou — the first time the species had been recorded as a cause of death in China. As in previous studies (*1*–*6*), *A. oberwinkleriana* and *A. pseudoporphyria* remained the two species most often implicated in acute kidney injury. This upward trend underscores the need to strengthen public education about mushrooms that cause acute kidney injury in order to prevent and reduce poisoning incidents. It is also important to recognize that symptoms vary by species: *A. pseudoporphyria*, for example, can cause acute kidney failure and, in some cases, myocardial injury, while animal experiments have shown that *A. abrupta* can cause some degree of liver damage (*8*). Meanwhile, *Russula subnigricans* caused 12 incidents of rhabdomyolysis — comparable to 2020 but lower than in 2019 and 2021–2024 (*1*–*6*). In addition, *Paxillus ammoniavirescens* was documented for the first time as a cause of hemolysis in poisoning incidents (*2*–*4*,*6*). In the future, hemolytic poisoning should be carefully distinguished from gastroenteritis and rhabdomyolysis to avoid misdiagnosis.

In 2025, the number of mushroom species identified as causes of gastroenteritis reached 78, including 21 newly recorded species — more than the annual total in each of the previous six years (*1*–*6*). *Chlorophyllum molybdites* remained the most common, accounting for 32.49% of all poisoning incidents, and its range expanded to Hebei and Shaanxi in northern and northwestern China. Over the same period, 41 species linked to psycho-neurological disorders were documented, also an increase over 2019–2024 (*1*–*6*).

Eating raw wild mushrooms is extremely risky. In 2025, four patients from three separate incidents developed gastroenteritis after eating the raw fruiting bodies of the *Atheniella flavoalba* complex, *Collybiopsis yunnanensis*, and *Gerronema nemorale*, whose edibility had not previously been established. These cases reinforce a critical public health message: people should never taste wild mushrooms, even species they believe to be familiar.

This study is based solely on incidents investigated through our collaborative system of CDC staff, clinicians, and mycologists. Several limitations — including underreporting of mild gastroenteritis cases, difficulty identifying species from mixed-mushroom meals, and possible data-collection biases across PLADs — also pose major challenges for the prevention and control of mushroom poisoning. Moreover, in many cases no specimens or photographs were available, so the causative species could not be definitively identified, which limited the scope for targeted treatment. This highlights the need for better field documentation in future poisoning incidents.

To reduce the burden of mushroom poisoning, we call for closer collaboration among CDC staff, clinicians, and mycologists. Priorities include jointly developing varied, accessible educational materials on poisonous mushrooms and mounting broad public-awareness campaigns to promote mushroom safety.

Conflicts of interest: No conflicts of interest.

Acknowledgements: Profs. Zhuliang Yang, Xianghua Wang, Gang Wu, Hong Luo, Zaiwei Ge, Yanchun Li (Kunming Institute of Botany, Chinese Academy of Sciences), Profs. Zuohong Chen, Ping Zhang (Hunan Normal University), Profs. Taihui Li, Wangqiu Deng, Drs. Ming Zhang, Chaoqun Wang (Institute of Microbiology, Guangdong Academy of Sciences), Profs. Tolgor Bau, Haiying Bao (Jilin Agricultural University), Prof. Niankai Zeng (Hainan Normal University), Prof. Yuguang Fan (Hainan Medical University), Prof. Liping Tang (Kunming Medical University), Prof. Junfeng Liang (Research Institute of Tropical Forestry, Chinese Academy of Forestry), Profs. Yucheng Dai, Baokai Cui, Shuanghui He, Jing Si (Beijing Forestry University), Prof. Haisheng Yuan (Institute of Applied Ecology, Chinese Academy of Sciences), Prof. Xiaolan He (Institute of Agricultural Resources and Environment, Sichuan Academy of Agricultural Science) and Profs. Liangdong Guo, Lei Cai, Ruilin Zhao (Institute of Microbiology, Chinese Academy of Sciences); involved CDCs and hospitals.

Funding: Supported by Ministry of Science and Technology of the People's Republic of China National Natural Science Foundation of China (32270021, 32570009).

doi: 10.46234/ccdcw2026.120

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Submitted: April 15, 2026
Accepted: June 08, 2026
Issued: June 12, 2026

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SUPPLEMENTARY MATERIAL

SUPPLEMENTARY TABLE S1. Mushroom species implicated in cases of poisoning and their spatial and temporal distribution in China, 2025.

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Acute liver failure					
Amanita exitialis	5	8	3	37.50	March 8 to 25, Guangdong; May 16 and June 4, Yunnan (1 Burmese died)
Amanita exitialis, *A. pseudoporphyria*[AKI], *A. rubiginosa*[U], *A. orienticrocea*[U]	1	5	0	0.00	June 12, Guizhou
Amanita exitialis, *Collybiopsis* sp.[U], *Gyrodon* sp.[U], *Tylopilus* sp.[U], *Xerocomus uttarakhandae*[U]	1	3	0	0.00	June 9, Yunnan
Amanita fuliginea	5	15	0	0.00	May 29 to June 5, Hunan
Amanita fuliginea, *A. sepiacea*[P], *Lactarius atromarginatus*[G], *A. hamadae*[U]	1	3	0	0.00	June 1, Hunan
Amanita fuliginea, *A. sepiacea*[P], *Russula pseudocompacta*[E], *R. zvarae*[U], *R. indohimalayana*[U]	1	5	0	0.00	May 29, Hunan
Amanita fuliginea, *Russula brevispora*[G], *R. griseostipitata*[E], *Russula* sp.[U]	1	1	0	0.00	May 29, Hunan
Amanita fuligineoides	2	4	1	25.00	May 15 and 26, Guangdong, Guangxi
Amanita fuligineoides, *A. pseudoporphyria*[AKI], *A. kotohiraensis*[AKI], *A.* aff. *virginioides*[AKI], *A. pseudofritillaria*[U], *A. radiata*[U], *Aureoboletus* aff. *sinobadius*[U]	1	1	0	0.00	May 14, Guangdong
Amanita fuligineoides, *A. vestita*[U]	1	2	0	0.00	May 22, Guangdong
Amanita molliuscula, *A. pseudogemmata*[P], ***Lactarius subatlanticus***[G], *Russula* cf. *pseudolepida*[E], *R. mansehraensi*[U], *Russula* sp.[U], *Amanita* sp.[U]	1	3	0	0.00	June 13, Hubei
Amanita molliuscula, *Laccaria parva*[E], *Russula vesca*[E], *Infundibulicybe alkaliviolascens*[U]	1	4	0	0.00	August 31, Shaanxi
Amanita molliuscula, *A. pallidorosea*[ALF], *A. citrina*[P]	1	1	0	0.00	October 1, Yunnan
Amanita pallidorosea	1	2	0	0.00	July 15, Sichuan
Amanita pallidorosea, *A. abrupta*[AKI], *A. orientigemmata*[P], *A. siamensis*[P], *A. fritillaria*[P], *Candolleomyces candolleanus*[G,P], *A. kitamagotake*[E], *Agaricus luteofibrillosus*[U], *Hourangia nigropunctata*[U]	1	2	0	0.00	July 7, Guizhou
Amanita pallidorosea, *Suillus huapi*[G], *A. cinereoflava*[U]	1	1	0	0.00	June 16, Hubei
Amanita pallidorosea, *A. parvipantherina*[P], *A. subglobosa*[P], *A.* aff. *princeps*[E], *Agaricus subrufescens*[E], *Russula cerea*[U], *R. longicollis*[U]	1	3	0	0.00	July 29, Guizhou
Amantia rimosa	2	5	0	0.00	June 6 and 28, Hunan, Jiangsu
Amantia rimosa, *A. fuliginea*[ALF]	1	1	0	0.00	May 31, Hunan
Amanita subjunquillea	5	18	0	0.00	April 19, Hebei (dried mushrooms, collected in 2024); July 4 and 17, Yunnan; August 18, Guizhou
Amanita subjunquillea, ***Collybia phyllophila***[P], ***Infundibulicybe gibba***[P], *Agaricus sinoplacomyces*[G], *A. xanthodermus*[G], *A. silvaticus*[E], *Armillaria gallica*[E], *Kuehneromyces mutabilis*[E], *Cortinarius bivelus*[U], *Tricholoma parafulvum*[U], *Echinoderma* sp.[U]	1	2	0	0.00	May 13, Hebei (dried mushrooms, collected in 2024)
Amanita subjunquillea, *Russula mariae*[E]	1	1	0	0.00	July 27, Guizhou
Amanita subjunquillea, *Amanita ochracea*[E]	1	5	0	0.00	August 2, Guizhou

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Amanita subjunquillea, *Amanita oberwinkleriana*[AKI]	1	5	0	0.00	August 14, Hebei
Amanita subjunquillea, *Collybia phyllophila*[P], *Lactarius cremicolor*[U]	1	2	0	0.00	September 9, Hebei
Amanita subpallidorosea	3	9	1	11.11	October 6 to November 12, Yunnan, Guizhou
Amanita subpallidorosea, *Tricholoma terreum*[E], *Kuehneromyces* cf. *mutabilis*[E]	1	1	0	0.00	November 21, Guizhou
Amanita subpallidorosea, *Tricholoma terreum*[E], *Russula crustosa*[E], *Russula* sp.[U]	1	8	0	0.00	September 19, Guizhou
Amanita spp.	4	10	0	0.00	June 2 and 4, Hunan; July 6, Sichuan; September 17, Shanxi
Galerina sulciceps	14	38	3	7.89	May 21 and July 1, Yunnan; October 25 to November 21, Sichuan, Guizhou, Yunnan, Chongqing
Galerina sulciceps, *Russula pseudojaponica*[U]	1	4	0	0.00	September 9, Sichuan
Galerina sulciceps, *Suillus pinetorum*[G], *Lactarius cinnamomeus*[E], *Tephrocybe* sp.[U]	1	2	0	0.00	November 17, Guizhou
Lepiota brunneoincarnata	13	34	0	0.00	June 23, Guizhou, Hubei; July 9, Gansu; August 26 to September 28, Shanxi, Tianjin, Henan, Jiangsu, Shandong
Lepiota brunneoincarnata, *Leucoagaricus rubrotinctus*[U]	1	4	0	0.00	September 4, Shandong
Lepiota brunneoincarnata, *Agaricus sinoplacomyces*[G], *Coprinellus micaceus*[G], *A. pseudopratensis*[E], *A. parvibrunneus*[U], *Entoloma rusticoides*[U], *Leucoagaricus centricastaneus*[U], *La. nivalis*[U], *La. subcrystallifer*[U]	1	2	0	0.00	September 7, Shandong
Lepiota brunneoincarnata, *Lepiota cristata*[U], *Leucocoprinus beijingensis*[U]	1	2	0	0.00	September 21, Shandong
Lepiota brunneoincarnata, *Marasmius confertus*[U], *Leucoagaricus nivalis*[U]	1	1	0	0.00	September 24, Shandong
Lepiota brunneoincarnata, *Coprinellus micaceus*[G]	1	2	0	0.00	September 24, Shandong
Lepiota brunneoincarnata, *Coprinellus micaceus*[G], *Lepiota* sp.[U]	1	2	0	0.00	September 25, Shandong
Lepiota brunneoincarnata, *Pseudosperma arenarium*[P], *Psathyrella pygmaea*[U]	1	2	0	0.00	September 27, Shandong
Lepiota brunneoincarnata, *Leucocoprinus leucothites*[G], *Coprinus comatus*[E], *Leucoagaricus barssii*[U]	1	2	0	0.00	September 27, Shaanxi
Lepiota brunneoincarnata, *Coprinellus micaceus*[G], *Agaricus tephrolepidus*[U], *Lepiota* sp.[U]	1	2	0	0.00	November 11, Shandong
Lepiota brunneoincarnata, *Limacella urbana*[U]	1	1	0	0.00	November 13, Shandong
Lepiota brunneoincarnata, *Agaricus bitorquis*[E]	1	2	0	0.00	November 14, Shandong
Rhabdomyolysis					
Russula subnigricans	9	28	2	7.14	June 30 to September 23, Yunnan, Zhejiang, Guizhou, Hunan, Anhui
Russula subnigricans, *R. brevispora*[G]	1	3	0	0.00	August 2, Jiangsu
Russula subnigricans, *Cantharellus applanatus*[E], *Oudemansiella submucida*[E], *R. nigrocarpa*[U], *Lactocollybia epia*[U]	1	2	0	0.00	August 10, Yunnan
Russula subnigricans, *R. flavescens*[G], *R. rosea*[E]	1	2	0	0.00	September 4, Anhui
Acute kidney injury					
Amanita abrupta	1	2	2	100.00	November 1, Guizhou
Amanita gymnopus	1	1	0	0.00	June 2, Hunan
Amanita kotohiraensis, *Amanita pseudoporphyria*[AKI], *Cortinarius sanguineus*[U], *Russula cyanoxantha*[E], *R. pseudocompacta*[E]	1	4	0	0.00	July 3, Guizhou

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Amanita neoovoidea	2	3	0	0.00	July 8 and 10, Sichuan, Yunnan
Amanita oberwinkleriana	3	5	0	0.00	July 9 and 16, Sichuan, Guizhou; August 14, Shanxi
Amanita oberwinkleriana, *Lactarius subhirtipes*[G], *Russula insignis*[G], *Amanita pseudofritillaria*[U], *A. huijsmanii*[U], *A. ovalispora*[U], *R. callainomarginis*[U], *Tylopilus violaceobrunneus*[U]	1	3	0	0.00	September 21, Henan
Amanita oberwinkleriana, *Agaricus sinoplacomyces*[G], *A. griseopileatus*[U]	1	3	0	0.00	August 31, Shanxi
Amanita oberwinkleriana, *A. virgineoides*[AKI]	1	2	0	0.00	July 24, Sichuan
Amanita pseudoporphyria	5	16	0	0.00	June 1 to July 6, Guangxi, Yunnan
Amanita virgineoides	1	1	0	0.00	August 10 to 11, Fujian
Amanita virgineoides, *Acyanoboletus controversus*[U], *Russula* spp.[U]	1	2	0	0.00	August 8, Guizhou
Amanita spp.	2	3	0	0.00	August 5, Fujian; August 18, Hebei
Gastroenteritis					
***Atheniella flavoalba* complex**	1	1	0	0.00	May 26, Guangdong (1 child ate raw mushrooms)
Agaricus sp.	1	3	0	0.00	September 27, Hunan
Amanita sp.	1	1	0	0.00	July 9, Yunnan
Baorangia major	1	6	0	0.00	June 24, Fujian
Baorangia major, *Boletus bainiugan*[E], may mixed with *Russula subnigricans*[R]	1	1	0	0.00	June 10, Yunnan
Baorangia major, *Russula yanheensis*[U], *R. subbubalina*[U], *R. pseudobubalina*[U], *Rufoboletus hainanensis*[U]	1	2	0	0.00	December 3, Fujian (ate dried mushrooms)
Baorangia pseudocalopus, *Suillus phylopictus*[G], *Amanita orsonii*[P], *Laccaria aurantia*[E], *A.* cf. *rubescens*[U], *A.* aff. *spissacea*[U], *Russula crustosa*[U]	1	3	0	0.00	July 16, Guizhou
Baorangia sp.	1	7	0	0.00	June 8, Yunnan
Boletellus indistinctus	2	3	0	0.00	July 7 and August 6, Fujian
Candolleomyces candolleanus	1	3	0	0.00	June 12, Jiangsu
Chlorophyllum demangei	4	13	0	0.00	May 23, Guangxi; August 29, Sichuan
Chlorophyllum demangei, *Agaricus sinoplacomyces*[G], *Marasmius maximus*[G], *A. bitorquis*[E]	1	2	0	0.00	September 25, Sichuan
Chlorophyllum globosum	2	4	0	0.00	August 20 and 31, Sichuan
Chlorophyllum cf. *globosum*	10	28	0	0.00	May 22 to October 23, Guizhou, Chongqing, Sichuan
Chlorophyllum cf. *globosum*, *Collybia sordida*[E]	1	2	0	0.00	September 9, Sichuan
Chlorophyllum hortense	1	1	0	0.00	May 30, Hunan
Chlorophyllum hortense, *Agaricus subrufescens*[E], *Russula* sp.[U]	1	3	0	0.00	August 28, Guizhou
Chlorophyllum molybdites	261	521	1	0.19	April 22 to November 11, Hubei, Zhejiang, Fujian, Hunan, Guangxi, Yunan, Chongqing, Sichuan, Jiangsu, Anhui, Hebei, Henan, Shandong, Shaanxi, Hainan (4 patients of 3 incidents from Hunan and Sichuan ate raw mushrooms)

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Chlorophyllum molybdites, *Agaricus andrewii*[U]	1	2	0	0.00	October 25, Hubei
Chlorophyllum molybdites, *Agaricus* sp.	1	1	0	0.00	July 1, Guangdong
Chlorophyllum molybdites, *Chlorophyllum hortense*[G]	1	3	0	0.00	July 27, Guangxi
Chlorophyllum molybdites, *Russula* cf. *japonica*	1	1	0	0.00	June 3, Hunan
Chlorophyllum molybdites, *Macropsalliota subtropica*[U]	1	4	0	0.00	September 6, Sichuan
Chlorophyllum molybdites, *Marasmius maximus*[G]	1	3	0	0.00	September 29, Jiangsu
Chlorophyllum molybdites, *Pseudosperma triaciculare*[P]	1	2	0	0.00	September 28, Shandong
Chlorophyllum molybdites, *Pseudosperma triaciculare*[P], *Entoloma* spp.[U]	1	3	0	0.00	September 7, Shandong
Chlorophyllum palaeotropicum	1	3	0	0.00	October 1, Hainan
Collybiopsis yunnanensis	1	1	0	0.00	June 11, Yunnan (1 primary school student ate raw mushroom)
Coprinellus micaceus	1	1	0	0.00	November 6, Sichuan
Coprinoid fungi	1	1	0	0.00	June 12, Anhui (1 student ate raw mushrooms)
Entoloma caespitosum	1	3	0	0.00	September 10, Sichuan
Entoloma* cf. *subsinuatum	1	3	0	0.00	September 27, Guizhou
Entoloma* cf. *subsinuatum, *Amanita yuaniana*[E], *Leucoagaricus centricastaneus*[U]	1	3	0	0.00	July 9, Yunnan
Entoloma omiense	16	39	0	0.00	June 27 to September 15, Guangxi, Guizhou, Hunan, Yunnan, Chongqing, Sichuan
Entoloma omiense, *Amanita hamadae*[E], *Russula junzifengensis*[U]	1	1	0	0.00	June 23, Hunan
Entoloma omiense, *Termitomyces microcarpus*[E]	1	1	0	0.00	June 24, Guangxi
Entoloma omiense, *Russula japonica* complex[G]	2	6	0	0.00	June 26 and 28, Hunan
Entoloma omiense, *Amanita* sp.[U]	1	1	0	0.00	June 29, Hunan
Entoloma omiense, *Collybiopsis clavicystidiata*[U]	1	4	0	0.00	June 29, Guizhou
Entoloma omiense, *Lactarius atromarginatus*[G]	1	3	0	0.00	June 29, Hunan
Entoloma omiense, *Lactarius atromarginatus*[G], *Russula pseudocompacta*[E], *R.subpunicea*[U]	1	2	0	0.00	June 29, Hunan
Entoloma omiense, *Gyrodon* cf. *suthepensis*[U]	1	5	0	0.00	July 2, Guizhou
Entoloma omiense, *Laccaria guizhouensis*[E]	1	3	0	0.00	July 26, Guizhou
Entoloma omiense, *Collybiopsis clavicystidiata*[U], *Amanita* sp.[U]	1	2	0	0.00	July 28, Guizhou
Entoloma omiense, *Amanita constricta*[U], *Entoloma* sp.[U]	1	1	0	0.00	July 29, Hunan
Entoloma omiense, *Russula japonica* complex[G], *Lacctifluus volemus*[E], *Russula* sp.[U]	1	1	0	0.00	July 31, Guizhou
Entoloma omiense, *Stropharia subrugosoannulata*[E], *Oudemansiella raphanipes*[E]	1	3	0	0.00	August 3, Zhejiang
Entoloma omiense, *Clavulina coralloides*[E]	1	7	0	0.00	August 21, Guizhou
Entoloma omiense, *Entoloma lacticolor*[U]	1	4	0	0.00	August 24, Sichuan
Entoloma omiense, *Gliophorus* sp.[U], *Gyrodon* sp.[U], *Entoloma* sp.[U]	1	5	0	0.00	August 27, Guizhou
Entoloma omiense, *Phylloporus rubiginosus*[E], *Scleroderma yunnanense*[E]	1	2	0	0.00	September 22, Sichuan

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Entoloma sp., *Lactarius* cf. *liyuanus*[U]	1	1	0	0.00	July 5, Guizhou
Entoloma sp., *Boletus violaceofuscus*[E], *Amanita virgineoides*[ALF]	1	8	0	0.00	August 26, Guizhou
Entoloma spp.	4	11	0	0.00	June 26 to September 3, Guizhou, Sichuan, Shaanxi
Entoloma cf. *subsaundersii*	1	10	0	0.00	August 29, Guizhou
Entoloma cf. *subsaundersii*, *Lanmaoa angustispora*[U]	1	8	0	0.00	August 28, Guangxi
Gerronema nemorale	1	2	0	0.00	May 29, Guizhou (2 students ate raw mushrooms)
Gymnopus densilamellatus	3	19	0	0.00	May 21 to June 9, Guizhou (12 patients ate mushrooms bought from market)
Gymnopus densilamellatus, *Rhodocollybia butyracea*[E]	1	3	0	0.00	May 10, Guizhou
Gymnopus densilamellatus, *Suillus placidus*[G], *Lulesia* sp.[U], *Russula succinea*[U], *S. sibiricus*[U]	1	4	0	0.00	July 13, Guizhou
Gymnopus dryophiloides, *Hypholoma fasciculare*[G], *Armillaria cepistipes*[E], *Rhodocollybia butyracea*[E], *Stropharia rugosoannulata*[E]	1	6	0	0.00	November 13, Guizhou
Gymnopus spp.	5	11	0	0.00	March 13, Hunan; June 3, Guizhou; July 31, Hunan; November 13 and 16, Hunan, Guizhou
Gyroporus sp.	1	1	0	0.00	July 24, Sichuan
Heimioporus gaojiaocong, *Russula* sp.[U]	1	7	0	0.00	July 23, Sichuan
Heimioporus gaojiaocong, ***Suillellus yunnanensis***[G], *Lanmaoa asiatica*[E], *Aureoboletus albipes*[E], *Lanmaoa macrocarpa*[U], *Baorangia* sp.[U], *Tylopilus* sp.[U]	1	2	0	0.00	August 5, Hebei (dried boletes, bought from Dali, Yunnan)
Heimioporus japonicus, *Baorangia major*[G], *Boletus viscidiceps*[E], *Lanmaoa asiatica*[E], *Hongoboletus* sp.[U], *Lactarius* sp.[U]	1	3	0	0.00	November 9, Hunan (dried boletes, bought from Yunnan)
Hypholoma fasciculare, *Armillaria mellea*[E]	1	10	0	0.00	November 22, Guizhou
Hypholoma fasciculare, *Lactifluus pilosus*[G], *Amanita subglobosa*[P], *A. caojizong*[E], *Cantharellus applanatus*[E], *Lactarius vividus*[E], *Russula compacta*[E], *R. cyanoxantha*[E], *R. pseudovirescens*[E], *Retiboletus sinensis*[E], *Russula callainomarginis*[U], *R. fujianensis*[U], *R. yanheensis*[U], *R. multilamellula*[U], *Russula* spp.[U]	1	3	0	0.00	April 7, Hunan (dried mushrooms bought from market)
Hypholoma lateritium	1	2	0	0.00	June 30, Sichuan
Lacrymaria lacrymabunda	1	1	0	0.00	September 27, Yunnan
Lactarius* cf. *alpinihirtipes, *Laccaria aurantia*[E]	1	2	0	0.00	July 14, Yunnan
Lactarius* cf. *alpinihirtipes, *Rubroboletus flavus*[G], *Sarcodon imbricatus*[E], *Leccinum* sp.[U]	1	2	0	0.00	August 7, Sichuan
Lactarius citrinus, *Cortinarius fragrantissimus*[U]	1	1	0	0.00	November 25, Guizhou
Lactarius hirtipes, *Scleroderma cepa*[G], *Amanita* sp.[U], *Leptocaulis ericaeus*[U]	1	2	0	0.00	August 18, Guizhou
Lactarius rubrocorrugatus, *Russula albocarpa*[U]	1	5	0	0.00	June 1, Guizhou
Lactarius subhirtipes, *Russula compacta*[E]	1	3	0	0.00	July 28, Guizhou
Lactarius sp., *Agaricus* sp.[U]	1	1	0	0.00	August 8, Guizhou
Lactarius spp.	2	4	0	0.00	May 25 and June 5, Guizhou
Lactifluus pilosus, *Russula japonica* complex[G]	1	4	0	0.00	August 9, Guizhou
Lactifluus pseudoluteopus	2	8	0	0.00	June 28 and September 6, Yunnan
Lactifluus sp.	1	1	0	0.00	August 1, Yunnan

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Lepista* cf. *subisabellina	2	5	0	0.00	June 27, Guizhou; August 15, Sichuan
Leucocoprinus cretaceous, *Marasmius blandus*[U]	1	2	0	0.00	August 28, Sichuan
Leucocoprinus sp.	1	2	0	0.00	September 27, Hunan
Marasmius maximus	2	3	0	0.00	September 19 and 25, Zhejiang, Shandong
Marasmius spp.	2	3	0	0.00	June 10 and 23, Jiangsu, Hubei
Neoboletus flavidus	1	6	0	0.00	June 18, Jiangsu,
Neoboletus venenatus	4	18	0	0.00	August 16 to 23, Sichuan, Yunnan; November 5, Shandong (dried boletes, bought from Yunnan market)
Neoboletus venenatus, *Butyriboletus yicibus*[E]	2	6	0	0.00	October 22 and November 2, Ningxia, Shaanxi (dried boletes, bought from Yunnan market)
Omphalotus guepiniformis	3	8	0	0.00	August 27 and September 18, Yunnan; November 12,Guangxi
Omphalotus olearius	2	12	0	0.00	October 8 and 18, Guizhou, Yunnan
Omphalotus olearius, *Amanita chepangiana*[E]	1	1	0	0.00	September 3, Yunnan
Omphalotus yunnanensis	3	29	0	0.00	January 18, Hainan; December 2 and 11, Hainan
Omphalotus sp.	1	2	0	0.00	November 21, Yunnan
Omphalotus sp., *Russula delica*[E], *R.* cf. *parvisaxoides*[U]	1	2	0	0.00	July 10, Yunnan
Rubroboletus flavus	1	7	0	0.00	June 14, Sichuan (dried boletes)
Russula brevispora	5	12	0	0.00	May 26 and June 4, Hunan, Guangdong; July 28 and 30, Guizhou; September 13, Sichuan
Russula brevispora, *Agaricus luteofibrillosus*[U], *Oudemansiella raphanipes*[E]	1	1	0	0.00	May 25, Hunan
Russula brevispora, *Amanita* aff. *albidostipes*[U], *Austroboletus* cf. *fusisporus*[U]	1	2	0	0.00	July 16, Guizhou
Russula grata, *Lactifluus* aff. *piperatus*[G,M], *Lf.* cf. *pilosus*[G], *Amanita subglobosa*[P], *Russula olivacea*[E], *R. pseudocompacta*[E], *R. rosea*[E], *R. vesca*[E], *R. pseudovirescens*[E], *Lf. leoninus*[E], *Lf. pinguis*[E], *Pleurotus ostreatus*[E], *Hebeloma parvisporum*[U], *R. lakhanpalii*[U], *R. mutabilis*[U], *Lf. dwaliensis*[U], *Russula* spp.[U], *Cortinarius* spp.[U]	1	2	0	0.00	January 6, Guangdong (dried mushrooms, bought online)
Russula flavescens	2	6	0	0.00	June 21 and September 2, Yunan, Jiangsu
Russula flavescens, *R. punctipes*[G], *Entoloma omiense*[G], *Amanita sepiacea*[P], *Lactifluus* aff. *gerardii*[E], *A. olivaceofusca*[U], *R. niveopicta*[U], *Candelolepiota sinica*[U], *Russula* sp.[U], *Caloboletus xiangtoushanensis*[U]	1	4	0	0.00	June 1, Hunan
Russula flavescens, *R. cyanoxantha*[E], *R. rosea*[E], *R. clavulus*[U], *Russula* sp.[U]	1	3	0	0.00	July 13, Yunnan
Russula flavescens, *Boletus bainiugan*[E], *Laccaria vinaceoavellanea*[E]	1	2	0	0.00	July 23, Yunnan
Russula flavescens, *Laccaria laccata*[E], *Rugiboletus extremiorientalis*[E], *Tylopilus balloui*[U]	1	2	0	0.00	July 24, Yunnan
Russula flavescens, *R. cylindrica*[U]	1	6	0	0.00	August 26, Guangxi
Russula insignis, *Lactarius subhirtipes*[G], *Hortiboletus rufosquamosus*[U], *Russula* spp.[U]	1	4	0	0.00	July 8, Sichuan
Russula aff. *japonica*	41	100	0	0.00	May 23 to October 19, Hunan, Guangxi, Yunnan, Chongqing, Guizhou, Sichuan,
Russula pseudojaponica	9	41	0	0.00	June 1 to July 19, Guizhou, Sichuan; October 11, Guizhou

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Russula pseudojaponica, *Suillus huapi*[G], *Amanita fritillaria*[P], *Cantharellus applanatus*[E], *Lactarius vividus*[E], *Russula compacta*[E] *Russula rosea*[E], *Amanita ceciliae*[U], *Lactifluus* cf. *hygrophoroides*[U]	1	3	0	0.00	June 11, Guizhou
Russula pseudojaponica, *R.* cf. *virescens*[E], *Russula* sp.[U]	1	2	0	0.00	July 14, Guizhou
Russula pseudojaponica, *R. pallidula*[U]	1	5	0	0.00	July 18, Guizhou
Russula pseudojaponica, *R. pseudovirescens*[E], *R. viridicinnamomea*[E], *Lactifluus* sp.[U]	1	2	0	0.00	August 2, Guizhou
Russula pseudojaponica, *Agaricus bitorquis*[E], *Scleroderma yunnanense*[E]	1	3	0	0.00	October 10, Guizhou
Russula rufobasis nom. prov.	1	2	0	0.00	September 24, Shandong
Russula straminella, *Lactifluus pilosus*[G], *Caloboletus guanyui*[E], *Retiboletus sinensis*[E], *R. cyanoxantha*[E], *R.* cf. *huotanjun*[E], *Russula* sp.[U]	1	2	0	0.00	September 24, Guizhou
Russula sp., *Amanita* sp.[U]	1	3	0	0.00	June 3, Hunan
Russula sp., *Boletus* sp.[U]	1	9	0	0.00	June 10, Guizhou
Russula spp.	5	17	0	0.00	June 1 to October 21, Guizhou, Yunnan, Shandong, Guangdong
Scleroderma areolatum	1	1	0	0.00	June 10, Guizhou
Scleroderma australe	2	5	0	0.00	May 9 and 30, Guangdong (picked up mushrooms that have fallen from someone else's car), Guangxi
Scleroderma australe, *S. yunnanense*[E]	1	3	0	0.00	June 10, Guizhou
Scleroderma cepa	4	10	0	0.00	June 9 and July 14, Guizhou; August 12 and 24, Yunnan
Scleroderma cepa, *Russula* sp.[U]	1	3	0	0.00	September 6, Sichuan
Scleroderma lunare	1	1	0	0.00	June 21, Fujian
Scleroderma spp.	4	22	0	0.00	April 23, Yunnan; May 26, Guangxi; August 4 and 9, Yunnan, Zhejiang
Suillus pinetorum	1	1	0	0.00	August 26, Yunnan
Tapinella atrotomentosa, *R. cyanoxantha*[E], *R. griseocarnosa*[E], *Russula rosea*[E], *Lactifluus gerardii*[E], *Lf. subpruinosus*[E], *R. brunneoaurantiaca*[U], *R. wielangtae*[U], *R. subatropurpurea*[U], *Russula* spp.[U], *Lactarius* sp.[U]	1	2	0	0.00	August 27, Guangxi
Tricholoma highlandens, *Tricholoma terreum*[E]	1	3	0	0.00	September 10, Yunnan
Tricholoma olivaceum, ***T. muscarioides***[G], *T. qiaomianjun*[E]	1	2	0	0.00	October 20, Yunnan
Tricholoma sinopardinum	2	8	0	0.00	August 17, Qinghai; October 15, Yunnan
Tricholoma stans, *Lyophyllum pallidofumosum*[E], *Russula exalbicans*[E], *Cortinarius cotoneus*[E], *Agaricus deardorffensis*[U], *Tricholoma* sp.[U]	1	8	0	0.00	October 19, Sichuan
Tricholoma ustale, *Gymnopilus penetrans*[P], *Tricholoma terreum*[E], *Tricholoma* sp.[U], *Rhodocollybia variabilicolor*[U], *Russula* sp.[U]	1	5	0	0.00	November 12, Yunnan
Tylopilus neofelleus	1	1	0	0.00	June 11, Yunnan
Tylopilus neofelleus, *A. sinocitrina*[P], *A. orsonii*[P], *Russula pseudocompacta*[E], *R. sanguinea*[E], *Amanita* sp.[U]	1	2	0	0.00	June 8, Guizhou (bought from market)
Tylopilus neofelleus, *Lanmaoa asiatica*[E,P], *Butyriboletus sanicibus*[U], *Butyriboletus* sp.[U], *Imperator* sp.[U], *Rubroboletus* sp.[U]	1	5	0	0.00	January 29, Guizhou (dried boletes)
Tylopilus neofelleus, *Pulveroboletus subrufus*[G], *Amanita sphaerobulbosa*[ALF]	1	3	0	0.00	July 13, Guizhou

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Tylopilus neofelleus, *Russula vesca*[E], *Agaricus flocculosipes*[E], *Scleroderma yunnanense*[E], *Lactifluus* spp.[U]	1	5	0	0.00	August 1, Guizhou
Wynnea gigantea	1	1	0	0.00	June 29, Guizhou
Psycho-neurological disorder					
Amanita collariata	1	2	0	0.00	May 17, Guangxi
Amanita collariata, *A. caojizong*[E], *A. elata*[U], *A. hamadae*[U] , *Russula mutabilis*[U]	1	2	0	0.00	May 21, Guangxi
Amanita flavopantherina	3	5	0	0.00	July 6 to August 4 , Yunnan, Xizang, Sichuan
Amanita griseopantherina	1	5	0	0.00	July 25, Sichuan
Amanita ibotengutake	3	5	0	0.00	September 16 to 21, Shandong
Amanita ibotengutake, *Suillus granulatus*[G], *Lactarius akahatsu*[E], *Russula sanguinea*[E]	1	1	0	0.00	September 22, Shandong
Amanita orsonii	1	3	0	0.00	July 23, Guizhou
Amanita pseudogemmata	1	5	0	0.00	July 1, Hubei
Amanita pseudopatherina, *Russula* sp.[U]	1	3	0	0.00	August 1, Sichuan
Amanita pseudosychnopyramis	1	2	0	0.00	April 21, Guangxi
Amanita siamensis	4	6	0	0.00	May 29 to July 10, Hunan, Zhejiang, Chongqing, Sichuan
Amanita sinocitrina, *A. sepiacea*[P], *A. pseudoporphyria*[ALF], *Tricholoma terreum*[E], *Hygrophorus brunneodiscus*[U]	1	7	0	0.00	June 10, Guizhou
Amanita subglobosa	2	4	0	0.00	August 18 and September 21, Sichuan, Guizhou
Amanita subglobosa, *Lactifluus glaucescens*[G], *Russula brunneocystidiata*[E], *R.* cf. *lavandula*[E], *R. mutabilis*[U]	1	2	0	0.00	June 12, Guizhou
Amanita subglobosa, *Boletus bainiugan*[E], *Russula vesca*[E]	1	2	0	0.00	July 14, Sichuan
Amanita subglobosa, *A. fritillaria*[P], *A.* aff. *princeps*[E], *A. chatamagotake*[E] , *Amanita* sp.[U]	1	2	0	0.00	August 19, Shandong
Amanita subglobosa, *Russula* cf. *olivacea*[E]	1	2	0	0.00	September 3, Henan
Amanita subglobosa, *Suillus pinetorum*[G], *Russula pseudovirescens*[E]	1	3	0	0.00	September 11, Sichuan
Amanita sychnopyramis f. *subannulata*	4	18	0	0.00	May 18 to 26, Guangxi
Amanita sychnopyramis f. *subannulata*, *Megacollybia clitocyboidea*[G], *Russula* sp.[U], *Agaricus* sp.[U]	1	4	0	0.00	July 22, Yunnan
Anthracoporus nigropurpureus	2	3	0	0.00	July 17, Sichuan; October 4, Zhejiang
Anthracoporus nigropurpureus, *Tylopilus himalayanus*[U], *Porphyrellus* sp.[U]	1	2	0	0.00	July 10, Sichuan
Collybia brunneoumbilicata, *C. sordida*[E], *Armillaria gallica*[E]	1	6	0	0.00	November 11, Guizhou
Collybia phyllophila	1	1	0	0.00	November 7, Yunnan
Collybia subtropica	1	2	0	0.00	November 1, Sichuan
Collybia sp.	6	17	0	0.00	October 20 to November 20, Guizhou
Gymnopilus dilepis	12	29	0	0.00	April 23 to May 10, Chongqing, Zhejiang; June 6 to July 29, Chongqing, Sichuan, Guizhou; September 9 to October 8, Hubei, Sichuan, Guizhou
Gymnopilus dilepis, ***Gymnopilus igniculus***[P]	1	2	0	0.00	November 10, Hunan
Inocybe involuta	1	1	0	0.00	September 7, Shanxi

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Inocybe serotina	3	15	0	0.00	May 31, Guizhou; October 12 and November 9, Ningxia
Inocybe* cf. *insinuata, *Infundibulicybe alkaliviolascens*[U], *I. ellipsospora*[U], *Lactarius badiosanguineus*[U], *Lactarius* sp.[U], *Russula* sp.[U], *Suillus* sp.[U], *Tricholoma* sp.[U]	1	2	0	0.00	July 30, Guizhou
Inocybe* cf. *soluta	1	5	0	0.00	August 9, Guizhou
Inocybe sp., *Candolleomyces candolleanus*[G]	1	1	0	0.00	June 5, Guizhou
Inocybe spp.	4	22	0	0.00	July 11 and August 8, Sichuan, Guizhou; August 22, Inner Mongolia; September 29, Ningxia
Inosperma aff. *gregarium*	1	3	0	0.00	July 11, Yunnan
Inosperma hainanense	2	3	0	0.00	June 22, Guangdong; August 25, Yunnan
Inosperma hainanense, *Leccinum parascabrum*[E], *Russula junzifengensis*[U]	1	4	0	0.00	September 1, Guizhou
Inosperma zonativeliferum	2	7	0	0.00	August 2 and 16, Yunnan, Guangdong
Inosperma spp.	9	28	0	0.00	May 26 to 29, Guangxi; July 30 to23, Yunnan
Lanmaoa asiatica	2	2	0	0.00	May 28, Yunnan; June 29, Hubei (bought from Yunnan)
Panaeolus cinctulus	1	2	0	0.00	May 28, Shandong
Panaeolus cyanescens	2	7	0	0.00	June 6 and July 26, Guizhou
Panaeolus subbalteatus	1	2	0	0.00	June 20, Shandong
Panaeolus sp.	2	6	0	0.00	March 18 and September 16, Guangxi
Pseudosperma arenarium	1	2	0	0.00	July 11, Inner Mongolia
Pseudosperma arenarium, *P. umbrinellum*[P], *Mallocybe fulvoumbonata*[P], *Candolleomyces candolleanus*[G,M]	1	2	0	0.00	September 6, Shanxi
Pseudosperma arenarium, *Mallocybe fulvoumbonata*[P]	1	3	0	0.00	October 6, Shandong
Pseudosperma arenarium, *P. umbrinellum*[P], *Mallocybe fulvoumbonata*[P], *Agaricus* cf. *pseudopratensis*[E]	1	4	0	0.00	October 13, Shandong
Pseudosperma arenarium, *Hebeloma bingolense*[U], *Collybia* sp.[U], *Mallocybe* sp.[U]	1	2	0	0.00	October 17, Ningxia
Pseudosperma triaciculare	6	14	0	0.00	July 15 to September 12, Beijing, Shandong
Pseudosperma triaciculare, *Candolleomyces candolleanus*[G,M], *Paxillus ammoniavirescens*[E,H], *Coprinus comatus*[E]	1	2	0	0.00	October 10, Shandong
Psilocybe cubensis	2	5	0	0.00	May 12, Jiangxi; September 27, Guangxi
Psilocybe cubensis, *Leucocoprinus cretaceus*[G]	1	1	0	0.00	May 20, Guangxi
Psilocybe keralensis	2	8	0	0.00	May 8 and 17, Hunan, Guizhou
Psilocybe sp.	1	1	0	0.00	October 14, Chongqing
Hemolysis					
Paxillus ammoniavirescens	1	1	0	0.00	October 7, Inner Mongolia
Unclassified					
Agaricus alboumbonatus[E]	1	2	0	0.00	July 20, Ningxia
Agaricus bitorquis[E]	1	2	0	0.00	July 22, Ningxia
Agaricus flocculosipes[E], *Entoloma* sp.[U]	1	9	0	0.00	July 2, Guizhou
Agaricus sp., may mixed with *Lepiota brunneoincarnata*[ALF]	1	3	0	0.00	July 22, Ningxia

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Amanita spp.[U]	2	5	0	0.00	June 6, Chongqing; September 15, Shandong
Amanita caojizong[E]	1	3	0	0.00	June 6, Yunnan
Amanita caojizong[E], *Heimioporus gaojiaocong*[G], *Suillus pinetorum*[G], *Boletus bainiugan*[E], *Amanita javanica*[E], *Laccaria vinaceoavellanea*[E], *Russula pseudocompacta*[E], *Ramaria vinosimaculans*[U], *Russula yanheensis*[U], *Phylloporus dimorphus*[U]	1	1	0	0.00	June 28, Yunnan
Amanita lanigera[U], *Russula phloginea*[U]	1	4	0	0.00	August 6, Yunnan
Amanita rubroflava[E]	1	1	0	0.00	August 5, Yunnan
Amanita rubroflava[E], *Lactifluus volemus*[E], *Lactarius* cf. *corrugis*[E], *L. crocatus*[U]	1	9	0	0.00	August 15, Guizhou
Buchwaldoboletus xylophilus[E], *Morchella sextelata*[E]	1	3	0	0.00	October 26, Guangdong (at a restaurant)
Butyriboletus roseoflavus[E]	1	1	0	0.00	July 4, Yunnan
Collybia nuda[E]	1	1	0	0.00	November 4, Beijing (bought from market)
Coprinus comatus[E]	1	1	0	0.00	June 3, Hunan
Entoloma velutinum[U], *Boletus reticulatus*[E], *Amanita pseudofritillaria*[U], *Gyrodon suthepensis*[U]	1	4	0	0.00	June 30, Guizhou
Hygrophorus lucorum[E], *Collybia nuda*[E], *Lactarius pseudohatsudake*[E], *Spongiporus gloeoporus*[U], *Tricholoma bonii*[U]	1	4	0	0.00	August 15, Inner Mongolia
Hymenogaster arenarius[U]	1	4	0	0.00	July 15, Guizhou
Laccaria montana[E]	1	2	0	0.00	July 13, Yunnan
Laccaria prava[E]	1	2	0	0.00	June 4, Guizhou
Laccaria sp.[E], *Russula huotanjun*[E], *R.* cf. *olivacea*[E], *R. cyanoxantha*[E]	1	1	0	0.00	July 10, Yunnan
Lactarius akahatsu[E], *Lactifluus sainii*[E], *Lactarius evosmus*[U]	1	4	0	0.00	June 7, Guizhou
Lactarius deliciosus[E]	1	7	0	0.00	November 25, Yunnan
Lactifluus kanadii[U], *Entoloma conchatum*[U], *Russula* spp.[U]	1	3	0	0.00	July 28, Guizhou
Lactifluus sp.[U], *Lactarius hatsudake*[E], *Tricholoma terreum*[E], *Calvatia holothurioides*[U]	1	4	0	0.00	October 10, Guizhou
Lentinus squarrosulus[E,M]	1	3	0	0.00	July 18, Yunnan
Chamaemyces fracidus[U]	1	5	0	0.00	July 9, Sichuan
Leucoagaricus sp.[U], *Agaricus* sp.[U]	1	1	0	0.00	August 28, Shanxi
Leucoagaricus nivalis[U], *Agaricus tephrolepidus*[U], *Leucoagaricus* sp.[U], *Cystolepiota squamulosa*[U], *Calocybe erminea*[U]	1	2	0	0.00	September 9, Shandong
Leucoagaricus sp.[U]	1	3	0	0.00	September 29, Anhui
Lyophyllum heimogu[E]	1	2	0	0.00	October 22, Sichuan (dried mushrooms, bought from Yunnan)
Macropsalliota subtropica[U]	1	2	0	0.00	May 15, Hubei
Oudemansiella raphanipes[E], *Agrocybe chaxingu*[E], *Lentinula edodes*[E], *Lyophyllum decastes*[E], *Coprinus comatus*[E], *Pleurotus eryngii*[E], *Russula mariae*[E], *Collybiopsis clavicystidiata*[U], *Albatrellopsis flettioides*[U]	1	9	0	0.00	August 9, Guizhou (at a restaurant)
Phlegmacium flavescentipes[U]	1	1	0	0.00	June 28, Yunnan
Phylloporus brunneiceps[E]	1	2	0	0.00	September 21, Guizhou
Pleurotus ostreatus[E]	1	2	0	0.00	January 8, Jiangsu
Retiboletus fuscus[E]	1	2	0	0.00	July 26, Yunnan

Continued

Mushroom species	Number of incidents	Number of patients	Deaths	Case fatality (%)	Spatial and temporal distribution
Rubroboletus reticulatus[U]	1	3	0	0.00	November 13, Guizhou
Rufoboletus hainanensis[U]	1	2	0	0.00	July 27, Fujian
Russula cf. *persicina*[U], *Russula callainomarginis*[U]	1	2	0	0.00	September 7, Liaoning
Russula cyanoxantha[E], *Gomphus clavatus*[E], *Boletus shiyong*[E], *Cantharellus versicolor*[E], *Catathelasma imperiale*[E], *Hygrophorus deliciosus*[E], *Amanita ochracea*[E], *Cortinarius badiolatus*[U], *C. balteatialutaceus*[U], *C. similis*[U]	1	9	0	0.00	August 28, Sichuan (at a restaurant)
Russula delica[E]	1	1	0	0.00	February 4, Sichuan (dried mushrooms, bought in Sichuan)
Russula lakhanpalii[U]	1	2	0	0.00	July 31, Guizhou
Russula micangshanensis[E]	1	3	0	0.00	July 8, Shaanxi
Russula pseudocompacta[E], *Russula junzifengensis*[U], *Russula niveopicta*[U], *Lactifluus sinensis*[U], suspected ate *Amanita fuliginea*[ALF]	1	5	0	0.00	June 7, Hunan
Russula vesca[E]	1	1	0	0.00	May 30, Hunan
Russula viridicinnamomea[E]	1	4	0	0.00	August 16, Fujian
Russula zhuzuijun[E], *R. cerolens*[U], *R. burlinghamiae*[U], *Russula* sp.[U]	1	9	0	0.00	June 3, Guizhou
Russula zonatus[U]	1	1	0	0.00	July 13, Yunnan
Sarcodon imbricatus[E], *Lentinula edodes*[E]	1	3	0	0.00	July 26, Yunnan
Scleroderma yunnanense[E]	1	2	0	0.00	July 17, Yunnan
Singerocybe alboinfundibuliformis[E]	1	5	0	0.00	August 25, Guizhou
Stropharia rugosoannulata[E]	2	5	0	0.00	March 8, Guangdong (bought online); October 5, Sichuan
Termitomyces fuliginosus[E], *Boletus bainiugan*[E], *Lactarius hatsudake*[E], *Rugiboletus extremiorientalis*[E]	1	1	0	0.00	July 9, Yunnan
Termitomyces intermedius[E]	1	1	0	0.00	June 14, Hunan
Termitomyces intermedius[E], *Russula phloginea*[U]	1	1	0	0.00	August 11, Fujian
Tricholoma terreum[E]	4	12	0	0.00	March 15 and 23, Hunan; November 12 (Hunan) and November 24 (Yunnan)

Note: Superscript letters after a species name denote its clinical syndrome or edibility classification in incidents that involved more than two species. Species newly recorded as poisonous mushrooms in China are shown in bold italics.

Abbreviation: ALF=Acute liver failure; AKI=Acute kidney injury; [R]=Rhabdomyolysis; [G]=Gastroenteritis; [P]=Psycho-neurological disorder; [H]=Hemolysis; [M]=Medicinal; [U]=Unclassified; E=Edible.