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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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EPIDEMIOLOGY AND POST-EXPOSURE MANAGEMENT OF RABIES EXPOSURES AT A COMMUNITY HEALTH CENTER: A 2024–2025 RETROSPECTIVE ANALYSIS

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Abstract.

Objective: To characterize the epidemiological profile and post-exposure management of rabies exposures at the Shengli Subdistrict Community Health Center in Emeishan, China, and to examine annual trends between 2024 and 2025, so as to inform local rabies prevention and control.

Methods: A retrospective analysis was conducted on 4,109 rabies-exposure records from the rabies clinic of the center in 2024-2025, covering demographics, injury month and site, animal type, exposure grade, and passive immunizing-agent administration. Data were entered in Excel and analyzed with SPSS 22.0. Counts and proportions were used for description; Pearson chi-square tests compared distributions between 2024 and 2025, with $P<0.05$ considered significant.

Results: A total of 4,109 exposures were included (1,819 in 2024; 2,290 in 2025, a 25.89% year-on-year increase). Males numbered 1,736 and females 2,373 (M:F = 1:1.37). The highest proportion was among children aged 0-10 years (19.15%, 787/4,109), and June-October was the peak season (2,049 cases, 49.87%). Dogs (54.13%) and cats (38.99%) were the leading sources; the upper limbs were the most common injury site (54.17%). Grade II and III exposures accounted for 38.11% and 61.89%, respectively; among grade III exposures, rabies immunoglobulin was administered in only 28.25% (682/2,414). Year-to-year comparisons showed significant differences in injury site, exposure grade, and re-exposure proportion (all $P<0.05$), whereas sex, age, animal type, and immunoglobulin use did not differ significantly (all $P>0.05$).

Conclusions: Rabies-exposure visits at this community clinic rose annually, were predominantly dog/cat-related, and showed an increasing share of grade III (severe) exposures with persistently low passive-immunization coverage (<30%). Children and head/face/neck exposures deserve attention. Strengthened health education, animal management, and standardized post-exposure management are needed.

Key words. Rabies, post-exposure prophylaxis, epidemiology, community health center, retrospective analysis.

Introduction.

Rabies is an ancient zoonosis caused by infection with the rabies virus [1]. It causes approximately 59,000 deaths worldwide each year, and the case fatality rate approaches 100% once the virus invades the central nervous system [2]. The disease is endemic in many countries, with the exception of island nations such as Australia and Antarctica [3], and is concentrated mainly in South and Southeast Asia and Africa [4]; about 95% of reported cases originate from Asia and Africa [5]. China is among the countries with a substantial rabies burden [6-8]. Reported rabies deaths in China numbered 111, 143, and 231 in 2023, 2024, and 2025, respectively [9], showing an upward trend. No effective treatment exists for rabies at present. After an animal bite or scratch, standardized wound care, rabies vaccination, and administration of passive immunizing agents are the effective means of prevention.

In recent years, the number of households keeping pets such as cats and rodents has increased, and the population exposed to rabies through injuries by these animals has remained high [10]. Emeishan City is located in the southwest of the Sichuan Basin, at the interface of plains and mountainous areas, where both domesticated and wild animals are abundant. The Shengli Subdistrict Community Health Center is the main institution providing post-exposure prophylaxis (PEP) for rabies exposures in Emeishan. To characterize the epidemiological profile of rabies-exposed individuals in Emeishan and their preventive management, and to inform local rabies control, we conducted a retrospective analysis of the rabies-clinic data from 2024 to 2025.

Materials and Methods.

Data source:

Data were obtained from the Sichuan Provincial Primary Healthcare Institution Management Information System and the Sichuan Provincial Immunization Information System.

Methods:

We collected epidemiological data on rabies-exposed individuals, including demographics, month and site of injury, animal species responsible, exposure grade, and preventive measures administered. A total of 4,109 rabies-exposure records were included in this study.

Statistical methods:

Categorical variables were described with frequencies and proportions. Distributions of categorical variables between 2024 and 2025 were compared using Pearson chi-square tests. Before testing, we verified that the expected frequency in every cell exceeded 5 to satisfy the applicability condition; 2x2 tables were additionally verified with Yates continuity correction. The significance level was set at alpha = 0.05 (two-sided). Because multiple variables were compared separately, raising a multiple-comparison concern, we relied primarily on nominal P values and interpreted conservatively those results approaching the significance threshold (age, animal species, and injury site). Analysis of passive immunizing-agent administration was restricted to the 2,414 grade III exposures with complete records.

Results.

Monthly and quarterly distribution:

In 2025, the clinic received 2,290 visits, an increase of 471 over the 1,819 visits in 2024, representing a year-on-year growth

of 25.89%. In 2024, visits peaked in June (239), followed by August (194) and July (192), with summer (June to August) forming the high season; the low seasons were November (101) and January (102), with fewer visits in winter. In 2025, the peak occurred in August (260), followed by October (259) and September (231), with late summer to autumn (August to October) as the high season, and the lowest month was January (97) (see Table 1 and Figure 1).

With respect to the injury-causing animal species by quarter (see Table 2 and Figure 2), dogs and cats dominated every quarter, together accounting for over 90% of injuries. The dog proportion declined steadily from 60.97% in Q1 to 47.67% in Q4, whereas the cat proportion rose from 32.96% to 44.99%; rodents, monkeys, and other animals each contributed less than 5% throughout.

Demographic characteristics:

In 2024, female visits accounted for 57.34%, and in 2025 for 58.08%, with a combined proportion of 57.75% across the two years; women exceeded men by about 15 percentage points. Children aged 0-10 years were the largest exposed group, ranking first in both years, with a combined proportion of 19.15%, close to one fifth of all visits. Middle-aged adults aged 31-60 years also accounted for a substantial share. Splitting this group into three bands, 31-40, 41-50, and 51-60 years, the proportions were

Table 1. *Monthly distribution of rabies-exposed individuals at the Shengli Subdistrict.*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	102 (5.61)	156 (8.58)	121 (6.65)	130 (7.15)	169 (9.29)	239 (13.14)	192 (10.56)	194 (10.67)	157 (8.63)	150 (8.25)	101 (5.55)	108 (5.94)
2025	193 (8.43)	97 (4.42)	138 (6.03)	161 (7.03)	195 (8.52)	174 (7.60)	193 (8.43)	260 (11.35)	231 (10.09)	259 (11.31)	199 (8.69)	190 (8.30)
Total	295 (7.18)	253 (6.16)	259 (6.30)	291 (7.08)	365 (8.86)	413 (10.05)	385 (9.37)	454 (11.05)	388 (9.44)	409 (9.95)	300 (7.30)	298 (7.25)
Notes: *Community Health Center, Emeishan, 2024-2025 [n (%)].*												

Table 2. *Quarterly distribution of injury-causing animal species, 2024-2025 [n (%)].*

Animal	Q1	Q2	Q3	Q4
Dog	492 (60.97)	620 (58.05)	632 (51.51)	480 (47.67)
Cat	266 (32.96)	382 (36.77)	501 (40.83)	453 (44.99)
Rodent	25 (3.10)	38 (3.56)	38 (3.10)	39 (3.87)
Monkey	12 (1.49)	9 (0.84)	36 (2.93)	24 (2.38)
Other	12 (1.49)	19 (1.78)	20 (1.63)	11 (1.09)
Total	807 (19.63)	1,068 (25.99)	1,227 (29.86)	1,007 (24.51)

Table 3. *Overall characteristics of rabies-exposed individuals, 2024-2025 [n (%)].*

Category	2024	2025	Total	χ^2	P
Sex				0.227	0.634
Male	776 (42.66)	960 (41.92)	1,736 (42.25)		
Female	1,043 (57.34)	1,330 (58.08)	2,373 (57.75)		
Age (years)				9.892	0.129
0-10	344 (18.91)	443 (19.34)	787 (19.15)		
46346	219 (12.04)	249 (10.87)	468 (11.39)		
21-30	246 (13.52)	307 (13.41)	553 (13.46)		
31-40	262 (14.40)	346 (15.11)	608 (14.80)		
41-50	284 (15.61)	299 (13.06)	583 (14.19)		
51-60	245 (13.47)	359 (15.68)	604 (14.70)		
>60	219 (12.04)	287 (12.53)	506 (12.31)		
Animal species				7.435	0.115
Dog	983 (54.04)	1,241 (54.19)	2,224 (54.13)		
Cat	693 (38.10)	909 (39.69)	1,602 (38.99)		
Rodent	65 (3.57)	75 (3.28)	140 (3.41)		
Monkey	46 (2.52)	35 (1.53)	81 (1.97)		
Other animals	32 (1.76)	30 (1.31)	62 (1.52)		
Injury site				13.804	0.008*
Upper limb	985 (54.15)	1,241 (54.19)	2,226 (54.17)		
Lower limb	454 (24.96)	489 (21.35)	943 (22.95)		
Head/face/neck	282 (15.50)	427 (18.65)	709 (17.25)		
Trunk	40 (2.20)	42 (1.83)	82 (2.00)		
Multiple sites	58 (3.19)	91 (3.97)	149 (3.63)		
Exposure grade				17.535	<0.001**
Grade II	758 (41.67)	808 (35.28)	1,566 (38.11)		
Grade III	1,061 (58.33)	1,482 (64.72)	2,543 (61.89)		
Notes: **, P<0.05; **, P<0.01. Pearson chi-square tests compared distributions between 2024 and 2025.*					

Table 4. *Post-exposure management among grade II and III exposures, 2024-2025 [n (%)].*

Category	2024	2025	Total	χ^2	P
First vs re-exposure				50.029	<0.001**
First exposure	1,615 (88.79)	1,848 (80.70)	3,463 (84.28)		
Re-exposure	204 (11.21)	442 (19.30)	646 (15.72)		
Rabies immunoglobulin (grade III)				0.888	0.346
Yes	288 (27.27)	394 (29.01)	682 (28.25)		
No	768 (72.73)	964 (70.99)	1,732 (71.75)		
Notes: **, P<0.01. Pearson chi-square tests compared distributions between 2024 and 2025.*					



Figure 1. *Monthly distribution of rabies-exposure visits at the Shengli Subdistrict Community Health Center, Emeishan, 2024–2025.Line plots show the monthly number of visits in 2024 (blue) and 2025 (orange). Visits peaked in June 2024 (239 cases) and August 2025 (260 cases); June–October formed the high season in both years, with a low in winter (January–February).*

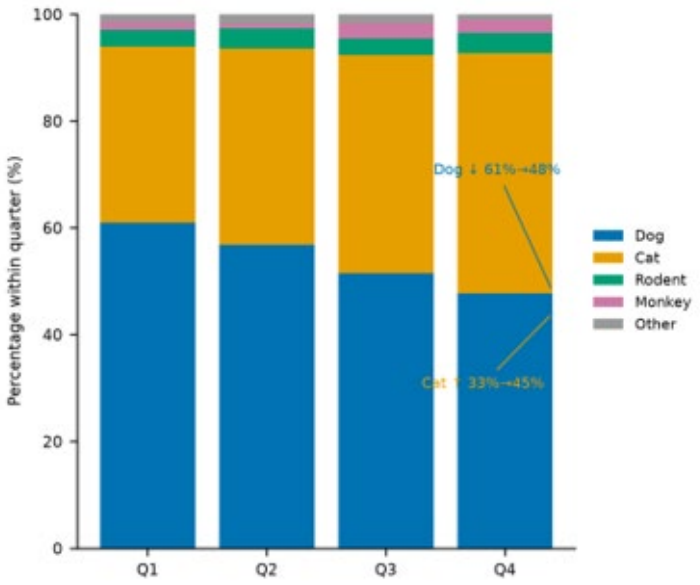


Figure 2. *Quarterly composition of injury-causing animal species, 2024–2025.100% stacked bars show the proportional composition within each quarter. Dogs and cats dominated every quarter (combined >90%). The dog proportion declined from 60.97% (Q1) to 47.67% (Q4), while the cat proportion rose from 32.96% to 44.99%; rodents, monkeys, and other animals accounted for <5% throughout.*

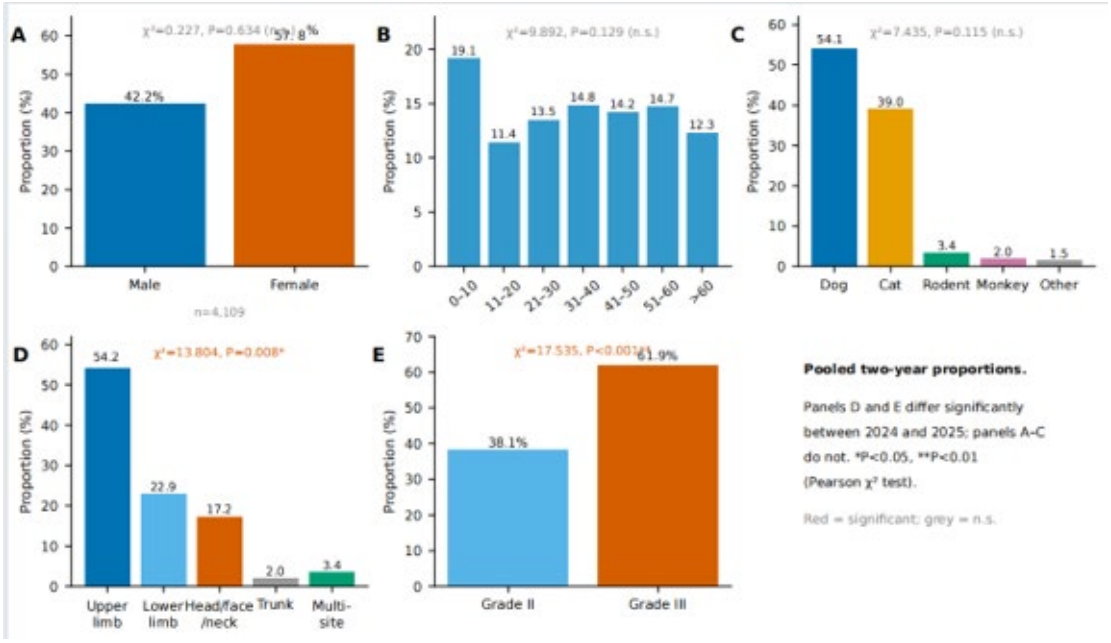


Figure 3. *Overall characteristics of rabies-exposed individuals, 2024–2025. Pooled (two-year) proportions are shown for sex (A), age groups (B), animal species causing injury (C), injury site (D), and exposure grade (E). Asterisks indicate a statistically significant difference between 2024 and 2025 (Pearson χ² test): *P<0.05 for injury site, P<0.01 for exposure grade. The distributions of sex, age, and animal species did not differ significantly between years (all P>0.05).*

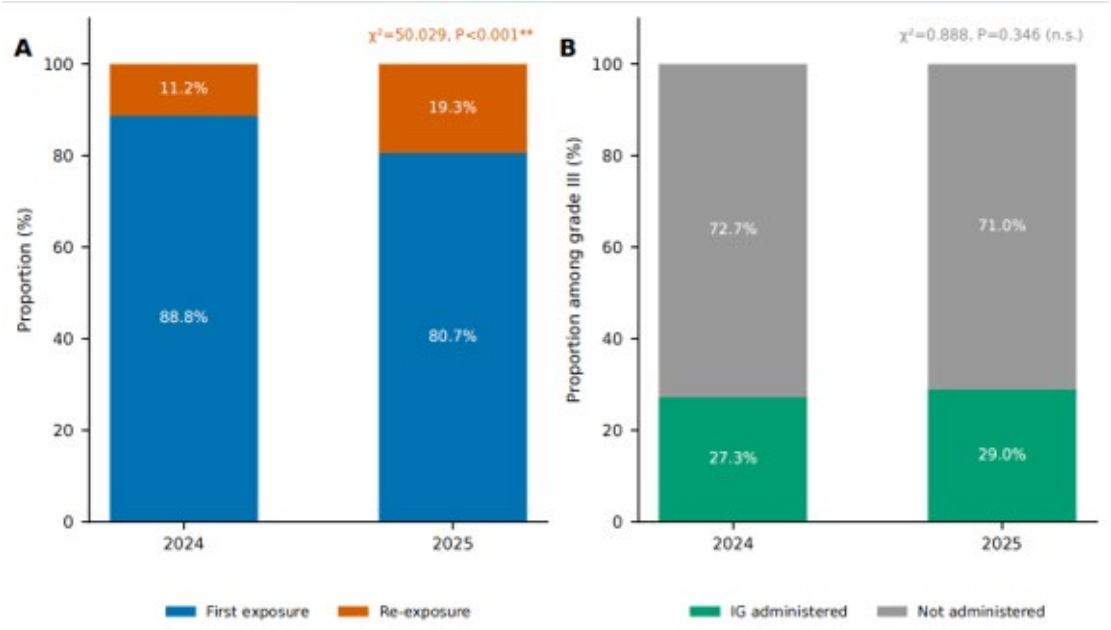


Figure 4. *Post-exposure management of grade II/III exposures, 2024–2025. Panel A shows the proportion of first versus re-exposure by year; re-exposure rose from 11.21% (2024) to 19.30% (2025), a significant increase (χ^2=50.029, P<0.001). Panel B shows rabies immunoglobulin (IG) administration among grade III exposures; coverage was only ~28% in both years (27.27% and 29.01%) and the annual difference was not significant (χ^2=0.888, P=0.346), meaning >70% of grade III exposures did not receive passive immunization.*

14.80%, 14.19%, and 14.70%, respectively, totalling 43.69%, representing another high-risk group for animal-related injury; adolescents aged 11-20 years had the lowest share, only 11.39% across the two years (see Table 3 and Figure 3).

Animal species causing injury:

Dogs and cats were the predominant sources of injury. Overall, across the two years, dog-related injuries accounted for 54.13% and cat-related injuries for 38.99%, summing to 93.12%. Dog-related cases ranked first throughout, with cats a close second. Among the remaining animals, rodents accounted for 3.41% and monkeys for 1.97%, ranking third and fourth, far below dogs and cats (see Table 3 and Figure 3).

Injury site, mechanism, and exposure grade:

The upper limbs were the most common injury site, at 54.15% in 2024 and 54.19% in 2025, with a two-year mean of 54.17%; more than half of all bites and scratches occurred on the upper limbs. The lower limbs were the second most common site, at 24.96% in 2024 and 21.35% in 2025, totalling 22.95%. The proportion of injuries to the head, face, and neck rose markedly, from 15.50% in 2024 to 18.65% in 2025 (a rise of 145 cases, or 51.42%), a notable increase. Grade III exposure was the dominant type seen at the clinic: 58.33% in 2024 and 64.72% in 2025, with a combined proportion of 61.89%, meaning over 60% of injuries were grade III. The annual differences in the distributions of injury site and exposure grade were both statistically significant (chi2 = 13.804, P = 0.008; chi2 = 17.535, P < 0.001) (see Table 3 and Figure 3).

Post-exposure management:

The proportion of re-exposures (requiring a booster dose) rose significantly, from 11.21% (204/1,819) in 2024 to 19.30% (442/2,290) in 2025, and the annual difference was statistically significant (chi2 = 50.029, P < 0.001). Among grade III exposures, the rabies immunoglobulin administration rates were 27.27% and 29.01% in 2024 and 2025, respectively, with a two-year average of only 28.25% (682/2,414); over 70% did not receive it. The annual difference in this administration rate was not statistically significant (chi2 = 0.888, P = 0.346) (see Table 4 and Figure 4). In summary, between 2024 and 2025 the annual distributions of sex, age, and animal species among rabies-exposed visitors were largely stable, whereas injury site, exposure grade, and re-exposure proportion differed significantly year to year.

Discussion.

From 2024 to 2025, the number of individuals receiving rabies PEP at the Shengli Subdistrict Community Health Center showed a year-on-year upward trend, with 4,109 cases in total over the two years and a 25.89% increase from 2024 to 2025, consistent with the overall rising trend of rabies exposures in China [8]. Exposures occurred throughout the year, with a peak from June to October (49.87%), similar to surveillance results from some regions of China [11,12]. This suggests that prevention education should be strengthened before summer and autumn, and that staffing, vaccine, and passive-immunizing-agent reserves at the rabies clinic should be prepared in advance.

The proportion of female visitors exceeded that of males, and the composition was largely consistent across the two years (see Section 3.2), possibly because women have more opportunities to keep and contact pets. Children aged 0-10 years had the highest visit proportion and ranked first in both years, likely related to their weak self-protection awareness and tendency to tease or feed animals; they are a key target for health education. Middle-aged adults aged 31-60 years together accounted for over 40%, representing another high-risk group.

Dogs and cats were the predominant injury-causing animals, with a stable composition across the two years (see Section 3.3). As pet keeping and abandonment increase, the number of stray dogs and cats grows, raising the risk of injury. The upper limbs were the most common injury site, consistent with people using their arms when contacting, feeding, or driving away animals. The proportion of head, face, and neck injuries rose from 15.50% in 2024 to 18.65% in 2025 (chi2 = 13.804, P = 0.008; see Section 3.4) and deserves attention. We recommend standardizing pet keeping and canine rabies vaccination, and using leashes and muzzles outdoors to avoid provoking animals.

Grade III exposure was the predominant type, and its proportion was higher in 2025 than in 2024 (chi2 = 17.535, P < 0.001; see Section 3.4), indicating an increase in severe exposures. According to the Specifications for Rabies Exposure Prophylaxis (2023 Edition), grade III exposures should receive rabies immunoglobulin. However, in our cohort only 28.25% (682/2,414) of grade III exposures were administered it, lower than the national survey level of 35% [13], with over 70% left unvaccinated, revealing a prominent hidden risk. Furthermore, the analysis of rabies immunoglobulin administration was restricted to the 2,414 cases with complete records; the missingness rate was uneven between the two years (approximately 0.5% in 2024 versus 8.4% in 2025), which could introduce bias into the year-over-year comparison and should be noted as a limitation. The re-exposure proportion rose from 11.21% in 2024 to 19.30% in 2025 (chi2 = 50.029, P < 0.001; see Section 3.5), reflecting increased awareness of re-vaccination, yet passive immunizing-agent use still needs improvement.

Conclusion.

In light of the above annual comparisons and population-characteristic analysis, we propose the following prevention and control recommendations. Health education on rabies and animal management should be strengthened, and vaccines together with passive immunizing agents should be covered by medical insurance or accidental-injury insurance to lower the cost barrier, while training of primary-care physicians in standardized management should be reinforced. This study is a single-center retrospective analysis based on primary healthcare information systems, and is subject to certain recording bias and possible undercounting of mild exposures that did not seek care; caution is needed when generalizing the conclusions. Multicenter, prospective surveillance should be conducted in the future to validate these trends.

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