



MASS队列：多中心纵向前瞻性研究微生物组在重症肺炎及宿主易感性中的作用

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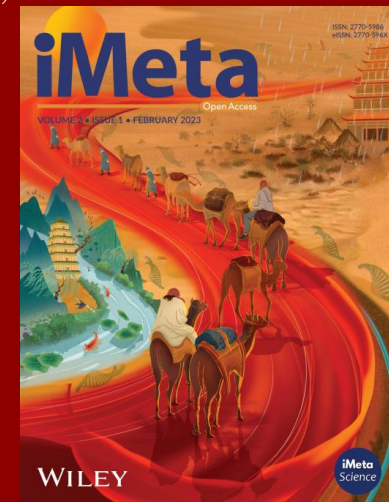
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¹⁶兰溪市中医院

¹⁷温州市中心医院

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Xin Wei, Li Guo, Hongliu Cai, Silan Gu, Lingling Tang, Yuxin Leng, Minghui Cheng, Guojun He, Yijiao Han, Xindie Ren, Baoyue Lin, Longxian Lv, Huanzhang Shao, Mingqiang Wang, Hongyu Wang, Dan Dang, Shengfeng Wang, Nan Wang, Peng Shen, Qianqian Wang, Yinghe Xu, Yongpo Jiang, Ning Zhang, Xuwei He, Xuntao Deng, Muhua Dai, Lin Zhong, Yonghui Xiong, Yujie Pan, Kankai Tang, Fengqi Liu, Bin Yang, Lili Ren, Jianwei Wang, Chao Jiang, Lingtong Huang. 2024.

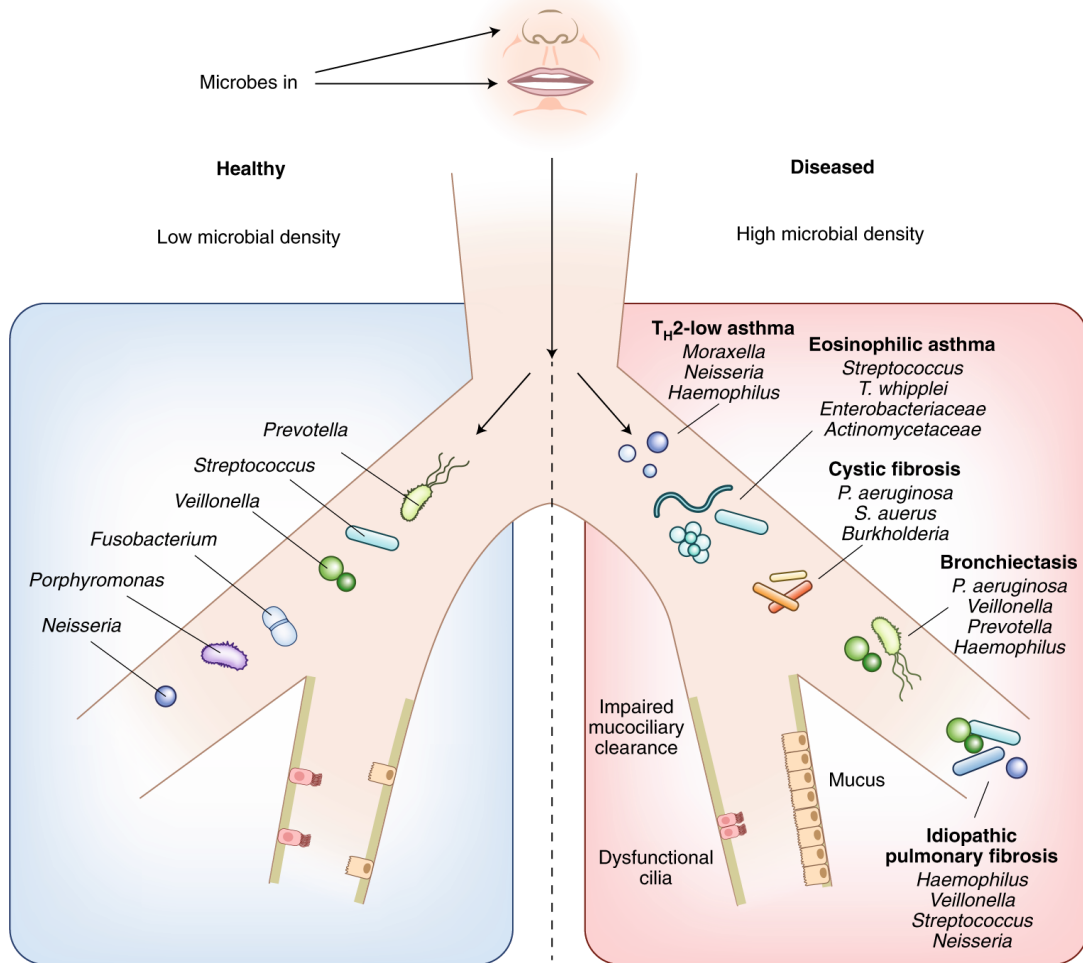
MASS cohort: multicenter, longitudinal, and prospective study of the role of microbiome in severe pneumonia and host susceptibility. *iMeta* 3: e218.

<https://doi.org/10.1002/imt2.218>



背景：肺部微生物组与重症肺炎息息相关

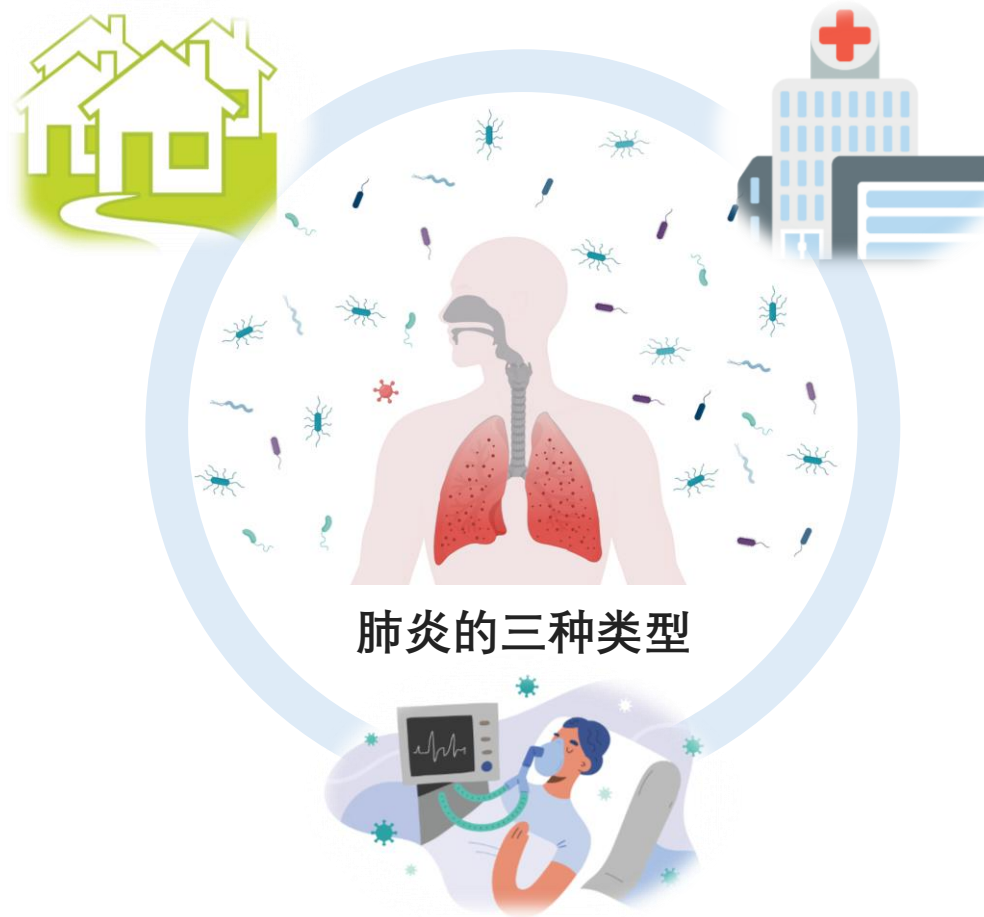
- 肺部微生物组影响呼吸系统健康



Wypych et al. Nat Immunol, 2019

社区获得性肺炎 (CAP)

医院获得性肺炎 (HAP)



呼吸机相关肺炎 (VAP)

背景：大规模重症疾病研究的范式——荷兰MARS队列

- MARS队列招募来自荷兰ICU的2000多名败血症患者展开多角度研究

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Molecular Diagnosis and Risk Stratification of Sepsis (MARS)


ClinicalTrials.gov ID ⓘ NCT01905033

Sponsor ⓘ Academisch Medisch Centrum - Universiteit van Amsterdam (AMC-UvA)


Information provided by ⓘ T. van der Poll, Academisch Medisch Centrum - Universiteit



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 **RESEARCH**


The attributable mortality of delirium in critically ill patients: prospective cohort study

 OPEN ACCESS

Peter M C Klein Klouwenberg *PhD student*¹, Irene J Zaal *PhD student*¹, Cristian Spitoni *statistician*², David S Y Ong *PhD student*¹, Arendina W van der Kooi *clinical technologist*¹, Marc J M Bonten *epidemiologist*³, Arjen J C Slooter *neurologist-intensivist*¹, Olaf L Cremer *anaesthesiologist-intensivist*¹

Original Investigation | Caring for the Critically Ill Patient

April 12, 2016



Incidence, Risk Factors, and Attributable Mortality of Secondary Infections in the Intensive Care Unit After Admission for Sepsis

Lonneke A. van Vught, MD¹; Peter M. C. Klein Klouwenberg, MD, PharmD, PhD^{2,3,4}; Cristian Spitoni, PhD⁵; Brendon P. Scicluna, PhD^{1,6}; Maryse A. Wiewel, MD¹; Janneke Horn, MD, PhD⁷; Marcus J. Schultz, MD, PhD⁷; Peter Nürnberg, PhD⁸; Marc J. M. Bonten, MD, PhD^{3,4}; Olaf L. Cremer, MD, PhD²; Tom van der Poll, MD, PhD¹; for the MARS Consortium

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JAMA. 2016;315(14):1469-1479. doi:10.1001/jama.2016.2691

THE LANCET
Respiratory Medicine

ARTICLES | VOLUME 5, ISSUE 10, P816-826, OCTOBER 2017 

Classification of patients with sepsis according to blood genomic endotype: a prospective cohort study

Dr Brendon P Scicluna, PhD  • Lonneke A van Vught, MD • Prof Aeilko H Zwinderman, PhD • Maryse A Wiewel, MD • Emma E Davenport, DPhil • Katie L Burnham, MGen • Prof Peter Nürnberg, PhD • Prof Marcus J Schultz, MD • Janneke Horn, MD • Olaf L Cremer, MD • Prof Marc J Bonten, MD • Prof Charles J Hinds, MD • Prof Hector R Wong, MD • Prof Julian C Knight, DPhil • Prof Tom van der Poll, MD • on behalf of the MARS consortium [†] • [Show less](#) • [Show footnotes](#)

Published: August 29, 2017 • DOI: [https://doi.org/10.1016/S2213-2600\(17\)30294-1](https://doi.org/10.1016/S2213-2600(17)30294-1) •  Check for updates



背景：肺部微生物组研究的局限性

American Journal of Respiratory and Critical Care Medicine
Table of Contents
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ORIGINAL ARTICLE

Lung Microbiota Predict Clinical Outcomes in Critically Ill Patients

ORIGINAL ARTICLE

Sputum Microbiome Is Associated with 1-Year Mortality after Chronic Obstructive Pulmonary Disease Hospitalizations

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The sputum microbiome and clinical outcomes in patients with bronchiectasis: a prospective observational study

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- 上呼吸道微生物污染

nature medicine

Article <https://doi.org/10.1038/s41591-023-02617-9>

Robust airway microbiome signatures in acute respiratory failure and hospital-acquired pneumonia

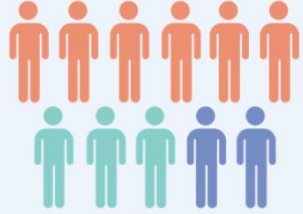
nature medicine

Article <https://doi.org/10.1038/s41591-023-02424-2>

The airway microbiome mediates the interaction between environmental exposure and respiratory health in humans

简介

MASS cohort



19 hospitals across
10 cities in 3 provinces



2000 ICU patients
with severe pneumonia

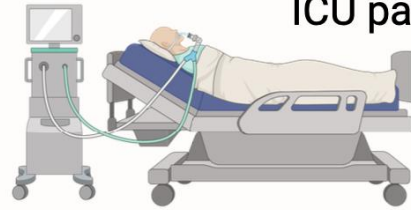


Multicenter study
in China

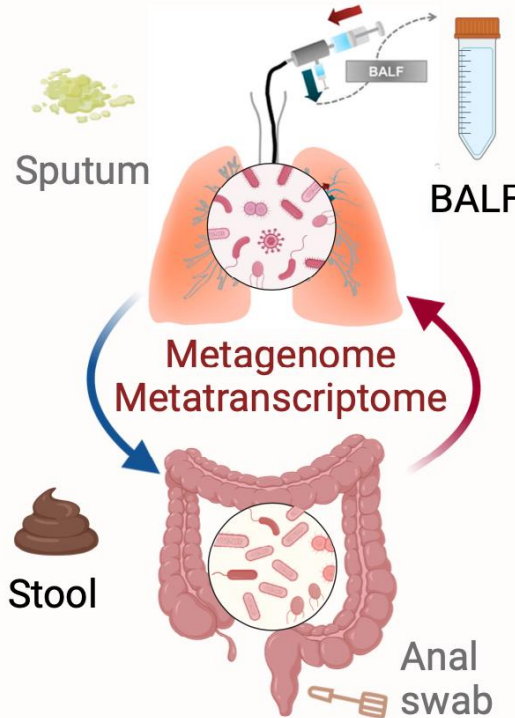
ZJ cohort Non-ZJ cohort



ICU patient



Longitudinal biological samples collection



Detailed clinical data

Basic info



Drug usage



Medical history



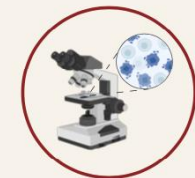
Complications



Imaging

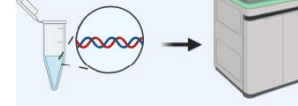


Laboratory tests



Sequencing

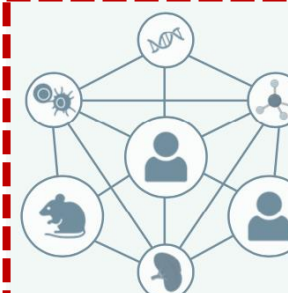
DNA/RNA
extraction



Host transcriptome



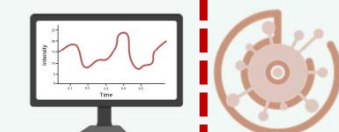
Analyzing



Validation



Application

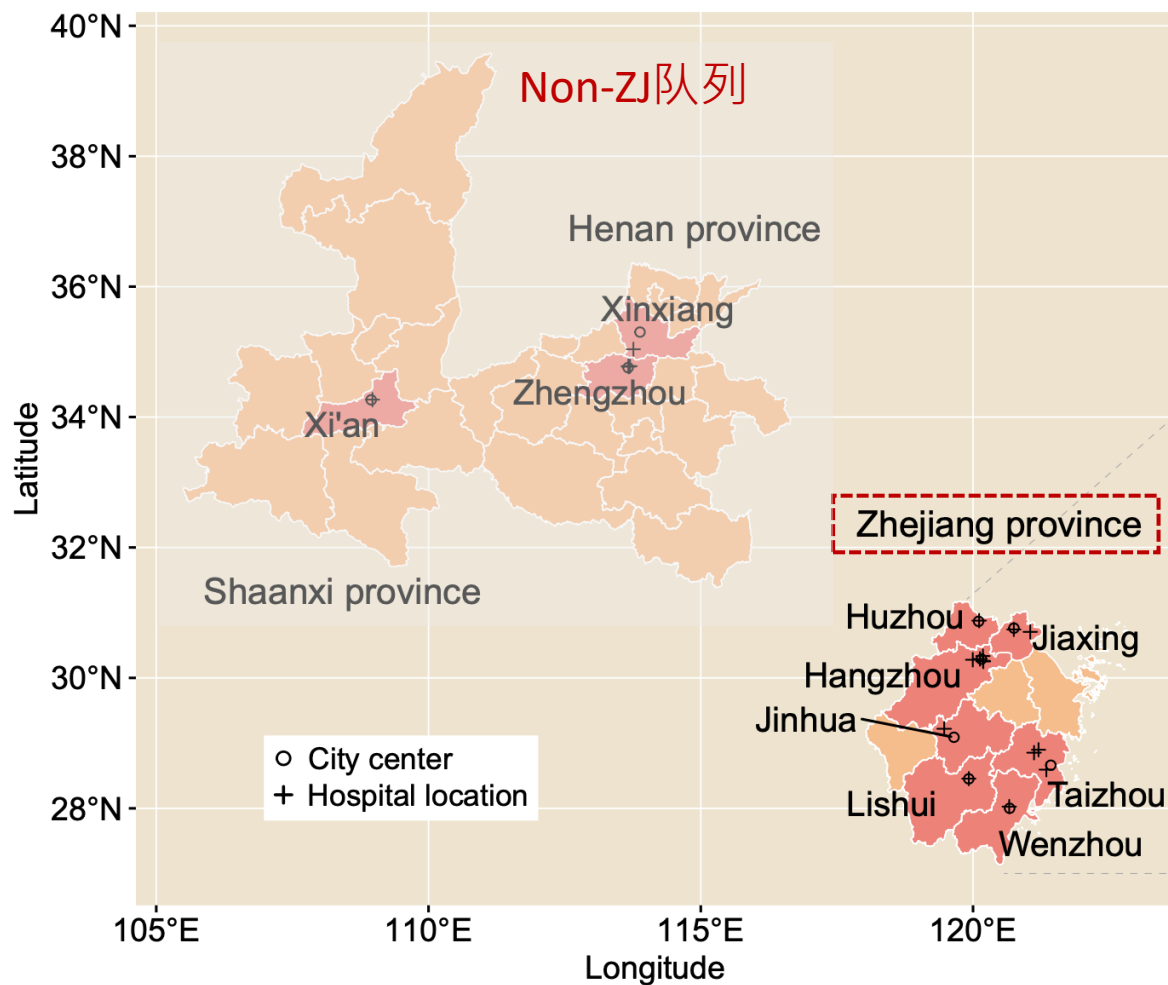




19家医疗中心的地理分布

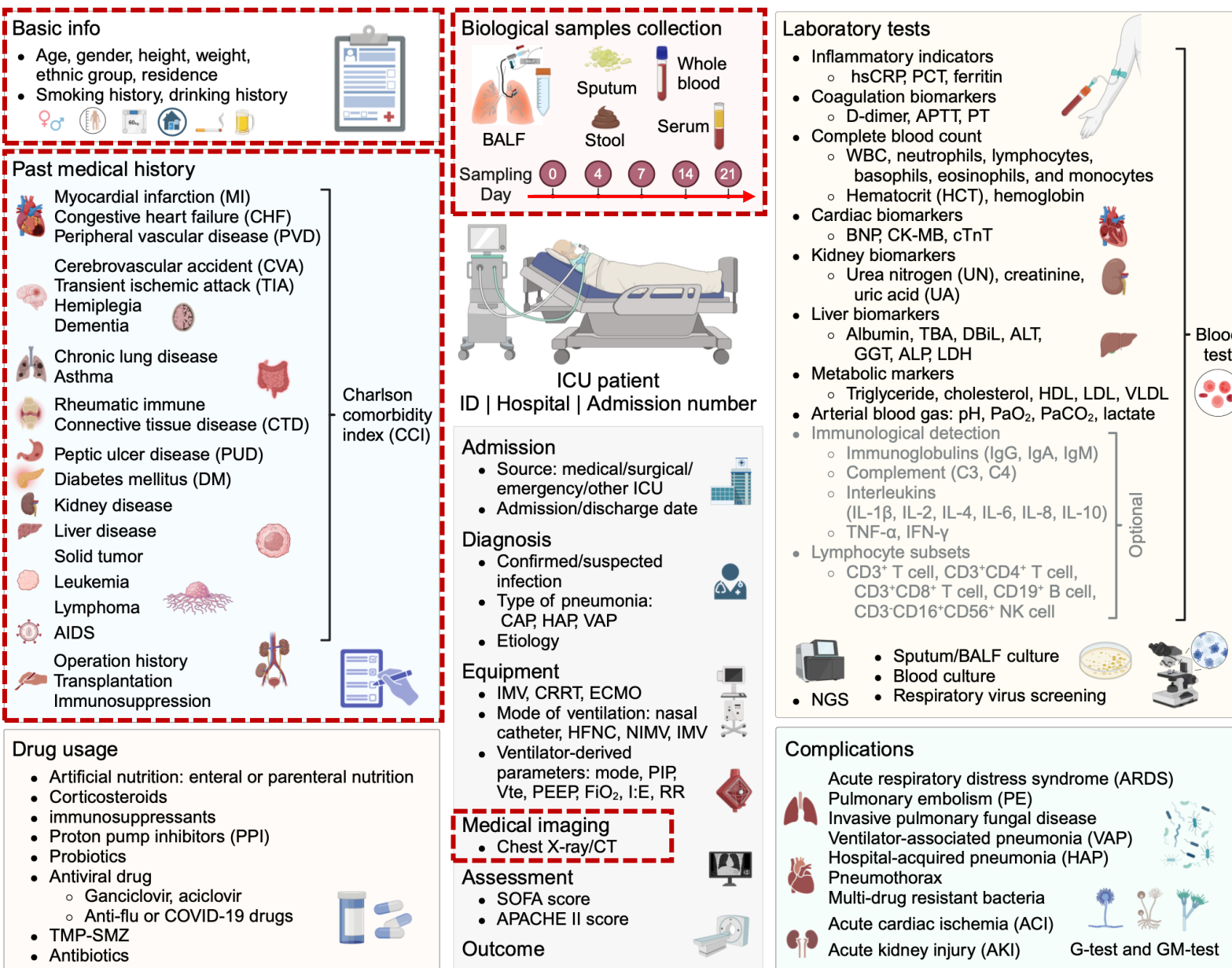
- 来自19家医疗中心的26个ICU参与MASS队列研究。

19家医疗中心位于三个省十个城市

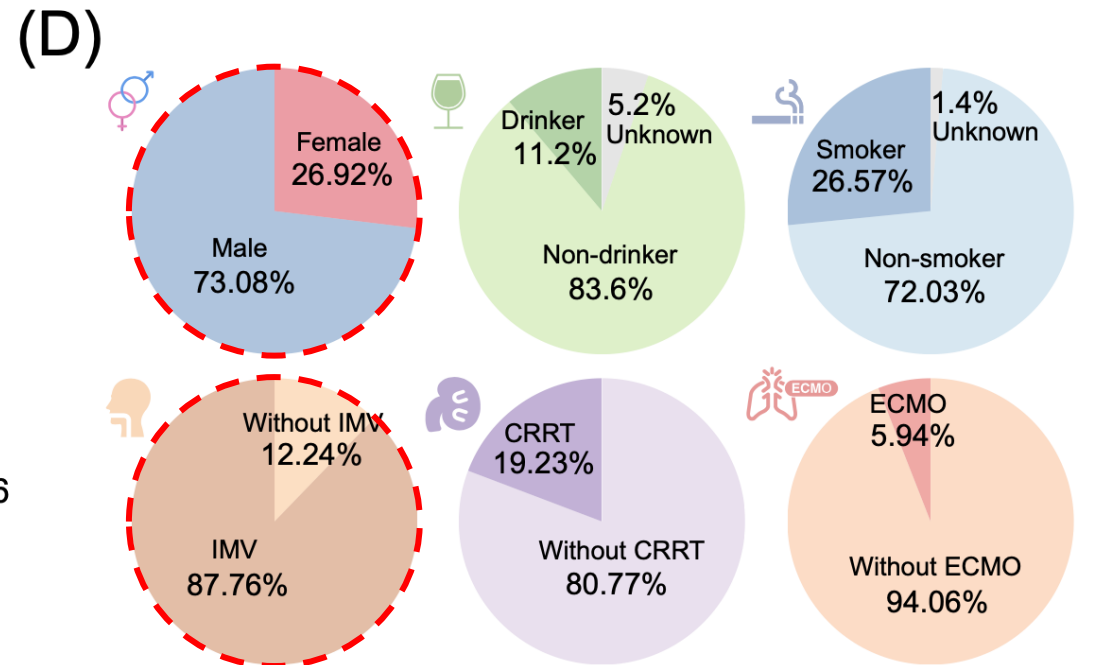
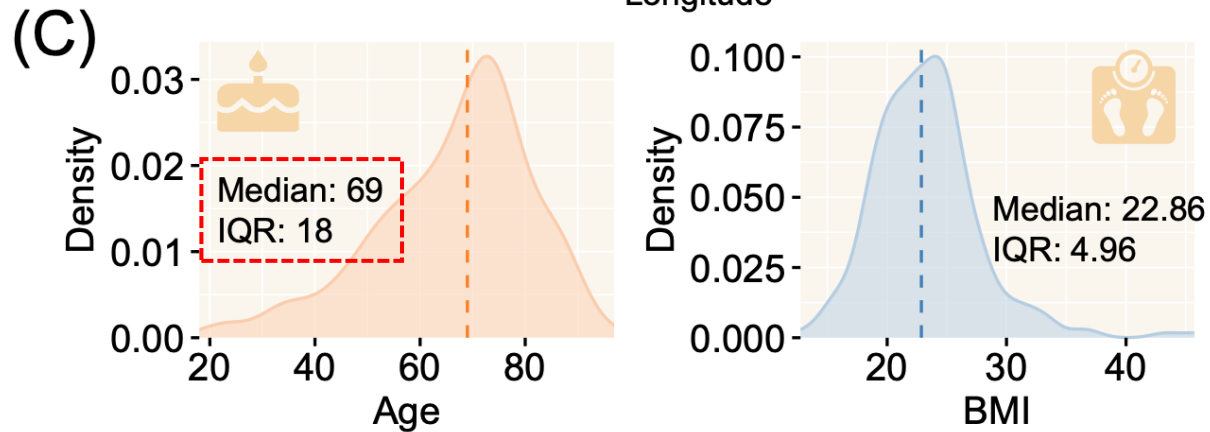
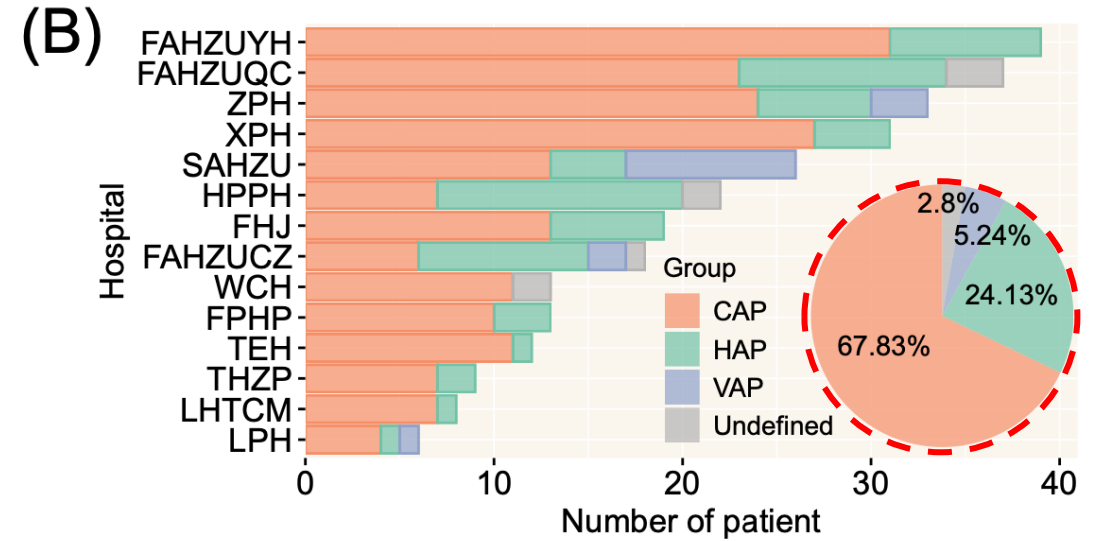
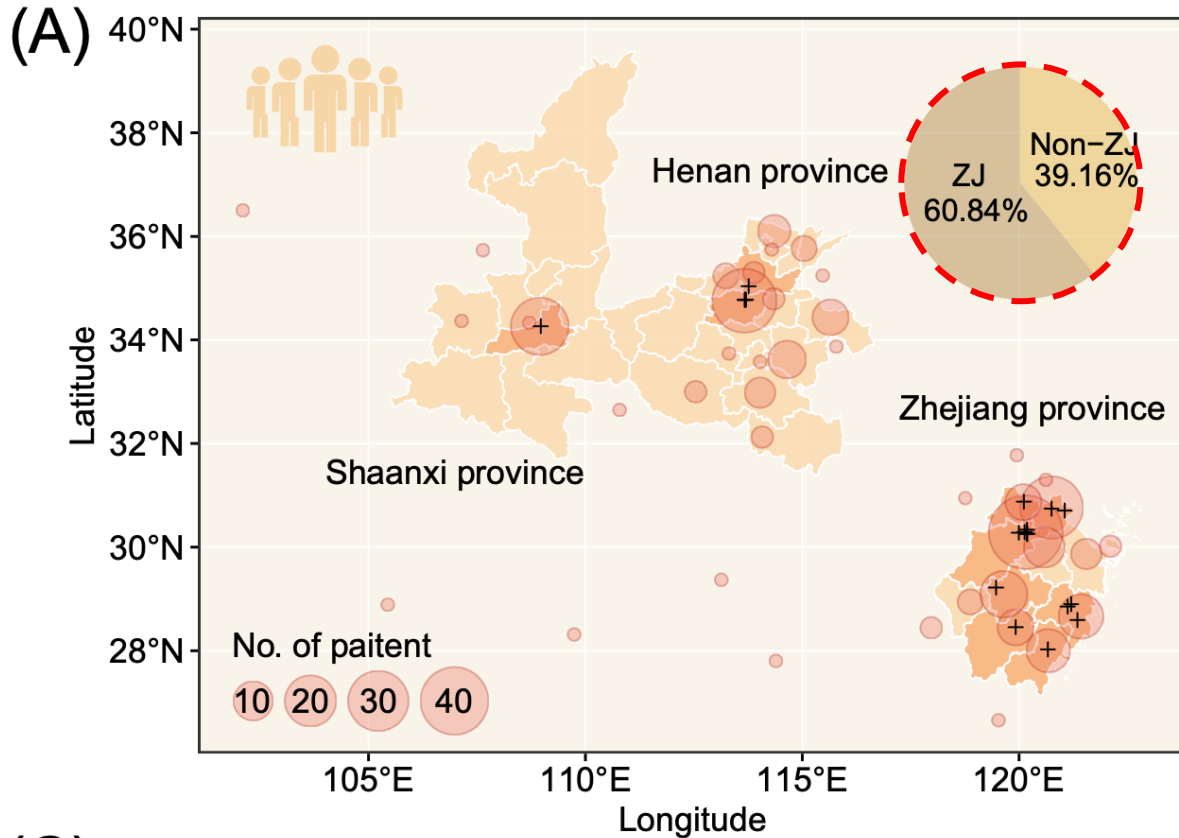


ZJ队列

临床资料和生物样本收集概览

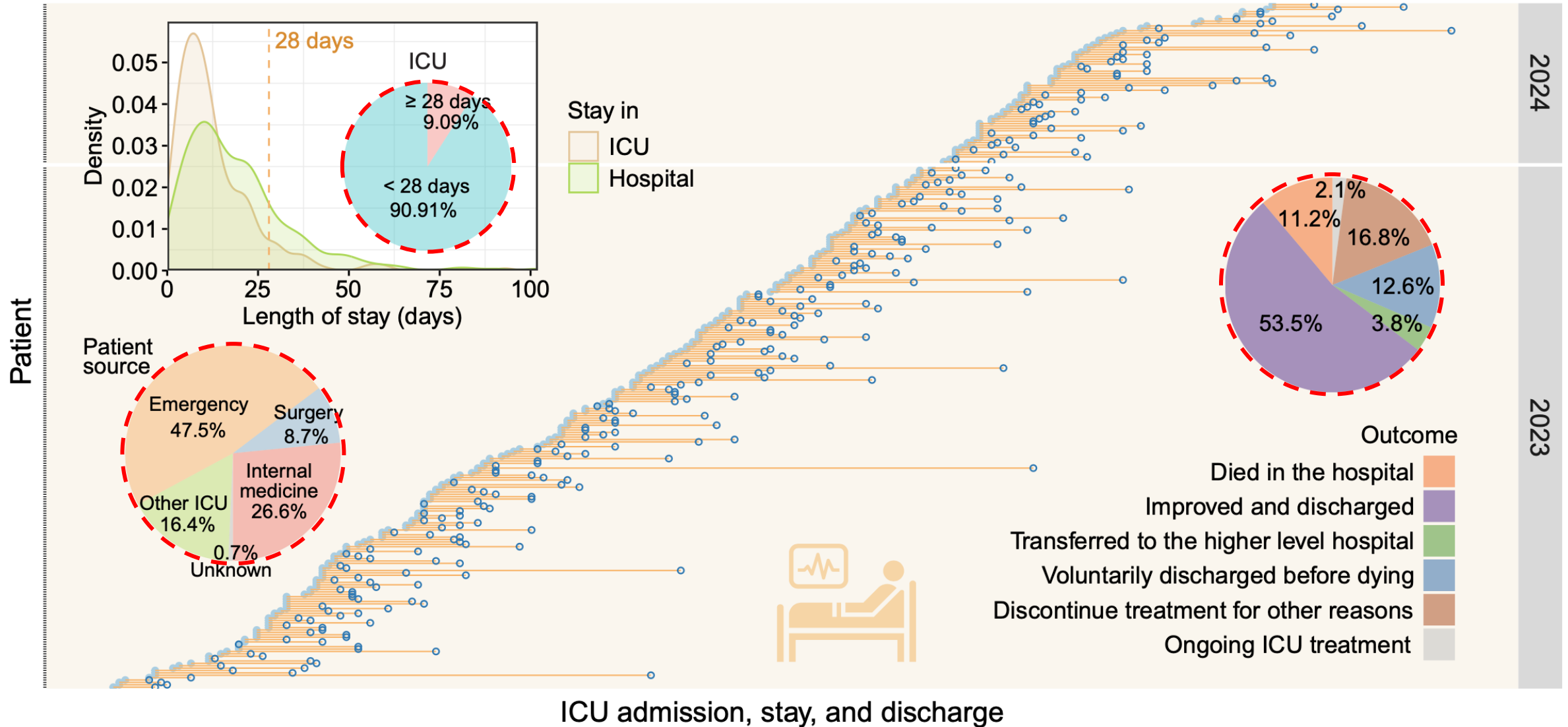


患者招募进展



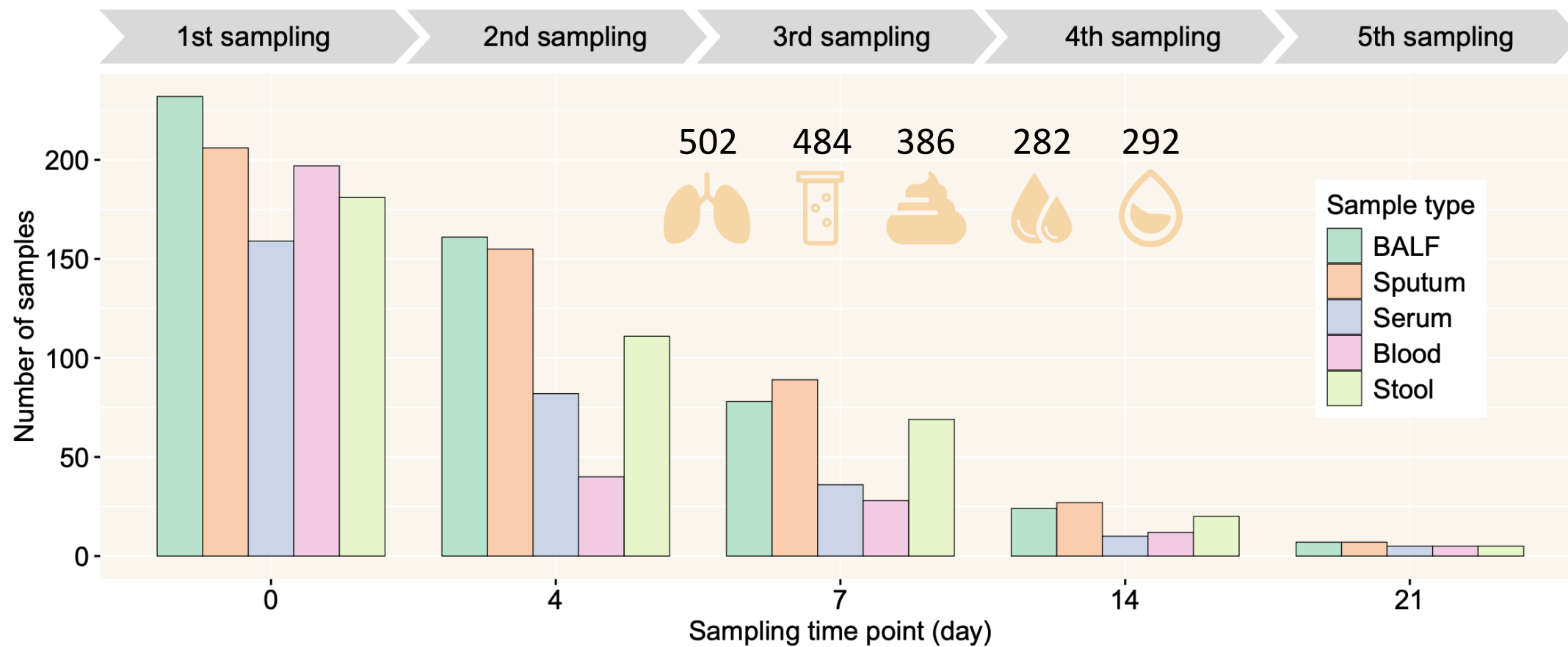


患者招募进展





生物样本采集进展



参与MASS队列研究的单位



医疗中心

科研机构





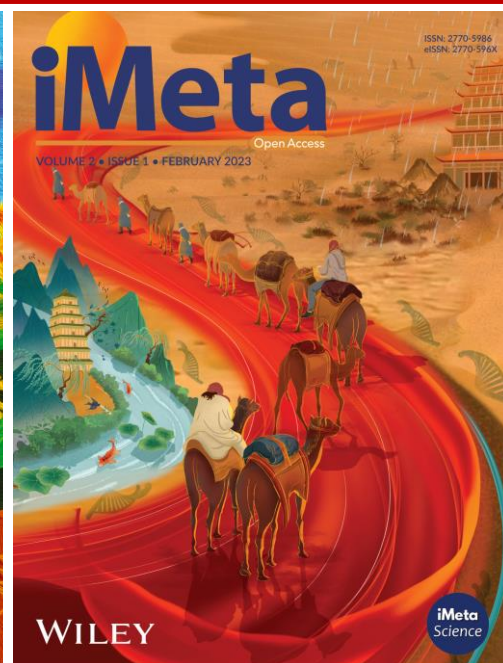
总结

- ❑ MASS队列计划招募来自国内3个省、10个城市、19家医院的2000名ICU重症肺炎患者。
- ❑ 在患者ICU住院期间，纵向收集支气管肺泡灌洗液（BALF）、痰液、粪便和血液等多种样本。
- ❑ 该队列将深度宏基因组学和转录组学与详尽的临床数据相结合，旨在揭示肺部和肠道微生物组的动态及其与重症肺炎和宿主易感性的关联。

Xin Wei, Li Guo, Hongliu Cai, Silan Gu, Lingling Tang, Yuxin Leng, Minghui Cheng, Guojun He, Yijiao Han, Xindie Ren, Baoyue Lin, Longxian Lv, Huanzhang Shao, Mingqiang Wang, Hongyu Wang, Dan Dang, Shengfeng Wang, Nan Wang, Peng Shen, Qianqian Wang, Yinghe Xu, Yongpo Jiang, Ning Zhang, Xuwei He, Xuntao Deng, Muhua Dai, Lin Zhong, Yonghui Xiong, Yujie Pan, Kankai Tang, Fengqi Liu, Bin Yang, Lili Ren, Jianwei Wang, Chao Jiang, Lingtong Huang. 2024.

MASS cohort: multicenter, longitudinal, and prospective study of the role of microbiome in severe pneumonia and host susceptibility. *iMeta* 3: e218.

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