

总主编 郝长江 国林祥

21世纪高等医学英语系列教材

*Medical  
English Writing*

# 实用医学英语写作

主 编 国林祥 武清宇



中国海洋大学出版社  
China Ocean University Press

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# 前言

随着我国改革开放步伐的不断加快，在举国上下实现伟大的中国梦的进程中，大学英语教学的重点已经发展到更加重视专业英语教学的新阶段。这既是大势所趋，也是历史必然。为进一步适应高等医学英语教学的新需求，《实用医学英语写作》的问世便顺理成章了。

《实用医学英语写作》属“21世纪高等医学英语系列教材”之列。读者对象是医学类各专业高年级本科及研究生。

对母语是汉语的中国学生来说，从本质上讲英语写作不是写作过程而是翻译过程。于是，文化差异便成为英语写作过程中必须首要关注和妥善解决的问题，也就是要充分注意汉语的概括性和英语的表述性这两个鲜明的特点。比如要把“健康从早餐开始”翻译成英语就不能译成“Health Begins From Breakfast”，而译成“The Importance of Breakfast”更贴切。《实用医学英语写作》以这样的一个概念作为主线，贯穿全书，旨在切实有效地提高读者的英语写作能力。

语言的学习和运用是一个复杂的过程，是学与用相互促进的过程，更是文化交流的过程，是进一步体会、理解母语的优美准确、丰富的过程，也是更深刻领悟外国语特点和本质的过程。希望本书能让您受益。

编者

2013年春

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# 第一章 研究论文

医学科技论文的格式和要求，是临床以及医学科研工作者应该了解和掌握的基本知识。英文医学论文包括各种文体的文章，如论著（Original articles）、综述（Reviews）、述评（Comments）、编者按（Editorials）和病例报告（Case reports）等。

在向某个期刊投稿时，应首先了解该期刊对收录论文所要求的格式，即对论文各部分的写作要求。为了规范各种期刊收录论文的格式，国际医学杂志编辑委员会（The International Committee of Medical Journal Editors, ICMJE）专门制订了《生物医学期刊投稿的统一要求》（The Uniform Requirements for Manuscripts Submitted to Biomedical Journals），国际上已有 500 家生物医学杂志采用了该统一要求。

## 1.1 生物医学论文的基本格式

根据国际医学杂志编辑委员会 2010 年修订的《生物医学期刊投稿的统一要求》，用于投稿的生物医学科研论文（以下简称“论文”）包括以下部分：标题页（Title Page）、摘要和关键词（Abstract and Key Words）、引言（Introduction）、材料与方法（Materials and Methods）、结果（Results）、讨论（Discussion）、致谢（Acknowledgments）、参考文献（References）、图例（Legends）、插图（Figures）、表格（Tables）、照片和说明（Plates and Explanations）等。

下面以发表在《新英格兰医学杂志》（*N Engl J Med* 2013; 368: 425-435）上的一篇文章为例，分别介绍论文各部分的基本内容和格式要求。

论文内容	格式说明
Antibiotics as Part of the Management of Severe Acute Malnutrition	论文标题
Indi Trehan, M.D., M.P.H., D.T.M.&H., Hayley S. Goldbach, Sc.B., Lacey N. LaGrone, M.D., Guthrie J. Meuli, B.S., Richard J. Wang, M.D., Kenneth M. Maleta, M.B., B.S., Ph.D., and Mark J. Manary, M.D.	每位作者的姓名和最高学位
From the Department of Pediatrics, Washington University in St. Louis, St. Louis(I.T., G.J.M., M.J.M.); the Departments of Paediatrics and Child Health (I.T.) and Community Health (K.M.M., M.J.M.),University of Malawi, Blantyre; Perelman School of Medicine at the University of Pennsylvania, Philadelphia (H.S.G.); the Department of Surgery, University of Washington,	每位作者的工作单位（括号中是作者姓名首字母缩写）



<p>Seattle (L.N.L.); the Department of Medicine, Weill Cornell Medical College, Cornell University, New York (R.J.W.); and the U.S. Department of Agriculture/Agricultural Research Service Children's Nutrition Research Center, Baylor College of Medicine, Houston (M.J.M.).</p>	
<p>Address reprint requests to Dr. Manary at the Department of Pediatrics, Washington University in St. Louis, 1 Children's Place, Campus Box 8116, St. Louis, MO 63110, or at manary@kids.wustl.edu.</p>	<p>论文单行本的联系人名及地址</p>
<p><b>Abstract</b></p>	<p><b>论文摘要</b></p>
<p><b>BACKGROUND</b> Severe acute malnutrition contributes to 1 million deaths among children annually. Adding routine antibiotic agents to nutritional therapy may increase recovery rates and decrease mortality among children with severe acute malnutrition treated in the community.</p>	<p>研究背景： 介绍背景，说明研究或调查的目的</p>
<p><b>METHODS</b> In this randomized, double-blind, placebo-controlled trial, we randomly assigned Malawian children, 6 to 59 months of age, with severe acute malnutrition to receive amoxicillin, cef di nir, or placebo for 7 days in addition to ready-to-use therapeutic food for the outpatient treatment of uncomplicated severe acute malnutrition. The primary outcomes were the rate of nutritional recovery and the mortality rate.</p>	<p>研究方法： 基本研究步骤、研究对象的选择、观察和分析方法</p>
<p><b>RESULTS</b> A total of 2,767 children with severe acute malnutrition were enrolled. In the amoxicillin, cef di nir, and placebo groups, 88.7%, 90.9%, and 85.1% of the children recovered, respectively (relative risk of treatment failure with placebo vs. amoxicillin, 1.32; 95% confidence interval [CI], 1.04 to 1.68; relative risk with placebo vs. cef di nir, 1.64; 95% CI, 1.27 to 2.11). The mortality rates for the three groups were 4.8%, 4.1%, and 7.4%, respectively (relative risk of death with placebo vs. amoxicillin, 1.55; 95% CI, 1.07 to 2.24; relative risk with placebo vs. cef di nir, 1.80; 95% CI, 1.22 to 2.64). Among children who recovered, the rate of weight gain was increased among those who received antibiotics. No interaction between type of severe acute malnutrition and intervention group was observed for either the rate of nutritional recovery or the mortality rate.</p>	<p>研究结果： 陈述主要结果，重点说明特殊数据和统计学意义</p>
<p><b>CONCLUSIONS</b> The addition of antibiotics to therapeutic regimens for uncomplicated severe acute malnutrition was associated with a significant improvement in recovery and mortality rates.</p>	<p>研究结论</p>

(Funded by the Hickey Family Foundation and others; ClinicalTrials.gov number, NCT01000298.)	资金来源; ClinicalTrials.gov 网站数据库临床试验编号
( Text )	(正文)
<p>The contribution of severe acute malnutrition to the overall burden of childhood morbidity and mortality is enormous, with more than 20 million children with severe wasting worldwide,<sup>1</sup> an untold number with kwashiorkor, and case fatality rates among hospitalized children that are as high as 50%.<sup>1,2</sup> For decades, the primary management for severe acute malnutrition was based on inpatient rehabilitation with fortified milk formulas.<sup>3</sup> However, international consensus guidelines now recommend the use of ready-to-use therapeutic food (RUTF) — usually a fortified spread consisting of peanut paste, milk powder, oil, sugar, and a micronutrient supplement — in outpatient settings as the preferred management for uncomplicated cases of severe acute malnutrition.<sup>4</sup> Despite the markedly better outcomes observed with this revised outpatient regimen,<sup>5</sup> 10 to 15% of children still do not recover, even in the context of rigorously controlled clinical trials. Even modest improvements in recovery and mortality rates could mean thousands of lives saved annually.</p>	<p>引言部分: 研究背景; 研究意义及必要性</p>
<p>Many studies,<sup>6-15</sup> but not all,<sup>16,17</sup> have shown a high prevalence of clinically significant infections among children hospitalized for severe malnutrition. This observation has led to treatment guidelines recommending the use of routine antibiotic agents even for children treated as outpatients,<sup>4</sup> although outpatients are presumably much less likely to have a systemic infection than are patients with complicated cases that require inpatient care. This recommendation for the use of routine antibiotics is based on expert opinion and has not been directly tested in a clinical trial<sup>18</sup>; and observational data suggest that antibiotics are unnecessary and perhaps even harmful in children with uncomplicated severe acute malnutrition (i.e., children with good appetite and no clinical signs of sepsis).<sup>19</sup></p>	<p>相关研究进展</p>
<p>Most children with severe acute malnutrition can now be treated in rural health posts throughout the developing world.<sup>20,21</sup> Providing antibiotic therapy in addition to RUTF for all malnourished children in this setting would not only be complex and costly but arguably unnecessary or even harmful.<sup>19</sup> We conducted a prospective clinical trial to determine whether the routine administration of oral antibiotics as part of the outpatient management of severe acute malnutrition in children in Malawi was associated with improved outcomes. Rural Malawi is representative of agrarian sub-Saharan Africa and populated primarily by subsistence farmers.<sup>22</sup> An estimated 11% of the adult population in Malawi is infected with the human immunodeficiency virus (HIV), and 53% of the children are stunted (height-for-age z score of less than -2).<sup>23</sup></p>	<p>研究对象及研究目的</p>

METHODS	方法
<p><b>STUDY POPULATION AND ELIGIBILITY</b></p> <p>We enrolled children from December 2009 through January 2011 at 18 feeding clinics in rural Malawi. Each child's weight, length, and mid-upper-arm circumference were measured. Children who were 6 to 59 months of age, with edema (indicative of kwashiorkor), a weight-for-height z score of less than -3 (indicative of marasmus),<sup>24</sup> or both (marasmic kwashiorkor), were eligible for enrollment. Each eligible child was given a 30-g test feeding of RUTF<sup>25</sup> under the supervision of a nurse to verify that the child was an appropriate candidate for outpatient therapy. Children who were too ill to consume the test dose in the clinic were hospitalized for inpatient management. Detailed descriptions of the study methods are provided in the Supplementary Appendix and the study protocol, both of which are available with the full text of this article at NEJM.org.</p>	<p>研究人群及纳入标准</p>
<p><b>STUDY OVERSIGHT</b></p> <p>The study was approved by ethics boards of the University of Malawi, Washington University in St. Louis, and the Malawi government. A data and safety monitoring board monitored adverse events and interim study outcomes. Caretakers of eligible children provided informed oral and written consent before enrollment. Antibiotics were purchased at cost from the St. Louis Children's Hospital Pharmacy. RUTF was purchased at cost from Project Peanut Butter, which is based in Blantyre, Malawi. The first and last authors vouch for the accuracy and completeness of the data and analyses reported, as well as the fidelity of the report to the study protocol.</p>	<p>研究监督： 医院伦理委员会的同意 意见、患者知情同意及 其他相关情况</p>
<p><b>STUDY DESIGN AND INTERVENTIONS</b></p> <p>This randomized, double-blind, placebo-controlled clinical trial compared nutritional and mortality outcomes among children with uncomplicated severe acute malnutrition who received treatment as outpatients with or without antibiotics. All children received standardized counseling and RUTF that provided approximately 175 kcal per kilogram of body weight per day. One group received 80 to 90 mg of amoxicillin suspension per kilogram per day, divided into two daily doses; the second group received approximately 14 mg of cef di nir suspension per kilogram per day, divided into two daily doses. A suspension of 250 mg of amoxicillin per 5 ml was used, and the dose to be given to each child was based on a rounded amount that could be given by the field research pharmacist using the markings on a plastic syringe; a similar rounding of medication dose was used for cef di nir. The control group received placebo twice daily. Caretakers were instructed to administer the study drug in addition to RUTF during the initial 7 days of therapy.</p>	<p>研究设计及干预方法</p>

### STUDY PROCEDURES

Participants were assigned to their study group when caregivers drew an opaque envelope containing one of nine coded letters corresponding to one of the three intervention groups. Caregivers and study personnel involved in clinical assessments and data analysis were unaware of the intervention assignments. Medications and placebo were distributed in opaque plastic bottles, with a plastic syringe marked with the appropriate dose for the child. After distribution of the study interventions, nurses instructed each caretaker in the use of the syringe to give the study medications and supervised the administration of the first dose in the clinic.

After enrollment and caretaker instruction, each child was discharged home with the assigned study medication and a 2-week supply of RUTF.<sup>25</sup> If the household included a healthy child who was close in age to the participant and with whom the food might be shared, an extra allotment of RUTF was provided. Children were scheduled for follow-up visits at 2-week intervals, at which time anthropometric measurements were repeated; caretakers were also asked about the child's interim history and adherence to the assigned intervention.

Children who continued to have bipedal pitting edema or a weight-for-height z score below -2 at follow-up visits<sup>24</sup> remained in the study and received nutritional counseling and another 2-week supply of RUTF. Any child whose condition substantially deteriorated during the study or who was still malnourished after six follow-up visits was referred for inpatient care. Children who did not return for follow-up visits were visited at home by community health workers and a member of the study team. Children were considered to have recovered when they were without edema and had a weight-for-height z score of -2 or higher. Children who withdrew from the study, were still malnourished after six follow-up visits, were hospitalized for any reason during the study, or died were considered to have had treatment failure.

研究步骤:

试验分组、用药、回访等详细研究过程

### STATISTICAL ANALYSIS

The primary end points were the nutritional recovery and mortality rates in the three study groups. We calculated that a sample of 900 children in each group would provide the study with 80% power at an alpha level of 0.05 to detect a reduction of 4 percentage points in the rate of treatment failure from an estimated baseline of 11%<sup>26</sup> and a reduction of 3.5 percentage points in the mortality rate from an estimated baseline of 8%.

统计分析:

简要说明统计学分析方法, 陈述主要数据

In addition, one prespecified subgroup analysis was conducted to evaluate the interaction between type of severe acute malnutrition and the intervention received, again with the use of recovery and mortality rates as the primary end points. This interaction was evaluated in a multiple logistic-regression model that included baseline characteristics that were significantly correlated with the primary outcomes in a univariate analysis.

Secondary outcomes of interest included weight gain, length gain, whether the antibiotics were associated with increased rates of adverse events, and time to recovery. Intention-to-treat analyses were used, and all tests were two-sided. Dichotomous outcomes were compared with the use of the chi-square test and Fisher's exact test; continuous variables were compared by means of Student's t-test and analysis of variance. The relative-risk ratios for the outcomes in the three intervention groups were also computed, and Kaplan-Meier plots of time to recovery and time to death were prepared.

**RESULTS**

**结果**

**STUDY POPULATION**

A total of 3,212 children with severe acute malnutrition were identified from December 2009 through January 2011; after the exclusion of ineligible children, the study included 2,767 children (Fig. S1 in the Supplementary Appendix). Baseline characteristics of the enrolled children were similar among the three groups (Table 1, and Table S1 in the Supplementary Appendix).

研究人群

**STUDY INTERVENTIONS AND ADVERSE EVENTS**

A total of 924 children were randomly assigned to the amoxicillin group, 923 to the cef di nir group, and 920 to the placebo group. Caregivers for more than 98% percent of the children reported that the child completed the entire 7-day course of the study regimen (Table S2 in the Supplementary Appendix).

No cases of severe allergy or anaphylaxis were identified. A total of three adverse events that were presumed to be drug reactions were reported: a generalized papular rash in a child who received amoxicillin, thrush in a child who received cef di nir, and bloody diarrhea that resolved spontaneously while treatment continued in a child who received cef di nir. Children who received placebo had higher rates of cough and diarrhea reported at the first follow-up visit than those who received an antibiotic agent; caretakers of children who received amoxicillin reported cough least frequently, whereas children who received cef di nir had the lowest rate of reported diarrhea (Table S2 in the Supplementary Appendix).

干预方法及副作用

### NUTRITIONAL RECOVERY AND MORTALITY RATES

Overall, 88.3% of the children enrolled in the study recovered from severe acute malnutrition (Table 2). Children with marasmic kwashiorkor recovered less frequently and had higher mortality rates than children with either kwashiorkor or marasmus.

The proportion of children who recovered was significantly lower among those who received placebo than among those who received either amoxicillin (3.6 percentage points lower; 95% confidence interval [CI], 0.6 to 6.7) or cef di nir (5.8 percentage points lower; 95% CI, 2.8 to 8.7). Deaths accounted for the largest proportion of children who did not recover in each study group and for each type of severe acute malnutrition. The overall mortality rate was 5.4%, but the rate was significantly higher among children who received placebo than among those who received either amoxicillin (relative risk, 1.55; 95% CI, 1.07 to 2.24) or cef di nir (relative risk, 1.80; 95% CI, 1.22 to 2.64). No significant differences in the causes of death, as reported by verbal autopsy (i.e., a structured investigation of events leading to the death), were identified among the three study groups (Table S3 in the Supplementary Appendix). Although the point estimates for nutritional recovery were higher and those for death were lower among children who received cef di nir than among those who received amoxicillin, these differences were not significant ( $P = 0.22$  for recovery and  $P = 0.53$  for death, for the comparison of amoxicillin and cef di nir by logistic regression). Recovery rates were higher and mortality rates were lower among children who received antibiotics than among those who received placebo, across a number of baseline characteristics (Fig. S2 in the Supplementary Appendix).

营养康复及死亡率

### SECONDARY OUTCOMES

Children with marasmic kwashiorkor recovered significantly more slowly than children with either kwashiorkor or marasmus (Table 3). Kaplan–Meier survival analysis for all children in the study showed that the time to recovery was shorter in the cef di nir group than in the amoxicillin group or the placebo group and was shorter in the amoxicillin group than in the placebo group (Fig. 1A). Similarly, children who received an antibiotic agent survived longer than those who received placebo (Fig. 1B).

Weight gain from enrollment until the second follow-up visit (or until the one follow-up visit for children with only one) was significantly higher among children who received cef di nir than among those who received placebo. Children who received either antibiotic agent also had greater increases in mid-upper-arm circumference than did those who received placebo.

次要结果

**BASELINE CHARACTERISTICS RELATED TO RECOVERY**

As compared with children who did not recover, those who recovered were significantly older and were more likely to have their father alive and still in the home (Table S4 in the Supplementary Appendix). Among children with marasmus or marasmic kwashiorkor, those with the lowest mid-upper-arm circumference and the lowest weight-for-height z score at enrollment were most likely to have treatment failure or to die. Children with the lowest height-for-age z score were least likely to recover. Although only 874 of 2,765 children (31.6%) were tested for HIV, those who were known to be HIV-sero-positive, especially if not receiving antiretroviral therapy, had the highest risks of treatment failure and death. Acute infectious symptoms and poor appetite both at enrollment and at the first follow-up visit (Table S5 in the Supplementary Appendix) were also associated with an increased risk of treatment failure.

A multiple logistic-regression model for baseline and intervention characteristics associated with nutritional recovery showed that younger age, marasmic kwashiorkor, greater stunting, HIV exposure or infection, and a cough before enrollment were associated with an increased risk of treatment failure (Table 4). These factors also proved to be significantly correlated with an increased risk of death; in addition, the caretaker's report of a good appetite at enrollment was significantly correlated with a reduced risk of death. As with the results of the univariate analysis, receipt of amoxicillin or cef di nir was strongly correlated with improved outcomes, although no significant difference between amoxicillin and cef di nir was observed. The interaction term between the type of severe acute malnutrition and the type of intervention proved not to be significant ( $P = 0.98$  for nutritional recovery and  $P = 0.45$  for death).

与康复相关的基线特征

**DISCUSSION**

**讨论**

Although improvements have been made in the treatment of severe acute malnutrition over the past decade, with the advent and widespread use of RUTF, more than 1 million children per year still die from this disease.<sup>21</sup> Given the high incidence of severe acute malnutrition worldwide,<sup>1</sup> the number of children who die remains unacceptably high, despite the best current, proved treatment.<sup>27</sup> In this double-blind, randomized, placebo-controlled trial, we found that the routine addition of amoxicillin or cef di nir to the outpatient management of severe acute malnutrition was associated with marked improvements in recovery and mortality rates and significant improvements in weight and gain in the mid-upper-arm circumference.

说明研究背景、研究方法  
及主要发现

<p>A 24.4% (95% CI, 4.1 to 40.4) reduction in the treatment-failure rate was observed when amoxicillin was added to routine therapy and a 38.9% (95% CI, 21.1 to 52.7) reduction was observed with cef di nir (Table 2). Moreover, a 35.6% (95% CI, 6.9 to 55.4) reduction in the mortality rate was observed with amoxicillin, and a 44.3% (95% CI, 18.0 to 62.2) reduction in the mortality rate was observed with cef di nir. Secondary outcomes (Table 3) were also generally consistent with these findings, with the shortest time to recovery and greatest gains in weight and mid-upper-arm circumference among children who received cef di nir and the longest time to recovery and smallest gains in weight and mid-upper-arm circumference among those who received placebo.</p>	<p>统计数据及次要结果分析</p>
<p>This study was conducted in rural sub-Saharan Africa in a stable subsistence farming population with a heavy burden of food insecurity and HIV infection and the acquired immunodeficiency syndrome, so these results may not necessarily be applicable in other populations, and thus they warrant validation in other contexts. However, no interaction between the type of severe acute malnutrition and the intervention group was observed, suggesting that this factor alone should not invalidate the generalizability of these findings. Although only a limited number of children had been tested for HIV, a high proportion of infected children had treatment failure or died (Table S4 in the Supplementary Appendix), providing further evidence for the need to provide integrated care for HIV infection and malnutrition in such children.<sup>28,29</sup></p>	<p>人群特征分析</p>
<p>During this study, we pursued an aggressive strategy to determine the clinical status of children lost to follow-up. Almost all the children whom we were able to find had in fact died or were so ill that they needed to be hospitalized. This accounts for the higher percentage of deaths in our study than in other studies in Malawi,<sup>26,30,31</sup> in which the children were likely to have been categorized simply as having withdrawn from the study.</p>	<p>高死亡率原因分析</p>
<p>The amoxicillin used in this study cost an average of \$2.67 per child, and the cost of cef di nir was \$7.85 but presumably would be lower if it were used on a large scale. For comparison, the cost of RUTF was approximately \$50 for the course of therapy. Caretakers reported excellent adherence and did not report any difficulty in administering the medications. Among the children who received antibiotics, the rates of common side effects (most notably, diarrhea) were lower than they were among children who received placebo (Table S2 in the Supplementary Appendix). One might speculate that this may suggest a potential mechanism of effectiveness in the malnutrition armamentarium (i.e., decreasing the rates of bacterial pneumonia and dehydrating diarrhea in these immunocompromised children).</p>	<p>试验费用及副作用分析</p>



<p>The children enrolled in this study had uncomplicated severe acute malnutrition, as do the vast majority of malnourished children who present for care,<sup>21</sup> in that they all showed a good appetite at enrollment and no clinical signs of sepsis. The small proportion of children who did not meet these criteria were transferred to inpatient treatment. Mucosal defenses (both respiratory and intestinal) are known to be compromised in resource-limited settings such as Malawi,<sup>32</sup> especially among malnourished children.<sup>33,34</sup> Studies of bacteremia in malnourished children<sup>11</sup> suggest that most severe invasive bacterial infections are due to translocation across these compromised mucosal surfaces. Thus, although these children did not specifically show signs of sepsis at the time of enrollment, antibiotics were effective in lowering the risk that these complications would develop during nutritional treatment. Although the increasing threat of antimicrobial resistance in the developing world<sup>35-38</sup> cannot be ignored and instances of highly resistant bacteria have been observed in malnourished children,<sup>39</sup> we believe that the routine use of antibiotics is worth serious consideration because of the observed benefits of nutritional recovery and a reduced risk of death in this specific high-risk population.</p>	<p>与其他研究结果对比，分析使用抗生素的必要性</p>
<p>Our results suggest that children with uncomplicated severe acute malnutrition who qualify for outpatient therapy<sup>4</sup> remain at risk for severe bacterial infection and that the routine inclusion of antibiotics as part of their nutritional therapy is warranted. This prospective, randomized, double-blind, placebo-controlled study supplants our previous retrospective, uncontrolled study,<sup>19</sup> which showed no benefit of routine amoxicillin therapy. The results of the previous study were likely to have been confounded by the large differences in baseline characteristics between the children who received antibiotics and those who did not and may also have been confounded by other, unidentified factors in the implementation of the therapeutic feeding protocols between the two groups. Further studies are needed to evaluate long-term outcomes of routine antibiotic use in children with uncomplicated severe acute malnutrition and to determine whether a specific high-risk target population can be better defined.</p>	<p>结论性意见及未来研究思路</p>
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