Directions: Identify and correct the grammar problems in the following sentences based on the information outlined in chapter 7 of the *AMA Manual of Style*. For further explanation of the correct answers, refer to the cited section of the *AMA Manual of Style*.

1. Using the $\chi^2$ test for categorical variables and analysis of variance for continuous variables, differences by ethnicity were tested.

**ANSWER:** Using the $\chi^2$ test for categorical variables and analysis of variance for continuous variables, we tested for differences by ethnicity.

   **Editor’s Note:** Verb phrase dangler (§7.6.2, Verbal Phrase Danglers). A dangling participle implies an actor but fails to indicate who or what that actor is. In this example, it is unclear who used the $\chi^2$ test to test for differences by ethnicity. By adding *we* (or *the authors, the investigators*, or something similar), the problem is solved.

2. Study variables included age, sex, length of illness, and responding to the survey questions.

**ANSWER:** Study variables included age, sex, length of illness, and survey responses.

   **Editor’s Note:** Nonparallel construction (§7.9.3, In Series or Comparisons). All the elements of the series or of the comparison should be parallel structures (eg, nouns with nouns, prepositional phrases with prepositional phrases).

3. In the United States, journals may receive either a subpoena for confidential information or a “request” are made by a federal agency.

**ANSWER:** In the United States, journals may receive either a subpoena for confidential information or a “request” from a federal agency.

   **Editor’s Note:** Nonparallel construction (§7.9.1, Correlative Conjunctions). All elements of the parallelism that appear on one side of the coordinating conjunction should match corresponding elements on the other side.

4. The study examined postradiotherapy prostate cancer biochemical failure.

**ANSWER:** The study examined biochemical failure in patients with prostate cancer after radiotherapy.

   **Editor’s Note:** Although nouns can be used as modifiers, overuse of noun modifiers can lead to a lack of clarity. Purists may demand stricter rules on usage, but, as with the use of nouns as verbs (see §11.4, Back-formations), the process of linguistic change is inevitable, and grammatical rigor must be tempered by judgment and common sense (§7.1.1, Nouns).
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as Modifiers). In the example above, the sentence can be revised to avoid the excessive use of noun modifiers.

5. We performed a quantitative overview of randomized trials which tested β-blockers in myocardial infarction, heart failure, and hypertension.

ANSWER: We performed a quantitative overview of randomized trials that tested β-blockers in myocardial infarction, heart failure, and hypertension.

Editor’s Note: Incorrect use of relative pronoun (which vs that) (§7.2.2.2, Relative Pronouns, That vs Which). Relative pronouns may be used in subordinate clauses to refer to previous nouns. The word that introduces a restrictive clause, one that is essential to the meaning of the noun it describes. The word which introduces a nonrestrictive clause, one that adds more information but is not essential to the meaning. Clauses that begin with which are preceded by commas.

Another example: “He visited the new hospital, which had been built last year” is correct. However, if there were 2 hospitals and only 1 had been built last year, the sentence would read, “He visited the new hospital that had been built last year.”

6. Of all the fields of study, genetics are the most challenging.

ANSWER: Of all the fields of study, genetics is the most challenging.

Editor’s Note: Some nouns, by virtue of ending in a “plural” -s form, are mistakenly taken to be plurals even though they should be treated as singular and take a singular verb (eg, genetics, mathematics, measles, mumps, statistics) (§7.5.3, False Plurals; see also §7.5.2 False Singulars).

Another example: “The data were inconclusive.”

7. The surgeon general told the secretary of the Department of Health and Human Services that he was responsible for the unflattering news story.

ANSWER: When talking with the secretary of Health and Human Services, the surgeon general took responsibility for the unflattering news story.

Or

The surgeon general blamed the secretary of the Department of Health and Human Services for the unflattering news story.

Editor’s Note: Pronouns replace nouns. In this replacement, the antecedent must be clear, and the pronoun must agree with the antecedent in number and gender (§7.2, Pronouns). Who is the be in the above sentence? The surgeon general or the secretary of the Department of Health and Human Services?
8. Stillborn fetuses were not included in this study nor many previously published studies.

**ANSWER:** Stillborn fetuses were not included in this or many previously published studies.

**Editor’s Note:** Avoid the use of *nor* when the first negative is expressed by *not* or *no* ([§7.9.3, In Series or Comparisons](#)).

9. In the recent study by Hobbs et al, the author found that noncancerous tonsil specimens demonstrated a heightened proliferation response to human papillomavirus 16 antigen, suggesting prior exposure to the virus.

**ANSWER:** In the recent study by Hobbs et al, the authors found that noncancerous tonsil specimens demonstrated a heightened proliferation response to human papillomavirus 16 antigen, suggesting prior exposure to the virus.

**Editor’s Note:** Subject and complements should agree in number ([§7.1.3, Subject-Complement Agreement](#)). The phrase *et al* means “and others”; therefore, the singular *author* should be changed to *authors*.

10. I wish it was possible to provide free treatment to all who needed it.

**ANSWER:** I wish it were possible to provide free treatment to all who needed it.

**Editor’s Note:** Subjunctive verbs are used primarily for expressing a wish (I wish it were possible), a supposition (If I were to accept the position . . . ), or a condition that is uncertain or contrary to fact (If that were true . . . ; If I were younger . . . )) ([§7.4.2, Mood](#)).

11. Biopsy specimens were taken from an adjacent muscle and reveal a neural infiltration by Sézary cells with secondary muscular atrophy.

**ANSWER:** Biopsy specimens were taken from an adjacent muscle and revealed a neural infiltration by Sézary cells with secondary muscular atrophy.

**Editor’s Note:** Tense indicates the time relation of a verb: present (*I am*), past (*I was*), future (*I will be*), present perfect (*I have been*), past perfect (*I had been*), and future perfect (*I will have been*). It is important to choose the verb that expresses the time that is intended. It is equally important to maintain consistency of tense ([§7.4.3, Tense](#)). In biomedical articles, the past tense is usually used to refer to the methods and results of the study being described.

12. The findings of the medical examination were not inconsistent with a diagnosis of necrobiosis lipoidica diabeticorum.

**ANSWER:** The findings of the medical examination were consistent with a diagnosis of necrobiosis lipoidica diabeticorum.

**Editor’s Note:** Subjunctive verbs cause the most difficulty; they are used primarily for expressing a wish (I wish it were possible), a supposition (If I were to accept the position . . . ), or a condition that is uncertain or contrary to fact (If that were true . . . ; If I were younger . . . ). The subjunctive occurs in fairly formal situations and usually involves past
(were) or present (be) forms. However, it is not grammatically acceptable to use a double negative to emphasize the negative. A double negative is best avoided in scientific writing because it often causes the reader to go back and reread the sentence to make sure of the meaning (§7.4.4, Double Negatives).

13. A woman is more likely to have a child by the age of 25 years than a man.

**ANSWER:** A woman is more likely than a man to have a child by the age of 25 years.

**Editor's Note:** The conjunction *than* often introduces an abridged expression (eg, “You are younger than I [am young].”) Correct placement of *than* is important to avoid ambiguity (§7.9.2, Elliptical Comparison). The above example leaves the reader wondering whether a woman is more likely to have a child or a man by the age of 25 years.

14. The patient with disseminated granuloma annulare, as well as the 2 patients with ulcerative necrobiosis lipoidica diabeticorum, were given a dose of 5 mg/kg of infliximab.

**ANSWER:** The patient with disseminated granuloma annulare, as well as the 2 patients with ulcerative necrobiosis lipoidica diabeticorum, was given a dose of 5 mg/kg of infliximab.

**Editor's Note:** If the intervening phrase is introduced by *with, together with, as well as, along with, in addition to,* or similar constructions, the singular verb is preferred if the subject is singular because the intervening phrase does not affect the singularity of the subject (§7.5.1, Intervening Phrase).

15. The couple were seeking care from the specialist for fertility issues.

**ANSWER:** The couple was seeking care from the specialist for fertility issues.

**Editor's Note:** A collective noun is one that names more than 1 person, place, or thing. When the group is regarded as a unit, the singular verb is the appropriate choice (§7.5.5, Collective Nouns; see also §9.2, Collective Nouns).