What is claimed is:

1. A multivalent pneumococcal vaccine composition comprising:

(a) capsular polysaccharides of two or more pneumococcal serotypes selected from 1, 2, 3, 4, 5, 6A, 6B, 6C, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15A, 15B, 15C, 16F, 17F, 18C, 19F, 19A, 20A, 20B, 22F, 23A, 23B, 23F, 24B, 24F, 31, 33F, 34, 35B, 35F, 38, 39 and 45, and

(b) pneumococcal surface adhesion protein A (PsaA) and CRM_{197} as carrier proteins, wherein

i. capsular polysaccharide from each of the pneumococcal serotype is individually conjugated to a carrier protein selected from PsaA and CRM_{197};

ii. capsular polysaccharide from at least one pneumococcal serotype is conjugated to PsaA;

iii. capsular polysaccharide from at least one pneumococcal serotype is conjugated to CRM_{197}; and

iv. the at least one pneumococcal capsular polysaccharide conjugated to PsaA has a serotype different from a serotype of the at least one pneumococcal capsular polysaccharide conjugated to CRM197, wherein the conjugates are adsorbed on to aluminum phosphate gel,

wherein the PsaA lacks the wild-type hydrophobic N-terminal leader peptide, and

the pneumococcal vaccine composition further comprises one or more pharmaceutically acceptable excipient selected from the group consisting of diluent, buffer, preservative, stabilizer and/or a lyophilization excipient.

2. The multivalent pneumococcal vaccine composition of claim 1 wherein the multivalent pneumococcal vaccine composition is a 10 valent, 13 valent, 14 valent, 15 valent, 17 valent, 18 valent, 19 valent, 20 valent, 22 valent, 23 valent, 24 valent or 25 valent pneumococcal vaccine composition.

3. The multivalent pneumococcal vaccine composition of claim 1 or 2 having a percent ratio of carrier protein to pneumococcal polysaccharide (protein/PS) of 0.5 to 2.0 protein/PS.

4. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition further comprises a pharmaceutically acceptable carrier.

5. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 14 pneumococcal polysaccharides.

6. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 17 pneumococcal polysaccharides.

7. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 19 pneumococcal polysaccharides.

8. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 20 pneumococcal polysaccharides.

9. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 22 pneumococcal polysaccharides.

10. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition comprises at least 24 pneumococcal polysaccharides.

11. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 14 valent pneumococcal vaccine composition comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F,

wherein at least serotypes 3, and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F are conjugated to CRM_{197}.

12. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 14 valent pneumococcal vaccine composition comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F, wherein at least serotypes 3, and 6A are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F are conjugated to CRM_{197}.

13. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 15 valent pneumococcal vaccine composition comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F are conjugated to CRM_{197}.

14. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 17 valent pneumococcal vaccine composition comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 12F, 14, 18C, 19A, 19F, 22F, 23F, 33F and 35B wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 12F, 14, 18C, 19A, 19F, 22F, 23F, 33F and 35B are conjugated to CRM_{197}.

15. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 20 valent pneumococcal vaccine composition comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 35B and 45 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 35B and 45 are conjugated to CRM_{197}.

16. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 22 valent pneumococcal vaccine comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 10A, 12F, 14, 15A, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B, and 38 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 10A, 12F, 14, 15A, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 are conjugated to CRM_{197}.

17. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 22 valent pneumococcal vaccine comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 10A, 12F, 14, 15A, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 wherein serotypes 1, 3, 6A, 10A, 12F, 15A, 15B, 22F, 34, 35B, 38 are conjugated to PsaA and serotypes 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F and 33F are conjugated to CRM_{197}.

18. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 24 valent pneumococcal vaccine comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 12F, 14, 15A, 15B, 16F, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 8, 9V, 10A, 12F, 14, 15A, 15B, 16F, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 are conjugated to CRM_{197}.

19. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 24 valent pneumococcal vaccine comprising pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 12F, 14, 15A, 15B, 16F, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 wherein serotypes 1, 3, 6A, 8, 10A, 12F, 15A, 15B, 16F, 22F, 34, 35B, 38 are conjugated to PsaA and serotypes 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F and 33F are conjugated to CRM_{197}.

20. The multivalent pneumococcal vaccine composition of claims 1 or 2 wherein the multivalent pneumococcal vaccine composition is formulated into a dosage unit.

21. The multivalent pneumococcal vaccine composition of claim 20 wherein the dosage unit comprises 0.1 µg to 50 µg of each pneumococcal polysaccharide, 0.1 µg to 10 µg, or 1 µg to 5 µg of each pneumococcal polysaccharide, wherein each pneumococcal polysaccharide is each individually conjugated to the carrier protein from 1.5 µg to 5 µg of carrier protein.

22. The multivalent pneumococcal vaccine composition of claim 21 wherein the dosage unit is supplied as a unit dose vial, a multiple dose vial, or a pre-filled syringe.

23. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a single 0.5 mL dose comprising:

2.2 to 4.4 µg of one or more pneumococcal polysaccharides;

1 µg to 10 µg of PsaA conjugated to each of the one or more pneumococcal polysaccharides;

1 µg to 10 µg of CRM_{197} conjugated to each of the one or more pneumococcal polysaccharides;

0.2 mg to 1 mg of aluminum phosphate adjuvant; and

an excipient.

24. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 13 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharide selected from serotypes 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F and 33F,

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

25 µg to 30 µg PsaA and CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,
sodium chloride, and
a L-histidine buffer.

25. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 14 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F,

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

20 µg to 35 µg of the combination of PsaA and CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,
sodium chloride, and
a L-histidine buffer.

26. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 14 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F,

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 to 4.4 µg of each pneumococcal polysaccharide,

20 µg to 35 µg of the combination of PsaA and CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,
sodium chloride, and
a L-histidine buffer.

27. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 15 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F and 33F are conjugated to CRM_{197},

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

5 µg to 20 µg of PsaA;

20 µg to 40 µg of CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,

sodium chloride, and

a L-histidine buffer.

28. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 17 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 12F, 14, 18C, 19A, 19F, 22F, 23F, 33F and 35B wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 12F, 14, 18C, 19A, 19F, 22F, 23F, 33F and 35B are conjugated to CRM_{197},

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

5 µg to 20 µg of PsaA,

20 µg to 40 µg of CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,

sodium chloride, and

a L-histidine buffer.

29. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 20 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 35B and 45 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 35B and 45 are conjugated to CRM_{197},

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

5 µg to 20 µg of PsaA,

20 µg to 50 µg of CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,

sodium chloride, and

a L-histidine buffer.

30. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 22 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 10A, 12F, 14, 15A, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 9V, 10A, 12F, 14, 15A, 15B, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 are conjugated to CRM_{197},

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

5 µg to 20 µg of PsaA,

20 µg to 50 µg of CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,

sodium chloride, and

a L-histidine buffer.

31. The multivalent pneumococcal vaccine composition of claim 1 or 2 wherein the multivalent pneumococcal vaccine composition is a 24 valent pneumococcal vaccine composition comprising:

pneumococcal polysaccharides selected from serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 12F, 14, 15A, 15B, 16F, 18C, 19A, 19F, 22F, 23F, 33F, 34, 35B and 38 wherein at least serotypes 3, 6A and 6B are conjugated to PsaA and one or more serotypes 1, 4, 5, 7F, 8, 9V, 10A, 12F, 14, 15A, 15B, 16F, 18C, 19A, 19F, 22F, 23F, 33F and 35B are conjugated to CRM_{197},

wherein the pneumococcal vaccine composition is a 0.5 mL dose formulated as a sterile liquid comprising:

2.2 µg to 4.4 µg of each pneumococcal polysaccharide,

5 µg to 20 µg of PsaA,

20 µg to 50 µg of CRM_{197},

0.125 mg of elemental aluminum as 0.5 mg aluminum phosphate,

sodium chloride, and

a L-histidine buffer.

32. Use of the multivalent pneumococcal vaccine composition of any one of the preceding claims in the manufacture of a medicament for treating a disease mediated by streptococcus pneumoniae in a subject.

33. The use of claim 32 wherein the disease mediated by streptococcus pneumoniae is invasive pneumococcal disease (IPD).

34. The use of any one of claims 32-33 wherein the subject is a human.

35. The use of claim 34 wherein the human is an infant (less than 1 year of age), a toddler (12 months to 24 months of age), a young child (2 years to 5 years of age), an older child (5 years to 13 years of age), an adolescent (13 years to 18 years of age), an adult (18 years to 65 years of age), or an elder (more than 65 years of age).

36. The use according to claim 32 wherein an immunologically effective amount of the pneumococcal vaccine composition of any one of claims 1-31 induces an immune response to a S. pneumoniae capsular polysaccharide conjugate.