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## GLOSSARY OF TECHNICAL TERMS

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| “ACYW135”                 | the four serogroups (A, C, Y, W135) of <i>Neisseria meningitidis</i> targeted by quadrivalent meningococcal conjugate vaccine (MCV4)                                                                                                                                                                                                                                                                                                                                                                                       |
| “AE”                      | adverse event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| “Antigenic Drift”         | gradual mutation of virus surface antigens over time that can reduce vaccine effectiveness. Cell-based manufacturing avoids egg-adapted mutations that may worsen antigenic match                                                                                                                                                                                                                                                                                                                                          |
| “Antigenic Fidelity”      | the degree to which a vaccine strain faithfully represents circulating wild-type strains without adaptation-induced mutations                                                                                                                                                                                                                                                                                                                                                                                              |
| “Adventitious Agents”     | unintended microbial or viral contaminants that may be introduced during vaccine manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                             |
| “B Cells”                 | a type of immune cell (lymphocyte) that recognizes vaccine antigens and differentiates into antibody-producing plasma cells                                                                                                                                                                                                                                                                                                                                                                                                |
| “Bioreactors”             | large-scale industrial cell culture vessels used to grow Vero or other cells and produce virus at industrial scale                                                                                                                                                                                                                                                                                                                                                                                                         |
| “Bulk”                    | the active pharmaceutical/biological ingredient produced upstream before final formulation and fill-finish manufacturing                                                                                                                                                                                                                                                                                                                                                                                                   |
| “CAGR”                    | compound annual growth rate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| “CAPA”                    | corrective action and preventive action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| “Capsular Polysaccharide” | the carbohydrate outer layer of certain bacterial pathogens (e.g., <i>S. pneumoniae</i> , <i>N. meningitidis</i> ) that forms the antigen basis for polysaccharide and conjugate vaccines                                                                                                                                                                                                                                                                                                                                  |
| “Category I Vaccine”      | a vaccine that the Chinese government provides to its citizens free of charge and that citizens should be vaccinated in accordance with relevant government regulations, including vaccines determined in the national immunization program, additional vaccines required by provincial government in the implementation of national immunization programs, and vaccines used in emergency vaccination or mass vaccination organized by the government at county-level or above, or their respective healthcare department |
| “Category II Vaccine”     | a vaccine that is voluntarily vaccinated by citizens in China, and the cost of which is paid by the recipient or his/her guardian                                                                                                                                                                                                                                                                                                                                                                                          |
| “CDE”                     | center for drug evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| “CDC”                                | center for disease control                                                                                                                                                             |
| “cGMP”                               | current good manufacturing practice                                                                                                                                                    |
| “Cell-Based Influenza Vaccine”       | an influenza vaccine manufactured using cell culture instead of chicken embryo, reducing egg-adapted mutations and supply chain risks                                                  |
| “Cell Culture-Derived Vaccines”      | modern vaccines grown using cell culture methods (as opposed to chicken embryo-based or animal brain-derived methods), offering safe and potent immunization                           |
| “Chicken embryo-Based Manufacturing” | the traditional method of producing influenza vaccines by inoculating chicken embryo with influenza virus                                                                              |
| “Chinese Pharmacopoeia”              | the official compendium of quality standards for drugs and biological products in China; serves as the regulatory benchmark for vaccine quality                                        |
| “Cold-Chain Transportation”          | a vaccine transportation system that maintains continuous temperature monitoring and control throughout the delivery process, as required by the Vaccine Administration Law            |
| “Conjugate Vaccine”                  | a vaccine in which a polysaccharide antigen is chemically linked (conjugated) to a carrier protein to elicit a stronger, T-cell dependent immune response with immunological memory    |
| “CRO”                                | contract research organization                                                                                                                                                         |
| “CTA”                                | clinical trial application, the PRC equivalent of investigational new vaccine application                                                                                              |
| “CTN-1 Strain”                       | a domestically isolated rabies virus strain of human origin with the highest genetic sequence homology to circulating strains in China that are used in marketed human rabies vaccines |
| “Essen Regimen”                      | a five-dose rabies post-exposure vaccination schedule (days 0, 3, 7, 14, and 28)                                                                                                       |
| “GCP”                                | good clinical practice                                                                                                                                                                 |
| “GMC”                                | geometric mean concentration                                                                                                                                                           |
| “GMT”                                | geometric mean titer                                                                                                                                                                   |
| “GMP”                                | good manufacturing practice                                                                                                                                                            |

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| “Group B Streptococcus”    | a bacterial pathogen whose polysaccharide antigens are compatible with the company’s polysaccharide/conjugate vaccine platform                                                                                                   |
| “H1N1/H3N2”                | subtypes of influenza A virus; both the trivalent and quadrivalent split influenza vaccines provide protection against these two subtypes                                                                                        |
| “HDC”                      | human diploid cells, cell substrate considered the WHO “gold standard” for rabies vaccine production. These cells contain two complete sets of chromosomes (the normal human complement), derived from normal human fetal tissue |
| “IgG”                      | immunoglobulin G, the predominant antibody class produced in response to polysaccharide/conjugate vaccines; measured as a primary immunogenicity endpoint in clinical trials                                                     |
| “Immunogenicity”           | the ability of a vaccine or antigen to provoke an immune response; evaluated through antibody titers, seroconversion rates, and GMTs/GMCs in clinical trials                                                                     |
| “Immunological Memory”     | the ability of the immune system to mount a faster, stronger response upon re-exposure to an antigen; induced by vaccines that elicit T-cell dependent responses                                                                 |
| “IND”                      | investigational new drug                                                                                                                                                                                                         |
| “Inactivated Vaccines”     | vaccines that employ whole pathogens chemically or physically inactivated, retaining antigenic properties while eliminating infectivity to safely induce an immune response                                                      |
| “ISO 45001:2018”           | occupational health and safety management system international certification standard                                                                                                                                            |
| “IU/dose”                  | international units per dose                                                                                                                                                                                                     |
| “KOL”                      | key opinion leader, healthcare professionals, experts, and physicians influential in shaping adoption of medical products; targeted through academic promotion activities                                                        |
| “Live Attenuated Vaccines” | vaccines using weakened forms of live pathogens that can replicate to a limited extent in the host, eliciting robust and durable immune responses without causing disease under normal conditions                                |
| “Lot Release”              | the official regulatory batch testing and approval process in China, conducted by NIFDC, that must be passed before each batch of vaccine can be commercially distributed                                                        |

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| “Lot Release Volume”                        | the quantity of vaccine batches officially released by NIFDC after passing quality testing; used as a measure of market share and production output                                                                   |
| “Lyophilized (Freeze-Dried)”                | vaccines processed by freeze-drying in a vacuum and low-temperature environment                                                                                                                                       |
| “MCV”                                       | meningococcal conjugate vaccine                                                                                                                                                                                       |
| “MCV4”                                      | the ACYW135 quadrivalent meningococcal conjugate vaccine                                                                                                                                                              |
| “MenACWY”                                   | a quadrivalent meningococcal vaccine covering serogroups A, C, W, and Y                                                                                                                                               |
| “MenABCWY”                                  | a pentavalent meningococcal vaccine covering serogroups A, B, C, W, and Y                                                                                                                                             |
| “MenB”                                      | a recombinant serogroup B meningococcal vaccine to prevent invasive diseases caused by <i>Neisseria meningitidis</i> serogroup B                                                                                      |
| “Meningitis”                                | inflammation of the membranes surrounding the brain and spinal cord                                                                                                                                                   |
| “MPSV”                                      | meningococcal polysaccharide vaccine                                                                                                                                                                                  |
| “mRNA Technologies”                         | messenger RNA-based vaccine platform being developed for influenza and other diseases                                                                                                                                 |
| “MUG Technology”                            | multivalent unimolecular glycoconjugate technology, a proprietary manufacturing technology that integrates two or more antigen components within a single bulk, simplifying high-valency conjugate vaccine production |
| “NIP”                                       | national immunization program, a government-funded program providing free vaccines to eligible populations in China                                                                                                   |
| “NDA”                                       | new drug application, the marketing approval application submitted to NMPA for new drug/vaccine approval                                                                                                              |
| “One-Invoice Vaccine Distribution Model”    | a regulatory distribution model in China where vaccines are distributed through a single invoice chain, impacting how manufacturers segment markets and establish direct promotion teams                              |
| “PCV”                                       | pneumococcal conjugate vaccines                                                                                                                                                                                       |
| “PCV13”, “PCV15”, “PCV20”, “PCV24”, “PCV26” | 13-, 15-, 20-, 24- and 26-valent pneumococcal conjugate vaccines                                                                                                                                                      |

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| “PEP”                                          | post-exposure prophylaxis, a combination of wound care, passive immunization, and active vaccination administered promptly after rabies exposure                                                                       |
| “Pharmacovigilance”                            | the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects of vaccines/medicines after they enter the market                                                   |
| “Pneumococcal Polysaccharide Vaccines (PPSVs)” | vaccines composed of purified capsular polysaccharides                                                                                                                                                                 |
| “Polysaccharide-Protein Conjugate Vaccines”    | vaccines that chemically link polysaccharide antigens to carrier proteins to convert T-cell independent responses into T-cell dependent immunity, enhancing immunogenicity, particularly in infants and young children |
| “Polysaccharide Vaccines”                      | vaccines based on purified surface polysaccharides derived from pathogens                                                                                                                                              |
| “POV”                                          | point of vaccination, the facilities where vaccinees receive vaccines, operated under CDC supervision                                                                                                                  |
| “PPSV23”                                       | 23-valent pneumococcal polysaccharide vaccine                                                                                                                                                                          |
| “Pre-exposure Prophylaxis (PrEP)”              | vaccination offering baseline protection for high-risk individuals before potential exposure to rabies                                                                                                                 |
| “Pre-filled Diluent Syringe”                   | a syringe pre-loaded with diluent that simplifies the reconstitution of lyophilized vaccines and lowers contamination risk                                                                                             |
| “Pre-IND”                                      | the preclinical/consultation stage before filing an IND application with NMPA                                                                                                                                          |
| “Preclinical”                                  | research conducted in animals or in vitro before human clinical trials begin, to characterize safety and immunogenicity                                                                                                |
| “Primary Cell-Based Vaccines”                  | the earliest generation of rabies vaccines derived from primary cells                                                                                                                                                  |
| “Protein-Based Vaccines”                       | vaccines including recombinant protein subunit vaccines that use purified native or recombinant protein antigens to induce targeted immune responses with a well-established safety profile                            |
| “Provincial-Level Public Tender”               | a competitive bidding process organized by provincial CDCs through which vaccine manufacturers must qualify before they can sell to any county-level CDCs within that province                                         |

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| “Quadrivalent Influenza Vaccine”           | an influenza vaccine covering four virus strains — two influenza A subtypes (H1N1 and H3N2) and two influenza B lineages (B/Victoria and B/Yamagata)                        |
| “Quadrivalent Split Influenza Vaccine”     | an inactivated split-virion influenza vaccine covering all strains in the trivalent vaccine plus the additional influenza B Yamagata lineage strain                         |
| “Reactogenicity”                           | the tendency of a vaccine to produce common, expected inflammatory reactions                                                                                                |
| “Recombinant Protein Subunit Vaccines”     | vaccines using purified recombinant protein antigens to induce targeted immune responses                                                                                    |
| “Recombinant Pneumococcal Protein Vaccine” | a next-generation pneumococcal vaccine type using recombinant protein antigens                                                                                              |
| “Reconstitution”                           | the process of adding a diluent to a freeze-dried (lyophilized) vaccine to restore it to liquid form prior to administration                                                |
| “SAE”                                      | serious adverse event                                                                                                                                                       |
| “Seroconversion Rate”                      | the proportion of vaccinated subjects whose serum antibody levels convert from negative (below the threshold) to positive (at or above the threshold) following vaccination |
| “Serogroup”                                | classification of <i>Neisseria meningitidis</i> based on the composition of the bacterial capsular polysaccharide                                                           |
| “Seroprotection Rate”                      | the proportion of subjects achieving serotype-specific IgG concentrations $\geq 0.35$ $\mu\text{g/mL}$                                                                      |
| “Serotype”                                 | a classification of microorganisms based on surface antigen variation                                                                                                       |
| “Serum-Free Production”                    | a vaccine manufacturing process that does not use animal serum in culture media                                                                                             |
| “Subunit Vaccine”                          | a vaccine formulated with purified specific protein components of a pathogen (e.g., HA and NA) rather than the whole or disrupted virus                                     |
| “tCO <sub>2</sub> e”                       | tons of CO <sub>2</sub> equivalent                                                                                                                                          |
| “Tier-3 Cell Bank”                         | a qualified master/working cell bank at the third-tier qualification level; established and inspected by NIFDC                                                              |
| “Toxoid Vaccines”                          | a vaccine type that uses inactivated toxins produced by a pathogen to induce immunity                                                                                       |

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| “Trivalent Split Influenza Vaccine” | an inactivated split-virion injectable influenza vaccine providing protection against H1N1, H3N2, and the B/Victoria influenza B strain |
| “TT”                                | tetanus toxoid, an inactivated, non-toxic form of tetanus toxin that is commonly used as a carrier protein in glycoconjugate vaccines   |
| “Valency (Vaccine)”                 | the number of different strains or serotypes covered by a single vaccine formulation                                                    |
| “Vero Cell”                         | a continuous cell line derived from African green monkey kidney, used as a substrate for virus culture in rabies vaccine manufacturing  |
| “Vero Cell-Based Vaccines”          | rabies vaccines derived from Vero cells                                                                                                 |
| “Viral Vector Vaccines”             | a vaccine type using viral vectors as antigen delivery mechanisms to induce immunity                                                    |
| “WHO PQ”                            | world health organization prequalification                                                                                              |
| “Zagreb Regimen”                    | a four-dose rabies post-exposure vaccination schedule                                                                                   |