



CONDUCT OF CLINICAL TRIALS GUIDELINES

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GOVERNMENT OF PAKISTAN
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HISTORY

This is the first edition of these guidelines.

APPLICATION

These guidelines are intended to provide guidance to the applicants including pharmaceutical industry, healthcare institutions, investigators, researchers, sponsors, CROs etc.

PURPOSE

The current guideline describes the requirements, procedure for submission, review, evaluation and approval of applications for the conduct of clinical trial.

CONTEXT OF THE GUIDELINES

DRAP regulates issues related to safety, quality, efficacy, handling and use of investigational products in clinical trials under Section 3 and 7 of the Bio-Study Rules 2017 and subsection (c) (ix) of section 7 of Drug Regulatory Authority of Pakistan Act, 2012. The Authority may issue an authorization on Form-V and Form-VI of the Bio-Study Rules 2017, to any applicant, for carrying out clinical trials in respect of an investigational medicinal product that may be specified in the certificate. No person may carry out any clinical trial in respect of any drug unless he or she is in possession of a certificate issued under sub section (1).

DRAP reserves the right to amend any part of these guidelines whenever it deems fit.

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1. ABBREVIATIONS

ADR	:	Adverse Drug Reaction
AE	:	Adverse Event
AIDS	:	Acquired Immune Deficiency Syndrome
CIOMS	:	Council of International Organization for Medical Science
CoA	:	Certificate of Analysis
CRO	:	Contract Research Organization
CTA	:	Clinical Trial Application
CSC	:	Clinical Studies Committee
DIBD	:	Development International Birth Date
DLP	:	Data Lock Point
DRAP	:	Drug Regulatory Authority of Pakistan
DSUR	:	Development Safety Update Report
EU	:	European Union
GCP	:	Good Clinical Practice
GLP	:	Good laboratory Practice
GMP	:	Good Manufacturing Practice
IB	:	Investigator's Brochure
ICH	:	International Conference on Harmonization
IRB	:	Institutional Review Board
IRC	:	Institutional Review Committee
ISCTN	:	International Serial Clinical Trial Number
LPLV	:	Last Patient Last Visit
LSO	:	Last Subject Out
NBC	:	National Bio-ethics Committee
PI	:	Principal Investigators
PBRER	:	Periodic Benefits-Risk Evaluation Report
PHRC	:	Pakistan Health Research Council
PNPC	:	Pakistan National Pharmacovigilance Centre.
SAE	:	Serious Adverse Events
TRS	:	Technical Review Series
WHO	:	World Health Organization

2. DEFINITIONS

Adverse Reaction	Drug	<p>“Adverse drug reaction” or “ADR” means response to medicines or therapeutic good which is noxious and unintended that occurs at doses normally used for the prophylaxis, diagnosis, or therapy of disease or for the restoration, correction or modification of physiological function. A response in this context means that a causal relationship between a medicinal product and an adverse event is at least a reasonable possibility. An adverse reaction, in contrast to an adverse event, is characterised by the fact that a causal relationship between a medicinal product and an occurrence is suspected;</p> <p>OR</p> <p>In the pre-approval clinical experience with a new medicinal product or its new usages, particularly as the therapeutic dose(s) may not be established: all noxious and unintended responses to a medicinal product related to any dose should be considered adverse drug reactions. The phrase responses to a medicinal product means that a causal relationship between a medicinal product and an adverse event is at least a reasonable possibility, i.e. the relationship cannot be ruled out. Regarding marketed medicinal products: a response to a drug which is noxious and unintended and which occurs at doses normally used in man for prophylaxis, diagnosis, or therapy of diseases or for modification of physiological function (see the ICH Guideline) for Clinical Safety Data Management: Definitions and Standards for Expedited Reporting).</p>
Adverse Event		<p>“Adverse event” or “AE” means any untoward medical occurrence in a patient or clinical investigation subject administered a pharmaceutical product or therapeutic good and which does not necessarily have a causal relationship with this treatment;</p> <p>OR</p> <p>Any untoward medical occurrence in a patient or clinical investigation subject administered a pharmaceutical product and which does not necessarily have a causal relationship with this treatment. An adverse event (AE) can therefore be any unfavorable and unintended sign (including an abnormal laboratory finding), symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product (see the ICH Guideline for Clinical Safety Data Management: Definitions and Standards for Expedited Reporting).</p>
Amendment (to the protocol)		See Protocol Amendment.

Applicable Regulatory Requirement(s)	Drug Regulatory Authority of Pakistan, law(s) and regulation(s) addressing the conduct of clinical trials of investigational products.
Approval (In relation to Institutional Review Boards)	The affirmative decision of the IRB that the clinical trial has been reviewed and may be conducted at the institution site within the constraints set forth by the IRB, the institution, Good Clinical Practice (GCP), and the applicable regulatory requirements.
Audit	A systematic and independent examination of trial related activities and documents to determine whether the evaluated trial related activities were conducted, and the data were recorded, analyzed and accurately reported according to the protocol, sponsor's standard operating procedures (SOPs), Good Clinical Practice (GCP), and the applicable regulatory requirement(s).
Audit Certificate	A declaration of confirmation by the auditor that an audit has taken place.
Audit Report	A written evaluation by the sponsor's auditor of the results of the audit.
Audit Trail	Documentation that allows reconstruction of the course of 9
Blinding/Masking	A procedure in which one or more parties to the trial are kept unaware of the treatment assignment(s). Single-blinding usually refers to the subject(s) being unaware, and double blinding usually refers to the subject(s), investigator(s), monitor, and, in some cases, data analyst(s) being unaware of the treatment assignment(s).
Case Report Form (CRF)	A printed, optical, or electronic document designed to record all of the protocol required information to be reported to the sponsor on each trial subject.
Certified Copy	A copy (irrespective of the type of media used) of the original record that has been verified (i.e. by a dated signature or by generation through a validated process) to have the same information, including data that describe the context, content, and structure, as the original.
Clinical Trial Import Licence (CTIL)	DRAP, authorizing the licensee to import any product for purposes of clinical trials, notwithstanding that the product is not a registered product, or a license issued by DRAP authorizing the licensee to import any registered or unregistered product for purposes of clinical trials.
Clinical Trial/Study	Any investigation in human subjects intended to discover or verify the

clinical, pharmacological and/or other Pharmacodynamics effects of an investigational product(s) and/or to identify any adverse reactions to an investigational product(s) and/or to study absorption, distribution, metabolism, and excretion of an investigational product(s) with the object of ascertaining its safety and/or efficacy. The terms clinical trial and clinical study are synonymous.

Clinical trials (Phase) A systematic study on pharmaceutical products in human subjects (including patients and other volunteers) in order to discover or verify the effects of and/or identify any adverse reaction to investigational products, and/or to study the absorption, distribution, metabolism and excretion of the products with the object of ascertaining their efficacy and safety.

Clinical trials are generally classified into Phases I to IV. It is not possible to draw distinct lines between the phases, and diverging opinions about details and methodology do exist. Brief descriptions of the individual phases, based on their purposes as related to clinical development of pharmaceutical products, are given below:

Phase I These are the first trials of a new active ingredient or new formulation in humans/animals often carried out in healthy volunteers. Their purpose is to establish a preliminary evaluation of the safety and the pharmacokinetic, and where possible the pharmacodynamics profile of the active ingredient(s) in humans/animals

Phase II These trials are performed in a limited number of subjects and are often, at a later stage, of a comparative (e.g. placebo-controlled) design. Their purpose is to demonstrate therapeutic activity and to assess short-term safety of the active ingredient in patients suffering from a disease or condition for which the active ingredient is intended. This phase also aims at the determination of appropriate dose ranges or regimens and (if possible) clarification of dose-response relationships in order to provide an optimal background for the design of extensive therapeutic trials.

Phase III Trials in larger (and possibly varied) patient groups with the purpose of determining the short-and long-term safety/efficacy balance of formulation(s) of the active ingredient, and of assessing its overall and relative therapeutic value. The pattern and profile of any frequent adverse reactions must be investigated and special features of the product must be explored (e.g. clinically-relevant drug interactions, factors leading to differences in effect such as age). These trials should

preferably be of a randomized double-blind design, but other designs may be acceptable, e.g. long-term safety studies. Generally, the conditions under which these trials are carried out should be as close as possible to normal conditions of use.

Phase IV Studies performed after marketing of the pharmaceutical product. Trials in phase IV are carried out on the basis of the product characteristics on which the marketing authorization was granted and are normally in the form of post-marketing surveillance, or assessment of therapeutic value or treatment strategies. Although methods may differ, these studies should use the same scientific and ethical standard as applied in premarketing studies. After a product has been placed on market, clinical trials designed to explore new indications, new methods of administration or new combinations, etc. are normally considered as trials for new pharmaceutical products.

Clinical Trial/Study Report A written description of a trial/study of any therapeutic, prophylactic, diagnostic agent conducted in human subjects, in which the clinical and statistical description, presentations, and analyses are fully integrated into a single report (see the ICH Guideline for Structure and Content of Clinical Study Reports).

Clinical application trial The clinical trial application (CTA) is the dossier that includes all documentation pertaining to the conduct of clinical trial in country according to the regulation. The dossier includes a cover letter, CV's of investigators, protocol and an investigator's brochure or product information etc.
(Protocol and Investigator's brochure should be in accordance with ICH-GCP guidelines).

Compliance (in relation to trials) Adherence to all the trial-related requirements, Good Clinical Practice (GCP) requirements, and the applicable regulatory requirements.

Comparator Product An investigational or marketed product (i.e. active control) or placebo, used as a reference in a clinical trial.

Confidentiality Prevention of disclosure, to other than authorized individuals, of a sponsor's proprietary information or of a subject's identity.

Contract A written, dated, and signed agreement between two or more involved parties that sets out any arrangements on delegation and distribution of tasks and obligations and, if appropriate, on financial

matters. The protocol may serve as the basis of a contract.

Contract Research Organization (CRO)	A person or an organization (commercial, academic, or other) contracted by the sponsor to perform one or more of a sponsor's trial-related duties and functions.
Coordinating Committee	A committee that a sponsor may organize to coordinate the conduct of a multicenter trial.
Coordinating Investigator	An investigator assigned the responsibility for the coordination of investigators at different centers participating in a multicenter trial.
Direct Access	Permission to examine, analyze, verify, and reproduce any records and reports that are important for evaluation of a clinical trial. Any party (e.g., domestic and foreign regulatory authorities, sponsor's monitors and auditors) with direct access should take all reasonable precautions within the constraints of the applicable regulatory requirement(s) to maintain the confidentiality of subjects' identities and sponsor's proprietary information.
Documentation	All records, in any form (including, but not limited to, written, electronic, magnetic, and optical records, and scans, x-rays, and electrocardiograms) that describe or record the methods, conduct, and/or results of a trial, the factors affecting a trial, and the actions taken.
Drug Regulatory Authority of Pakistan (DRAP)	Regulatory authority established in Pakistan for the purpose of regulating the Control of Therapeutic Goods. Regulates all activities related to import, procurement of raw and packing materials, production and import of finished drugs, export, sales, pricing, etc
Essential Documents	Documents which individually and collectively permit evaluation of the conduct of a study and the quality of the data produced. (See Section 12 of these guidelines)
Good Clinical Practice (GCP)	A standard for the design, conduct, performance, monitoring, auditing, recording, analyses, and reporting of clinical trials that provides assurance, that the data and reported results are credible and accurate, and the rights, integrity, and confidentiality of trial subjects are protected.
Herbal/Animal Medicinal Products	Plant/Animal-derived materials or products with therapeutic or other human or animal health benefits which contain either raw or

processed ingredients from one or more plants/animals.

Independent Data-Monitoring Committee (IDMC) /Data and Safety Monitoring Board (DSMB) Independent data-monitoring committees that may be established by the sponsor to assess at intervals the progress of a clinical trial, the safety data, and the critical efficacy endpoints, and to recommend to the sponsor whether to continue, modify, or stop a trial.

Impartial Witness A person, who is independent of the trial, who cannot be unfairly influenced by people involved with the trial, who attends the informed consent process if the subject or the subject's legally acceptable representative cannot read, and who reads the informed consent form and any other written information supplied to the subject.

Institutional Review Committee (IRC) or Institutional Review Board (IRB) An independent body constituted of medical, scientific, and non-scientific members whose responsibility is to ensure the protection of the rights, safety and well-being of human subjects involved in a trial by, among other things, reviewing, approving, and providing continuing review of trial protocol and amendments and of the methods and material to be used in obtaining and documenting informed consent of the trial subjects and providing continuing review of trial protocol and amendments and of the methods and material to be used.

Informed Consent A process by which a subject voluntarily confirms his or her willingness to participate in a particular trial, after having been informed of all aspects of the trial that are relevant to the subject's decision to participate. Informed consent is documented by means of a written, signed, and dated informed consent form. Informed consent should be in accordance with Section 4.8 of the ICH-GCP Guidelines, and should be in English, National (Urdu) & Local language. (See Annexure-III).

Inspection The act by a regulatory authority (ies) of conducting an official review of documents, facilities, records, and any other resources that are deemed by the authority (ies) to be related to the clinical trial that may be located at the site of the trial, at the sponsor's and/or contract research organizations (CRO's) facilities, or at other establishments deemed appropriate by the regulatory authority (ies).

Institution (Medical) Any public or private entity or agency or medical or dental facility where clinical trials are conducted.

Interim Clinical Trial/Study Report A report of intermediate results and their evaluation based on analyses performed during the course of a trial.

Investigational Product	A pharmaceutical form of an active ingredient or placebo being tested or used as a reference in a clinical trial, including a registered product when used or assembled (formulated or packaged) in a way different from the approved form, or when used for an unapproved indication or when used to gain further information about an approved use.
Investigator	A person responsible for the conduct of the clinical trial at a trial site. If a trial is conducted by a team of individuals at a trial site, the investigator is the responsible leader of the team and may be called the principal investigator. Principle Investigator will be responsible for whole Clinical Studies / Trial.
Investigator Institution	A person responsible for the conduct of the clinical trial at a trial site. If a trial is conducted by a team of individuals at a trial site, the investigator is the responsible leader of the team and may be called the principal investigator.
Investigator's Brochure	A compilation of the available clinical and non-clinical data on the investigational product(s) which is relevant to the study of the investigational product(s) in human subjects or animals. Investigator brochure should be in accordance with Section 7 of ICH-GCP guidelines, as per Rule 15 of the Bio-Study Rules 2017. (See Section 11 of these guidelines).
Manufacture	All operations that include purchase of materials and products production, quality control, release, storage, shipment (from storage related to manufacturing site) of finished products, and related controls.
Manufacturer	A company that carries out at least one step of production as well as the final release of the finished product.
Monitoring	The act of overseeing the progress of a clinical trial, and of ensuring that it is conducted, recorded, and reported in accordance with the protocol, Standard Operating Procedures (SOPs), Good Clinical Practice (GCP), the Bio-Study Rules 2017, DRAP Act 2012 and the rules made under.
Monitoring Plan	A document that describes the strategy, methods, responsibilities, and requirements for monitoring the trial.
Monitoring Report	A written report from the monitor to the sponsor after each site visit

and/or other trial-related communication according to the sponsor's SOPs.

Multi-center Trial	A clinical trial conducted according to a single protocol but at more than one site, and therefore, carried out by more than one investigator.
Opinion (in relation to Independent Ethics Committee)	The judgment and/or the advice provided by an Independent Ethics Committee (IEC).
Product (synonym: medical product)	A drug in a pharmaceutical dosage form, a medical device or a cosmetic, having a singular identity, composition, characteristics and origin.
Protocol	A document that describes the objective(s), design, methodology, statistical considerations, and organization of a clinical trial. The protocol usually also gives the background and rationale for the trial, but these could be provided in other protocol referenced documents. Throughout these Guideline the term protocol refers to protocol and protocol amendments. The protocol should be in accordance with section 6 of the ICH-GCP guidelines.
Protocol Amendment	A written description of a change(s) to or formal clarification of a clinical trial protocol.
Quality Assurance (QA)	All those planned and systematic actions that are established to ensure that the trial is performed and the data are generated, documented (recorded), and reported in compliance with Good Clinical Practice (GCP) and the applicable regulatory requirement(s).
Quality Control (QC)	The operational techniques and activities undertaken within the quality assurance system to verify that the requirements for quality of the trial-related activities have been fulfilled.
Randomization	The process of assigning trial subjects to treatment or control groups using an element of chance to determine the assignments in order to reduce bias.
Registered Product	Any product approved or permitted to be marketed in the country by DRAP
Serious Adverse Event or serious	Any untoward medical occurrence that at any dose: - Results in death.

Adverse Reaction	Drug	<ul style="list-style-type: none"> - Is life –threatening. - requires inpatient hospitalization or prolongation of existing hospitalization - results in persistent or significant disability/in capacity, or - Results in a congenital anomaly/birth defect.
Side effect		Unintended effect occurring at normal dose related to the pharmacological properties of a drug.
Source Documents		Original documents, data, and records (e.g. hospital records, clinical and office charts, laboratory notes, memoranda, subjects' diaries or evaluation checklists, pharmacy dispensing records, recorded data from automated instruments, copies or transcriptions certified after verification as being accurate copies, microfiches, photographic negatives, microfilm or magnetic media, x-rays, subject files, and records kept at the pharmacy, at the laboratories and at medico-technical departments involved in the clinical trial).
Sponsor		An individual, company, institution, or organization which takes responsibility for the initiation, management, and/or financing of a clinical trial.
Sponsor-Investigator		An individual who both initiates and conducts, alone or with others, a clinical trial, and under whose immediate direction the investigational product is administered to, dispensed to, or used by a subject. The term does not include any person other than an individual (e.g., it does not include a corporation or an agency). The obligations of a sponsor-investigator include both those of a sponsor and those of an investigator.
Sub investigator		Any individual member of the clinical trial team designated and supervised by the investigator at a trial site to perform critical trial-related procedures and/or to make important trial-related decisions, (e.g., associates, residents, research fellows). See also Investigator.
Subject/Trial Subject		<p>In this guideline, subject means animal and/or human participants in a clinical trial.</p> <p>An individual who participates in a clinical trial, either as a recipient of the investigational product(s) or as a control.</p>
Subject Identification Code		A unique identifier assigned by the investigator to each trial subject to protect the subject's identity and used in lieu of the subject's name when the investigator reports adverse events and/or other trial related data.
Trial Site		The location(s) where trial-related activities are actually conducted.
Unexpected Adverse		An adverse reaction, the nature or severity of which is not consistent with the applicable product information (e.g., Investigator's Brochure

Drug Reaction	for an unapproved investigational product or package insert/summary of product characteristics for an approved product) (see the ICH guidelines (e.g., E2A (clinical safety data management), for Clinical Safety Data Management: Definitions and Standards for Expedited Reporting).
Unregistered Product	Any product that is not registered or permitted to be marketed in the country by the DRAP.
Well-being (of the trial subjects)	The physical and mental integrity of the subjects in a clinical trial.

3. INTRODUCTION

These guidelines as outlined are drawn in conformity with the legal requirements of the Bio-Study Rules 2017, Drug Act 1976 and DRAP Act, 2012 and the rules framed there under. It is required that all the therapeutic goods and health products used in Pakistan are registered with the Drug Regulatory Authority of Pakistan (DRAP) and any clinical trial using such registered or unregistered products must receive written approval (i.e. license for Clinical Trial Site & Clinical Studies) from DRAP, under the Bio-Study Rules 2017 for that purpose.

These guidelines set out the procedures that should be followed by applicants who wish to conduct clinical trials in Pakistan and the steps that DRAP will take to review, evaluate and permit the conduct of such trials.

The review and approval process in Pakistan expected to take on average 60 to 90 working days from the time the completed application is received by the Division of Pharmacy Services in DRAP.

Approval by DRAP for conduct of the clinical trial does not absolve the applicant from compliance with all laws and regulations in Pakistan.

4. RESPONSIBILITIES OF STAKEHOLDERS INVOLVED IN CLINICAL TRIAL ACTIVITIES:

Following Stakeholders are involved in clinical trial activities

a. DRAP:

Drug Regulatory Authority of Pakistan is the National Regulatory Agency (NRA), responsible for issues related to safety, quality, efficacy, handling and use of investigational products in clinical trials under Rule 3 and 7 of the Bio-Study Rules 2017 and sub-section (c) (ix) of section 7 of Drug Regulatory Authority of Pakistan Act, 2012.

No person may carry out any clinical trial in Pakistan, in respect of any drug unless he or she is in possession of a certificate / license issued by DRAP.

b. National Bio Ethics Committee of Pakistan Health Research Council, Islamabad.

NBC-PHRC is responsible for ethical approval of all Clinical Trials to be conducted in Pakistan, prior approval from NBS-PHRC, is mandatory for CTA to DRAP, as per Rule 9(1) of

the Bio-Study Rules 2017.

c. Public or Private Health Institution's IRC / IRB:

As per Rule 9(1)& (3)of the Bio-Study Rules 2017.IRB / IRC of the Public or Private Health Institutions shall be responsible for ethical clearance &periodic review of the clinical trial, being carried out in the institution, and submission of their reports to the CSC.

d. PPMA and Pharma Bureau

As per rule 13 (1) sub-rule (i), one representative of Pakistan Pharmaceutical Manufacturer Association and the Pharma Bureau, each having fifteen years of experience and expertise of conducting Clinical Trials and BA or BE studies, to be nominated by the Authority as observer for the CSC.

GUIDELINES FOR THE SUBMISSION, REVIEW AND EVALUATION OF APPLICATIONS FOR THE CONDUCT OF CLINICAL TRIALS IN PAKISTAN.

5. PROCEDURES FOR SUBMISSION OF APPLICATIONS

5.1. Where to Apply?

The application to conduct a clinical trial in Pakistan should be submitted to:

Chairman CSC / Director,
Division of Pharmacy Services, Drug
Regulatory Authority of Pakistan
3rd Floor, T.F Complex,
7 – Mauve Area,
G-9/4, Islamabad.

Or

**Secretary CSC / Additional
Director,**
Division of Pharmacy Services, Drug
Regulatory Authority of Pakistan
3rd Floor, T.F Complex,
7 – Mauve Area,
G-9/4, Islamabad.

5.2. Who can apply?

The Sponsor or the Principal investigator who intends to conduct a clinical trial in Pakistan shall make the application.

5.3. Application Fee

Every application for conducting a clinical trial shall be accompanied with a non-refundable processing fee, as approved and notified by the Authority. The fee shall be paid in the bank account of Drug Regulatory Authority of Pakistan.

5.4. The Clinical Trial Site & Clinical Trials Application Form (CTA)

- i. Application for approval of Clinical Trial Site shall be made on prescribed Form I of the

- Bio-Study Rules 2017.
- ii. Application for authorization of the conduct of a Clinical Trial shall be made on prescribed Form II of the Bio-Study Rules 2017.
 - iii. Application for Renewal of License of the Clinical Trial Site, shall be made on prescribed Form III of the Bio-Study Rules 2017.
 - iv. All Application forms are available at the DRAP Head Office or on the DRAP website (www.dra.gov.pk)
 - v. Only one copy of completed form shall be submitted for each application.
 - vi. The application should be submitted in writing, in the format and numbering as set out in the Application Forms. The text and diagrams must be clear and legible (use 12 pt. Times New Roman font).
 - vii. The detail requested in the application form should be completed briefly but in full, to enable quick review of studies. However each section should be cross-referenced to the detail in the Trial Protocol, Investigators Brochure, and other appended documentation. Trial Protocol & Investigator Brochure should be in accordance with Section 6 & Section 7 of the ICH-GCP Guidelines respectively.

5.5. Presentation of the Application

The application should be bound in a single volume (or series of volumes) and the pages of the CTA numbered sequentially. The appended documents should be bound together with the application, with tabbed sections identifying each appended document.

5.6. Supporting documentations

Complete, legible copies of key (peer reviewed) publications supporting the information in the application should be attached. They should be cross-referenced from within the CTA text. Additional data will be requested as and when necessary. Requests for additional publications may delay the application.

5.7. Electronic format

The Protocol, Investigators Brochure, and Reference publications should also be supplied on appropriate data storage device. Microsoft Word version 7 or later is an acceptable format, as well as Portable Document Format (PDF) files.

5.8. Language

Application for Clinical Trial License must be in English. All other data, particulars supporting documentations, labels and package inserts must also be in English. When supporting documentation is not originally in English, a copy of the document in its

original language, accompanied by authenticated translation in English shall be submitted.

5.9. Confidentiality

Drug Regulatory Authority of Pakistan commits to maintain the confidentiality of any information submitted as part of a clinical trial application, supporting documents or associated correspondence.

6. Clinical Studies Committee (Experts Committee / Advisory Committee)

6.1. Selection:

As per Rule 13(1) of the Bio-Study Rules 2017, the DRAP consider and nominate the experts with requisite qualification & experience and the nominated names of experts are forwarded to the Federal Government for approval. After the approval of Federal Government the Clinical Studies Committee is notified in the official gazette of Pakistan.

6.2. Composition

As per Rule 13(1) of the Bio-Study Rules 2017, following experts are members of CSC:

- (a) Director, Division of Pharmacy Services, DRAP, who shall be its ex-officio Chairman;
- (b) Additional Director or Deputy Director, Division of Pharmacy Services, DRAP, who shall be its ex-officio Secretary;
- (c) Chairman, Pakistan Health Research Council or his nominee who may be directly involved in conduct of clinical trials or having experience of conducting clinical trials;
- (d) one clinical pharmacist, from a renowned hospital, having at least five years of experience, to be nominated by the Authority;
- (e) one professor of pharmacology, to be nominated by the Authority;
- (f) one professor of pharmacy, having background of bio-pharmaceutics to be nominated by the Authority;
- (g) one clinician or physician or medical specialist having at least fifteen years of experience, to be nominated by the Authority;
- (h) one statistician, having background of designing and evaluating clinical studies with five years of experience or pharmaceutical professional having five years of

- experience in educational or professional services or practice of statistics, to be nominated by the Authority;
- (i) one representative of Pakistan pharmaceutical manufacturer association and the Pharma bureau, each having fifteen years of experience and expertise of conducting clinical trials and BA or BE studies, to be nominated by the Authority as observer; and
 - (j) Co-opted member to be nominated by the committee for therapeutic goods or any other specific matter.

6.3. Term of reference (TOR)

- 6.3.1.** The members, other than ex-officio members, of the CSC shall hold office for a period of three years and shall be eligible for re-nomination for one more time.
- 6.3.2.** As per section 18 (2) of the DRAP Act 2012, no person shall be the member of the Board or Director if he has immediate family members (parent, child, sibling, or spouse) as senior officials or owners of concern dealing in therapeutic goods.
- 6.3.3.** The quorum to constitute a meeting of the CSC shall not be less than five members.
- 6.3.4.** As per Rule 13(5) of the Bio-Study Rules 2017, the CSC may constitute a sub-committee for the performance of any of its functions.
- 6.3.5.** As per Rule 13(6) of the Bio-Study Rules 2017, the CSC may co-opt any subject related expert person having vast experience in the relevant field for advice on any particular matter under consideration.
- 6.3.6.** As per Rule 13(9) of the Bio-Study Rules 2017, the CSC may delegate any of its powers to Chairman of the Committee in writing with appropriate justification.

6.4. Functions & Responsibilities

As per Rule 13(4) of the Bio-Study Rules 2017, the CSC shall perform the following functions, namely:-

- a. screening, assessment, review and evaluation of applications for license of clinical trials, clinical trial sites, BA or BE studies, center and CRO;
- b. screening, assessment, review and evaluation of applications for approval or registration of clinical trials and BA or BE studies;

- c. inspection of the premises prior to grant of license, approval of clinical trial, BA or BE study and during and after the completion of the trial or study, if so desired, by a panel constituted by the CSC and any co-opted member under sub-rule (6) of rule 13, any site where clinical trial and BA or BE study is planned to be conducted, to satisfy itself of the observance of conditions, guidelines or criteria as notified by the DRAP;
- d. grant, reject or suspend approval of a clinical trial and BA or BE study;
- e. Grant, reject or suspend a license to center, clinical trial site, CRO and laboratory.
- f. Evaluate the continuing review report on clinical trials and BA or BE studies submitted periodically by the IRB, sponsor, CRO or investigator and centers, as the case may be.
- g. Renewal or extension of approval or registration to a clinical trial and BA or BE study.
- h. Renewal of license to center, clinical trial site, CRO and laboratory.

6.5. Conflict of Interest

All the members of the CSC shall declare the conflict of interest at the time of their appointment, in accordance with the DRAP's policy on Conflict of Interest.

7. PROCEDURES FOR REVIEW AND APPROVAL OF APPLICATION

7.1. Completeness of application form, document and fee

On receipt, Division of Pharmacy Services, DRAP will screen the application within 10 working days for its completeness. Application for conduct of clinical studies shall essentially be complete in the first instance if it includes all documents, study Protocol & Investigator Brochure should be in accordance with Section 6 & Section 7 of the ICH-GCP Guidelines respectively, and appendices and one copy of the complete checklist.

All applications thoroughly reviewed and evaluated by the Division of Pharmacy Services, and shall be placed before the CSC in its upcoming meeting for the consideration.

All applications should be accompanied with prescribed fee.

Application Reference Number

When an application is received, an acknowledgement of receipt will be issued with a reference number for each application. This reference number must be stated in all correspondence concerning the application.

7.2. Supplementary Information and Updates

Any new information available for the product such as adverse effects, changes in formulation or manufacturer for the active ingredients or finished products must be reported to DRAP. If changes such as protocol amendments, consent form updates and additional trial sites are made, DRAP must be immediately informed. The DRAP may request for further supplementary data or documentation when appropriate.

In case additional quantity of study medication(s), additional trial site(s), additional new product, additional manufacturing site/re-packer, additional port of entry, and change of applicant, extension of product's shelf life or a new protocol, that should be in accordance with Section 6 of the ICH-GCP guidelines, is required. A new CTA must be made where the sponsor/PI will need to fill in the relevant section where changes applied.

7.3. Experts review

The application if required, maybe reviewed by experts designated / nominated by Clinical Studies Committee (CSC). There will be confidentiality agreement with the reviewers and committee members to ensure that the content of the application remains confidential.

The initial review may result in queries that need to be answered by the applicant. The reviewers will not have direct contact with the applicant and all correspondence should be directed through Pharmacy Services Division, DRAP only.

The reviewers will generate a report that shall be placed before the CSC in its very next meeting for the consideration.

7.4. Approval

The Clinical Studies Committee (CSC) will be responsible for evaluation and approval of the application, if the application is complete and deems fit.

The Clinical Studies Committee (CSC) may approve or may reject the application and specify the reasons for rejection.

Approval will be dependent on completeness of application and receipt of approval of the

protocol by the National Bio-ethics Committee (NBC-PHRC) of Pakistan Health Research Council.

The Approval for importation of investigational trial material will be dealt / approved by Quality Assurance and Lab Testing (QA & LT) Division of DRAP, under the Drug Import & Export Rules 1976, depending on the approval of the conduct of clinical studies under the Bio-Study Rules 2017.

The decisions of the Clinical Studies Committee (CSC) will be communicated to the applicants in writing, by the Secretary CSC after approval of minutes of the CSC meeting.

In case of rejection, the applicant may appeal before Appellate Board and provide additional information where applicable and whenever required.

7.5. Post-trial review

It is mandatory under the section 8 (3) & (6) of the Bio-Study Rules 2017, that the Final Report from each study conducted in Pakistan should be submitted to the DRAP. Following review of all submissions, DRAP will then pronounce itself on the conduct of that clinical trial.

7.6. Relevant CT decisions, reports or information from other NRAs or SRAs

As per Rule 13 (8), the CSC shall also consider relevant clinical trial decisions, reports or other information from stringent regulatory authorities and regional or international bodies like WHO, ICH and others. Any application for approval or registration of clinical trial will not undergo in the assessment process, if the same at any stage, has already been rejected, suspended or put on hold due to any reason, in ICH member countries or stringent regulatory authorities and shall be rejected during the process of screening.

7.7. Situation in which routine procedures for Clinical Trial application may not be required.

As per Rule 7(10) of the Bio-Study Rules 2017, CSC may process the application of a clinical trial on fast-track basis if it feels necessary to do so in the best public interest or in public health emergency cases, after recording the reason therefore.

In any health emergency condition or in best of public interest, Chairman CSC may call CSC meeting exercising his power conferred in Rule 13(7) of the Bio-Study Rules, for fast track processing of the application, if CSC feels it deems fit.

8. ETHICAL APPROVAL OF THE CLINICAL TRIAL

It is mandatory under rule 9 of the Bio-Study Rule 2017, that ethical approval of the Clinical Studies Protocol, Protocol Amendments and of the methods and material to be used in obtaining and documenting informed consent of the trial subjects, is required to be sought from Institutional Review Committee (IRC) or Institutional Review Board (IRB), and National Bio-ethics Committee (NBC) of Pakistan Health Research Council, Islamabad.

9. THE INSTITUTIONAL REVIEW COMMITTEE (IRC) or INSTITUTIONAL REVIEW BOARD (IRB)

As per rule 9 of the Bio-Study Rules 2017, IRC or IRB is an independent body, constituted by medical professionals and non-medical members, whose responsibility is to verify that the safety, integrity and human rights of the subjects participating in a particular trial are protected, thereby providing public reassurance. IRC / IRB should be constituted and operated so that the suitability of the investigators, facilities, protocols, the eligibility of trial subject groups, and the adequacy of confidentiality safeguards may be objectively and impartially reviewed independently of the investigator, sponsor, and relevant authorities.

The IRB should consist of following number of members, who collectively have the qualifications and experience to review and evaluate the science, medical, legal aspects and ethics of the proposed trial. The IRB should include,-

- (a) At least five members;
- (b) At least one member whose primary area of interest is in a non-scientific area; and
- (c) At least one member who is independent of the institution or trial site.

No person involved in a clinical trial study should be part of IRB and independent ethics committee or NBC.

The funding and source of funding of IRB and its members be clearly defined and documented.

The IRB shall be responsible for the periodic review of the clinical trial study, and submission of their reports to the CSC.

10. NATIONAL BIO-ETHICS COMMITTEE (NBC)

NBC is the major, official body to uphold the bioethical principles in all sectors of health-care

in the country. The purpose of NBC is to safeguarding the dignity, rights, safety and well-being of subjects who seek assistance to safeguard their health, be their treatment, as the participants in research projects in the country, as teachers and the taught, and publications in the medical field. NBC is expected to take care of the principle of justice in the equitable distribution of resources for health delivery.

As per rule 9 of the Bio-Study Rules 2017, it is mandatory for the applicants who are willing to conduct clinical trials or studies, to seek prior approval from National Bioethics Committee (NBC) of Pakistan.

11.AMENDMENTS TO THE TRIAL PROTOCOL.

As per Rule 8 (10), No amendments in the approved protocol of trial or study can be made without seeking prior approval from CSC. If amendment is essential, it is recommended that the application should be withdrawn and the complete amended version re-submitted. If DRAP requires amendments, only the revised section may be replaced.

As per Rule 15 of the Bio-Study Rules 2017, DRAP adopted ICH-GCP Guidelines, so the protocol should be in accordance with Section 6 of the ICH-GCP guidelines.

If the amendment is judged (by Principal Investigator) as urgently necessary to protect life or well-being of trial participants or the community, the change may be effected immediately, and the investigator must inform the IRB / IRC, NBC-PHRC DRAP within 48 hours - by telephone followed by a written full explanation and the information in 4.3 below,

If the amendment may affect the safety of the trial participants (e.g. changes to dose, regimen, concomitant medication, monitoring, etc.) the amendment must be submitted in full, and approval from DRAP, NBC-PHRC, and IRB / IRC obtained prior to implementation.

If the amendment is unlikely to impact on participant safety (e.g. change of investigator (except Principle Investigator), end point assay, laboratory, statistical analysis, etc.) the full detail of the change must be submitted in writing, and the change may be implemented 14 days after receipt of the amendment by DRAP, if no notification to the contrary is received by the applicant within that period.

Information to be supplied when submitting a protocol amendment;

- i. An amended CTA form should be completed.
- ii. A **Bold Heading** should note that this is an Amendment and the date.
- iii. Each amendment should be BOLD and in a BOX at the relevant position in the text.

- iv. A table in a covering letter should detail all amended parts of the Application Form.
- v. The reasons for the amendments must be provided.
- vi. The possible consequences for participants already enrolled must be described.
- vii. Where an amended Participant Information Leaflet & Informed Consent form may be required any additional risks or safety issues should be highlighted.
- viii. The amended supporting documents should be appended, including any new relevant publications.

The Pharmacy Services Division, DRAP will review the application together with supporting approval from the IRB / IRC and NBC-PHRC. It will referred to Clinical Studies Committee (CSC) in its very next meeting for expert review and consideration for approval of the amendment(s).

12.INSPECTION (AUDIT) BY DRUG REGULATORY AUTHORITY OF PAKISTAN

An inspection or audit of Clinical Trial Site and or Clinical Trial Studies may be conducted by the Experts nominated by the Clinical Studies Committee (CSC) or DRAP. The aim is to evaluate the acceptability of clinical data submitted to DRAP, and to ensure that legislation, Good Clinical and Laboratory Practice (GCLP) principles and practices as elaborated in the latest version of ICH-GCP Guidelines, the Bio-Study Rules, 2017 and in this guideline are adhered. The nominated experts or responsible officer of the regulatory authority may contact the PI or sponsor for the date of inspection when required.

- i. Inspection of Clinical Trial Site may be conducted by panel or team nominated by the CSC upon direction of CSC before and after approval of the site.
- ii. Such inspections may be before commencement of the trial, or at predetermined intervals, or may be on the direction of the Clinical Studies Committee (CSC), responsible for clinical trial review.
- iii. However, in the case of complaints or reports of unexpected adverse reactions, inspections may take place at short notice and may be unannounced.

The Inspections will include - but not be limited to:

- i. The facilities and staff used for the trial: as approved by the Clinical Studies Committee (CSC) under the Bio-Study Rules 2017.
- ii. Compliance with the approved Protocol.
- iii. All amendments to the Protocol, which may have been approved.
- iv. Accurate, complete and current records according to the Protocol.
- v. Verifying that Serious Adverse Events are reported as required by the Protocol.
- vi. Verifying that inspections intended to monitor and audit the trials are conducted as

required by the Protocol and the reports are available for inspection.

13.REPORTS AND FINAL REVIEW

13.1. Reports of Serious Adverse Events

As per Rule 8(5) any adverse reaction shall be reported immediately to the concerned section (i.e. Pakistan National Pharmacovigilance Centre (PNPC)) of the DRAP, The PI shall report to IRB / IRCs and the sponsor with copies to Pharmacy Services Division, DRAP all serious adverse events (SAEs), both expected or unexpected, as soon as possible but not later than seven (7) calendar days upon receiving notice of such event.

Sponsor shall bound the investigator to report all serious adverse events immediately to him except for those that the protocol or investigator's brochure identifies as not requiring immediate reporting. The immediate report shall be followed by detailed, written reports. The immediate and follow-up reports shall identify subjects by unique code numbers assigned to the latter.

Adverse events and laboratory abnormalities identified in the protocol as critical to safety evaluations shall be reported to the sponsor according to the reporting requirements and within the time periods specified in the protocol.

For reported deaths of a subject, the investigator shall supply the sponsor and the Ethics Committee with any additional information requested.

The sponsor shall keep detailed records of all adverse events which are reported to him by the investigator or investigators. These records shall be submitted to the PNPC in connection to the clinical trials report.

The PNPC shall ensure that all suspected unexpected serious adverse reactions to an investigational drug which are brought to its attention are recorded.

Sponsor shall report domestic adverse drug reactions and adverse events occurring during the clinical trials to the PNPC as per following timelines, namely;-

- (a) the sponsor shall ensure that all relevant information about domestic suspected unexpected serious adverse reactions (SUSAR) occurring in clinical investigation, that are fatal or life-threatening are recorded and reported as soon as possible to the PNPC, and in any case no later than seven calendar days after knowledge by the sponsor of such a case, and the relevant follow-up information is subsequently communicated within additional eight calendar days;

- (b) all other domestic suspected unexpected serious adverse reactions (SUSARs) that are not fatal life-threatening shall be reported to the PNPC as soon as possible but within a maximum of fifteen calendar days of first knowledge by the sponsor; and
- (c) Non-serious AEs or ADRs shall not be reported on expedite basis but shall be included in the periodic reports.

Sponsor shall submit DSUR as per International Council on Harmonization (ICH) format for as long as the sponsor conducts clinical trials in Pakistan with the investigational drug. For the ease of manufacturer or drug registration holder or sponsor, the DSUR shall be submitted for all ongoing clinical trials that

The sponsor is conducting or has completed during the review period including,-

- (a) clinical trials conducted using an investigational drug whether with or without a registration, i.e., human pharmacology, therapeutic exploratory and therapeutic confirmatory trials (Phase I – III);
- (b) clinical trials conducted using marketed or registered drugs / therapeutic goods in approved indications, i.e., therapeutic use trials (Phase IV);
- (c) other therapeutic use of an investigational drug (e.g., expanded access programmes, compassionate use programmes, particular patient use, single patient investigational new drugs / therapeutic goods, and treatment investigational new drugs / therapeutic goods);and
- (d) Comparability trials conducted to support changes in the manufacturing process of the drug.

The DSUR shall be submitted annually no later than sixty calendar days from the DSUR's DLP. The DLP of the DSUR should be based on DIBD.

If the investigational drug has received accelerated approval or registration, and clinical trials continue or are initiated, both a PBRER and a DSUR should be prepared in accordance with directions from PNPC. The sponsor shall change the DSUR's, DLP to coincide with the IBD so that the DSUR and the PBRER can be synchronized. In synchronizing the DLP for the DSUR and PBRER, the period covered by the next DSUR should be no longer than one year.

When submission of an annual DSUR report is no longer required, the sponsor should indicate that the final DSUR serves as the last annual report for the investigational drug. The sponsor should also indicate whether or not clinical trials are continuing elsewhere.

Additional follow up information should be made available to Pharmacy Services Division, DRAP as soon as possible, but in any case not later than fifteen (15) calendar days.

13.2. Progress and Final Trial Reports

As per Rule 8 of the Bio-Study Rule 2017, progress reports and final results of the clinical trial at the completion of the investigation must be communicated to the CSC. In the case of trials lasting for more than 6 months, an interim report shall be submitted at 6 months' intervals or as may be directed by the CSC or Pharmacy Services Division, DRAP. The interim report shall include the number of patients so far treated, number and type of Serious Adverse Events (SAEs) reported, number of discontinued patients and the reasons for discontinuation.

The PI or sponsor shall submit an End of Study Summary Report pertaining to the sites conducting the trial to DRAP, within 3 months from the Last Patient Out (LPO)/ Last Patient Last Visit (LPLV) date.

In case of a multi-center trial within the country, with different end times, a report on each site shall be submitted before the end of the 3rd month from the last subject out.

A Final Report on the trial findings shall then be submitted not later than 3 months of completion of the whole trial.

13.3. Product Accountability and Disposal

According to Rule 8(13) of the Bio-Study Rules 2018, the destruction of unused investigational products should be carried out after seeking approval from the CSC which shall nominate officers to accompany during the process of destruction of investigational products.

Investigational product Accountability / Disposal report shall be submitted to Division of Pharmacy Services, DRAP, within 3 months from the Last Subject Out date. The report will be placed before CSC, in very next meeting of the CSC,

The report should include:

- i. Date the trial started and ended and the Licence/certificate number.
- ii. Clinical Studies Licence and Clinical Trial Site Licence for the relevant site.
- iii. Date(s) and quantity received for each trial product
- iv. Balance of the study medical product.
- v. Drug Destruction Certificate issued by DRAP, and/or written evidence of re-export of the unused drug supplies to country of origin (whichever applicable).

This guideline does not cater for radioactive substances. For such substances, the international

guidelines for radioactive substances will be applied.

13.4. Archiving

It is the responsibility of the investigator and the sponsor to archive and ensure the safety of all the documents related to the trial. The license holder/applicant should inform DRAP in writing prior to destroying the documents. Documents shall be retained for a minimum period of 5 years, after Clinical Trial completion.

14. Clinical Trial Registry

Pharmacy Services Division, DRAP according to Rule 20 of the Bio-Study Rules 2017, shall maintain clinical trial registry for approved clinical trials involving human subjects, and being conducted in Pakistan. (<https://ctr.dra.gov.pk>)

As per Rule 20(2) of the Bio-Study Rules 2017, Clinical trial registry means an official catalog, containing publicly accessible record of approved clinical trials. Content, format and information uploaded to the database of National Trial Registry is as below:

01	Clinical Studies Name	
Title:		
Trial Acronym		
Brief Summery		
Trial Design	Allocation:	
	Intervention Model:	
	Assignment Masking:	
	Primary Purpose:	
Medical Condition		

Trial Phase	
Investigational Product	
Control No.	
Approval Date	
Duration of Trial	
Status	
Target Enrollment	
Eligibility Criteria	
Sex/Gender	
Age Group	
Approved Study Sites in Pakistan	
Participating Countries	
Sponsor	
Funder	
Global Trial Coordinator	
Global Chief Investigator	
Trial Coordinator / Principal Investigator in Pakistan	
Last Update On	

The clinical trial registry of Pakistan shall be a primary registry, which may in future, be linked to the registry network of the International clinical trials registry platform of the WHO (WHO-ICTRP). It shall be a not-for-profit registry, with free and open access to researchers, clinicians, and the general public.

14.1. Trial subject registry.-

A verifiable record of the clinical trial participants or subjects be maintained to stop duplicate enrolment and also to improve both patient safety and preserve data integrity of clinical trials. The subject identification shall be a closed information from the investigator, directly submitted

to the DRAP.

15. INVESTIGATOR'S BROCHURE

15.1. Introduction

The Investigator's Brochure (IB) is a compilation of the clinical and nonclinical data on the investigational product(s) that are relevant to the study of the product(s) in human subjects. Its purpose is to provide the investigators and others involved in the trial with the information to facilitate their understanding of the rationale for, and their compliance with, many key features of the protocol, such as the dose, dose frequency/interval, methods of administration: and safety monitoring procedures. The IB also provides insight to support the clinical management of the study subjects during the course of the clinical trial. The information should be presented in a concise, simple, objective, balanced, and no promotional form that enables a clinician, or potential investigator, to understand it and make his/her own unbiased risk-benefit assessment of the appropriateness of the proposed trial. For this reason, a medically qualified person should generally participate in the editing of an IB, but the contents of the IB should be approved by the disciplines that generated the described data. This guideline delineates the minimum information that should be included in an IB and provides suggestions for its layout. It is expected that the type and extent of information available will vary with the stage of development of the investigational product. If the investigational product is marketed and its pharmacology is widely understood by medical practitioners, an extensive IB may not be necessary. Where permitted by regulatory authorities, a basic product information brochure, package leaflet, or labeling may be an appropriate alternative, provided that it includes current, comprehensive and detailed information on all aspects of the investigational product that might be of importance to the investigator. If a marketed product is being studied for a new use (i.e. a new indication), an IB specific to that new use should be prepared. The IB should be reviewed at least annually and revised as necessary in compliance with a sponsor's written procedures. More frequent revision may be appropriate depending on the stage of development and the generation of relevant new information. However, in accordance with Good Clinical Practice, relevant new information may be so important that it should be communicated to the investigators, and possibly to the Institutional Review Boards (IRBs)/Independent Ethics Committees (IECs) and/or regulatory authorities before it is included in a revised IB. Generally, the sponsor is responsible for ensuring that an up-to-date IB is made available to the investigator(s) and the investigators are responsible for providing the up-to-date IB to the responsible IRBs/IECs. In the case of an investigator sponsored trial, the sponsor -investigator should determine whether a brochure is available from the commercial manufacturer. If the investigational product is provided by the sponsor-investigator, then he or she should provide the necessary information to the trial personnel. In cases where preparation of a formal IB is impractical, the sponsor-investigator should provide, as a substitute, an expanded background information section in the trial protocol that contains the

minimum current information described in this guideline.

15.2. General Considerations

The IB should include:

15.2.1. Title Page

This should provide the sponsor's name, the identity of each investigational product (i.e. research number, chemical or approved generic name, and trade name(s) where legally permissible and desired by the sponsor), and the release date. It is also suggested that an edition number, and a reference to the number and date of the edition it supersedes, be provided. An example is given in Annexure-I.

15.2.2. Confidentiality Statement

The sponsor may wish to include a statement instructing the investigator/recipients to treat the IB as a confidential document for the sole information and use of the investigator's team and the IRB/IEC.

15.3. Contents of the Investigator's Brochure

The IB should contain the following sections, each with literature references where appropriate:

15.3.1. Table of Contents

An example of the Table of Contents is given in Annexure-II.

15.3.2. Summary

A brief summary (preferably not exceeding two pages) should be given, highlighting the significant physical, chemical, pharmaceutical, pharmacological, toxicological, pharmacokinetic, metabolic, and clinical information available that is relevant to the stage of clinical development of the investigational product.

15.3.3. Introduction

A brief introductory statement should be provided that contains the chemical name (and generic and trade name(s) when approved) of the investigational product(s), all active ingredients, the investigational product(s) pharmacological class and its expected position within this class (e.g. advantages), the rationale for performing research with the investigational product(s), and the anticipated prophylactic, therapeutic, or diagnostic indication(s). Finally, the

introductory statement should provide the general approach to be followed in evaluating the investigational product.

15.3.4. Physical, Chemical, and Pharmaceutical Properties and Formulation

A description should be provided of the investigational product substance(s) (including the chemical and/or structural formula (e)), and a brief summary should be given of the relevant physical, chemical, and pharmaceutical properties. To permit appropriate safety measures to be taken in the course of the trial, a description of the formulation(s) to be used, including excipients, should be provided and justified if clinically relevant. Instructions for the storage and handling of the dosage form(s) should also be given. Any structural similarities to other known compounds should be mentioned.

15.3.5. Non-Clinical Studies

The results of all relevant nonclinical pharmacology, toxicology, pharmacokinetic, and investigational product metabolism studies should be provided in summary form. This summary should address the methodology used, the results, and a discussion of the relevance of the findings to the investigated therapeutic and the possible unfavorable and unintended effects in humans. The information provided may include the following, as appropriate, if known/available:

- i. Species tested.
- ii. Number and sex of animals in each group.
- iii. Unit dose (e.g. milligram/kilogram (mg/kg))
- iv. Dose interval.
- v. Route of administration.
- vi. Duration of dosing.
- vii. Information on systemic distribution.
- viii. Duration of post-exposure follow-up.
- ix. Results, including the following aspects:
 - a) Nature and frequency of pharmacological or toxic effects.
 - b) Severity or intensity of pharmacological or toxic effects.

- c) Time to onset of effects.
- d) Reversibility of effects.
- e) Duration of effects.
- f) Dose response.

Tabular format/listings should be used whenever possible to enhance the clarity of the presentation. The following sections should discuss the most important findings from the studies, including the dose response of observed effects, the relevance to humans, and any aspects to be studied in humans. If applicable, the effective and nontoxic dose findings in the same animal species should be compared (i.e. the therapeutic index should be discussed). The relevance of this information to the proposed human dosing should be addressed. Whenever possible, comparisons should be made in terms of blood/tissue levels rather than on a mg/kg basis.

(a) Non-Clinical Pharmacology

A summary of the pharmacological aspects of the investigational product and, where appropriate, its significant metabolites studied in animals, should be included. Such a summary should incorporate studies that assess potential therapeutic activity (e.g. efficacy models, receptor binding, and specificity) as well as those that assess safety (e.g. Special studies to assess pharmacological actions other than the intended therapeutic effect(s)).

(b) Pharmacokinetics and Product Metabolism in Animals

A summary of the pharmacokinetics and biological transformation and disposition of the investigational product in all species studied should be given. The discussion of the findings should address the absorption and the local and systematic bioavailability of the investigational product and its metabolites, and their relationship to the pharmacological and toxicological findings in animal species.

(c) Toxicology

A summary of the toxicological effects found in relevant studies conducted in different animal species should be described under the following headings where appropriate:

- i. Single dose.
- ii. Repeated dose.
- iii. Carcinogenicity.
- iv. Special studies (e.g. irritancy and sensitization).
- v. Reproductive toxicity.
- vi. Genotoxicity (mutagenicity)

15.3.6. Effects in Humans

Introduction:

A thorough discussion of the known effects of the investigational product(s) in humans should be provided, including information on pharmacokinetics, metabolism, pharmacodynamics, dose response, safety, efficacy, and other pharmacological activities. Where possible, a summary of each completed clinical trial should be provided. Information should also be provided regarding results of any use of the investigational product(s) other than from in clinical trials, such as from experience during marketing.

(a) Pharmacokinetics and Product Metabolism in Humans

- A summary of information on the pharmacokinetics of the investigational product(s) should be presented, including the following, if available:

-Pharmacokinetics (including metabolism, as appropriate, and absorption, plasma protein binding, distribution and elimination).

-Bioavailability of the investigational product (absolute, where possible, and/or relative) using a reference dosage form.

-Population subgroups (e.g. gender, age and impaired organ function).

-Interactions (e.g. product-product interactions and effects of food).

-Other pharmacokinetic data (e.g. results of population studies performed within clinical trial(s)).

(b) Safety and Efficacy

A summary of information should be provided about the investigational product's/product's (including metabolites, where appropriate) safety, pharmacodynamics, efficacy, and dose response that were obtained from preceding trials in humans (healthy volunteers and/or patients). The implications of this information should be discussed. In cases where a number of clinical trials have been completed, the use of summaries of safety and efficacy across multiple trials by indications in subgroups may provide a clear presentation of the data. Tabular summaries of adverse drug reactions for all the clinical trials (including those for all the studied indications) would be useful. Important differences in adverse drug reaction patterns/incidences across indications or subgroups should be discussed.

The IB should provide a description of the possible risks and adverse drug reactions to be anticipated on the basis of prior experiences with the product under investigation and with

related products. A description should also be provided of the precautions or special monitoring to be done as part of the investigational use of the product(s).

(c) Marketing Experience

The IB should identify countries where the investigational product has been marketed or approved. Any significant information arising from the marketed use should be summarized (e.g. formulations, dosages, routes of administration, and adverse product reactions). The IB should also identify all the countries where the investigational product did not receive approval/registration for marketing or was withdrawn from marketing/registration.

15.3.7. Summary of Data and Guidance for the Investigator

This section should provide an overall discussion of the nonclinical and clinical data, and should summarize the information from various sources on different aspects of the investigational product(s), wherever possible. In this way, the investigator can be provided with the most informative interpretation of the available data and with an assessment of the implications of the information for future clinical trials.

Where appropriate, the published reports on related products should be discussed. This could help the investigator to anticipate adverse drug reactions or other problems in clinical trials.

The overall aim of this section is to provide the investigator with a clear understanding of the possible risks and adverse reactions, and of the specific tests, observations and precautions that may be needed for a clinical trial. This understanding should be based on the available physical, chemical, pharmaceutical, pharmacological, toxicological, and clinical information on the investigational product(s).

Guidance should also be provided to the clinical investigator on the recognition and treatment of possible overdose and adverse drug a reaction that is based on previous human experience and on the pharmacology of the investigational product.

16. ESSENTIAL DOCUMENTS FOR THE CONDUCT OF A CLINICAL TRIAL

16.1. Introduction

Essential Documents are those documents which individually and collectively permit evaluation of the conduct of a trial and the quality of the data produced. These documents serve to demonstrate the compliance of the investigator, sponsor and monitor with the standards of Good Clinical Practice and with all applicable regulatory requirements.

Essential Documents also serve a number of other important purposes. Filing essential

documents at the investigator/institution and sponsor sites in a timely manner can greatly assist in the successful management of a trial by the investigator, sponsor and monitor. These documents are also the ones which are usually audited by the sponsor's independent audit function and inspected by the regulatory authority (ies) as part of the process to confirm the validity of the trial conduct and the integrity of data collected.

The minimum list of essential documents which has been developed follows. The various documents are grouped in three sections according to the stage of the trial during which they will normally be generated:

- 1) Before the clinical phase of the trial commences,
- 2) During the clinical conduct of the trial, and
- 3) After completion or termination of the trial.

A description is given of the purpose of each document, and whether it should be filed in either the investigator/institution or sponsor files, or both. It is acceptable to combine some of the documents, provided the individual elements are readily identifiable.

Trial master files should be established at the beginning of the trial, both at the investigator/institution's site and at the sponsor's office. A final close-out of a trial can only be done when the monitor has reviewed both investigator/institution and sponsor files and confirmed that all necessary documents are in the appropriate files.

Any or all of the documents addressed in this guideline may be subject to, and should be available for, audit by the sponsor's auditor and inspection by the regulatory authority (ies).

The sponsor and investigator/institution should maintain a record of the location(s) of their respective essential documents including source documents. The storage system used during the trial and for archiving (irrespective of the type of media used) should provide for document identification, version history, search, and retrieval.

Essential documents for the trial should be supplemented or may be reduced where justified (in advance of trial initiation) based on the importance and relevance of the specific documents to the trial.

The sponsor should ensure that the investigator has control of and continuous access to the CRF data reported to the sponsor. The sponsor should not have exclusive control of those data.

When a copy is used to replace an original document (e.g., source documents, CRF), the copy should fulfill the requirements for certified copies.

The investigator/institution should have control of all essential documents and records generated

by the investigator/institution before, during, and after the trial.

16.2. Before the Clinical Phase of the Trial Commences

During this planning stage the following documents should be generated and should be on file before the trial formally starts.

Title of Document		Purpose	Located in the Files of	
			Investigator/Institution	Sponsor
9.2.1	INVESTIGATOR'S BROCHURE	To document that relevant and current scientific information about the investigational product has been provided to the investigator	√	√
9.2.2	SIGNED PROTOCOL AND AMENDMENTS, IF ANY, AND SAMPLE CASE REPORT FORM (CRF)	To document investigator and sponsor agreement to the protocol/amendment(s) and CRF	√	√
9.2.3	INFORMATION GIVEN TO TRIAL SUBJECT		√	√
	- INFORMED CONSENT FORM (including all applicable translations)	To document the informed consent	√	√
	- ANY OTHER WRITTEN INFORMATION	To document that subjects will be given appropriate written information (content and wording) to support their ability to give fully informed consent	√	√
	- ADVERTISEMENT FOR SUBJECT RECRUITMENT (if used)	To document that recruitment measures are appropriate and not coercive	√	—
9.2.4	FINANCIAL ASPECTS OF THE TRIAL	To document the financial agreement between the investigator/institution and the sponsor for the trial	√	√
9.2.5	INSURANCE STATEMENT (where required)		√	√
9.2.6	SIGNED AGREEMENT BETWEEN INVOLVED PARTIES, e.g.:	To document agreements	—	—
	- investigator/institution and sponsor		√	√
	- investigator/institution and CRO		√	√ (where required)
	- sponsor and CRO		—	√
	- investigator/institution and authority(ies) (where required)		√	√
9.2.7	DATED, DOCUMENTED APPROVAL/FAVOURABLE OPINION OF INSTITUTIONAL REVIEW BOARD (IRB) /INDEPENDENT ETHICS	To document that the trial has been subject to IRB/IEC review and given approval/favorable opinion. To identify the version number and date of the document(s)	√	√

	COMMITTEE (IEC) OF THE FOLLOWING: - protocol and any amendments - CRF (if applicable) - informed consent form(s) - any other written information to be provided to the subject(s) - advertisement for subject recruitment (if used) - subject compensation (if any) - any other documents given approval/ favorable opinion			
9.2.8	INSTITUTIONAL REVIEW BOARD/INDEPENDENT ETHICS COMMITTEE COMPOSITION	To document that the IRB/IEC is constituted in agreement with GCP	√	√ (where required)
9.2.9	REGULATORY AUTHORITY(IES) AUTHORISATION/APPROVAL/ NOTIFICATION OF PROTOCOL (where required)	To document appropriate authorization/approval/notification by the regulatory authority(ies) has been obtained prior to initiation of the trial in compliance with the applicable regulatory requirement(s)	√ (where required)	√ (where required)
9.2.10	CURRICULUM VITAE AND/OR OTHER RELEVANT DOCUMENTS EVIDENCING QUALIFICATIONS OF INVESTIGATOR(S) AND SUB-INVESTIGATOR(S)	To document qualifications and eligibility to conduct trial and/or provide medical supervision of subjects	√	√
9.2.11	NORMAL VALUE(S)/RANGE(S) FOR MEDICAL/ LABORATORY/TECHNICAL PROCEDURE(S) AND/OR TEST(S) INCLUDED IN THE PROTOCOL	To document normal values and/or ranges of the tests	√	√
9.2.12	MEDICAL/LABORATORY/TECHNICAL PROCEDURES /TESTS - certification or - accreditation or - established quality control and/or external quality assessment or - other validation (where required)	To document competence of facility to perform required test(s), and support reliability of results	√ (where required)	√
9.2.13	SAMPLE OF LABEL(S) ATTACHED TO INVESTIGATIONAL PRODUCT CONTAINER(S)	To document compliance with applicable labelling regulations and appropriateness of instructions provided to the subjects	—	√
9.2.14	INSTRUCTIONS FOR HANDLING OF INVESTIGATIONAL PRODUCT(S) AND	To document instructions needed to ensure proper storage, packaging, dispensing and disposition of investigational products and trial-related materials	√	√

	TRIAL-RELATED MATERIALS (if not included in protocol or Investigator's Brochure)			
9.2.15	SHIPPING RECORDS FOR INVESTIGATIONAL PRODUCT(S) AND TRIAL-RELATED MATERIALS	To document shipment dates, batch numbers and method of shipment of investigational product(s) and trial-related materials. Allows tracking of product batch, review of shipping conditions, and accountability	√	√
9.2.16	CERTIFICATE(S) OF ANALYSIS OF INVESTIGATIONAL PRODUCT(S) SHIPPED	To document identity, purity, and strength of investigational product(s) to be used in the trial	—	√
9.2.17	DECODING PROCEDURES FOR BLINDED TRIALS	To document how, in case of an emergency, identity of blinded investigational product can be revealed without breaking the blind for the remaining subjects' treatment	√	√ (third party if applicable)
9.2.18	MASTER RANDOMISATION LIST	To document method for randomization of trial population	—	√ (third party if applicable)
9.2.19	PRE-TRIAL MONITORING REPORT	To document that the site is suitable for the trial (may be combined with 9.2.20)	—	√
9.2.20	TRIAL INITIATION MONITORING REPORT	To document that trial procedures were reviewed with the investigator and the investigator's trial staff (may be combined with 9.2.19)	√	√

16.3. During the Clinical Conduct of the Trial

In addition to having on file the above documents, the following should be added to the files during the trial as evidence that all new relevant information is documented as it becomes available.

Title of Document	Purpose	Located in the Files of	
		Investigator/Institution	Sponsor
9.3.1 INVESTIGATOR'S BROCHURE UPDATES	To document that investigator is informed in a timely manner of relevant information as it becomes available	√	√
9.3.2 ANY REVISION TO: - protocol/amendment(s) and CRF - informed consent form - any other written information provided to subjects - advertisement for subject recruitment (if used)	To document revisions of these trial related documents that take effect during trial	√	√
9.3.3 DATED, DOCUMENTED APPROVAL/FAVOURABLE OPINION OF INSTITUTIONAL REVIEW BOARD (IRB) /INDEPENDENT ETHICS COMMITTEE	To document that the amendment(s) and/or revision(s) have been subject to IRB/IEC review and were given approval/favorable opinion. To identify the version number and date of the document(s).	√	√

	(IEC) OF THE FOLLOWING: - protocol amendment(s) - revision(s) of: - informed consent form - any other written information to be provided to the subject - advertisement for subject recruitment (if used) - any other documents given approval/favorable opinion - continuing review of trial (where required)			
9.3.4	REGULATORY AUTHORITY(IES) AUTHORISATIONS/ APPROVALS/NOTIFICATIONS WHERE REQUIRED FOR: - protocol amendment(s) and other documents	To document compliance with applicable regulatory requirements	√ (where required)	√
9.3.5	CURRICULUM VITAE FOR NEW INVESTIGATOR(S) AND/OR SUBINVESTIGATOR(S)	(see 9.2.10)	√	√
9.3.6	UPDATES TO NORMAL VALUE(S)/RANGE(S) FOR MEDICAL/ LABORATORY/ TECHNICAL PROCEDURE(S)/TEST(S) INCLUDED IN THE PROTOCOL	To document normal values and ranges that are revised during the trial (see 9.2.11)	√ (where required)	√
9.3.7	UPDATES OF MEDICAL/LABORATORY/ TECHNICAL PROCEDURES/TESTS - certification or - accreditation or - established quality control and/or external quality assessment or - other validation (where required)	To document that tests remain adequate throughout the trial period (see 9.2.12)	√ (where required)	√
9.3.8	DOCUMENTATION OF INVESTIGATIONAL PRODUCT(S) AND TRIAL-RELATED MATERIALS SHIPMENT	(See 9.2.15.)	√	√
9.3.9	CERTIFICATE(S) OF ANALYSIS FOR NEW BATCHES OF INVESTIGATIONAL PRODUCTS	(see 9.2.16)	—	√
9.3.10	MONITORING VISIT REPORTS	To document site visits by, and findings of, the Monitor	—	√
9.3.11	RELEVANT COMMUNICATIONS OTHER THAN SITE VISITS - letters - meeting notes - notes of telephone calls	To document any agreements or significant discussions regarding trial administration, protocol violations, trial conduct, adverse event (AE) reporting	√	√

9.3.12	SIGNED INFORMED CONSENT FORMS	To document that consent is obtained in accordance with GCP and protocol and dated prior to participation of each subject in trial. Also to document direct access permission (see 9.2.3)	√	—
9.3.13	SOURCE DOCUMENTS	To document the existence of the subject and substantiate integrity of trial data collected. To include original documents related to the trial, to medical treatment, and history of subject	√	—
9.3.14	SIGNED, DATED AND COMPLETED CASE REPORT FORMS (CRF)	To document that the investigator or authorized member of the investigator's staff confirms the observations recorded	√ (copy)	√ (original)
9.3.15	DOCUMENTATION OF CRF CORRECTIONS	To document all changes/additions or corrections made to CRF after initial data were recorded	√ (copy)	√ (original)
9.3.16	NOTIFICATION BY ORIGINATING INVESTIGATOR TO SPONSOR OF SERIOUS ADVERSE EVENTS AND RELATED REPORTS	Notification by originating investigator to sponsor of serious adverse events and related reports in accordance with Section 4.11 of the ICH-GCP Guidelines.	√	√
9.3.17	NOTIFICATION BY SPONSOR AND/OR INVESTIGATOR, WHERE APPLICABLE, TO REGULATORY AUTHORITY(IES) AND IRB(S)/IEC(S) OF UNEXPECTED SERIOUS ADVERSE DRUG REACTIONS AND OF OTHER SAFETY INFORMATION	Notification by sponsor and/or investigator, where applicable, to regulatory authorities and IRB(s)/IEC(s) of unexpected serious adverse drug reactions in accordance with Section 5.17 and 4.11.1 of the ICH-GCP Guidelines and of other safety information in accordance with 5.16.2 and 4.11.2 of the ICH-GCP Guidelines.	√ (where required)	√
9.3.18	NOTIFICATION BY SPONSOR TO INVESTIGATORS OF SAFETY INFORMATION	Notification by sponsor to investigators of safety information in accordance with 5.16.2 of the ICH-GCP Guidelines.	√	√
9.3.19	INTERIM OR ANNUAL REPORTS TO IRB/IEC AND AUTHORITY(IES)	Interim or annual reports provided to IRB/IEC in accordance with 4.10 and to authority (ies) in accordance with 5.17.3 of the ICH-GCP Guidelines.	√	√ (where required)
9.3.20	SUBJECT SCREENING LOG	To document identification of subjects who entered pre-trial screening	√	√ (where required)
9.3.21	SUBJECT IDENTIFICATION CODE LIST	To document that investigator/institution keeps a confidential list of names of all subjects allocated to trial numbers on enrolling in the trial. Allows investigator/institution to reveal identity of any subject	√	—
9.3.22	SUBJECT ENROLMENT LOG	To document chronological enrolment of subjects by trial number	√	—
9.3.23	INVESTIGATIONAL PRODUCTS ACCOUNTABILITY AT THE SITE	To document that investigational product(s) have been used according to the protocol	√	√
9.3.24	SIGNATURE SHEET	To document signatures and initials of all persons authorized to make entries and/or corrections on CRFs	√	√
9.3.25	RECORD OF RETAINED BODY FLUIDS/ TISSUE SAMPLES (IF	To document location and identification of retained samples if assays need to be repeated	√	√

ANY)			
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16.4. After Completion or Termination of the Trial

After completion or termination of the trial, all of the documents identified in Sections 9.2 and 9.3 should be in the file together with the following;

Title of Document		Purpose	Located in the Files of	
			Investigator/Institution	Sponsor
9.4.1	INVESTIGATIONAL PRODUCT(S) ACCOUNTABILITY AT SITE	To document that the investigational product(s) have been used according to the protocol. To documents the final accounting of investigational product(s) received at the site, dispensed to subjects, returned by the subjects, and returned to sponsor	√	√
9.4.2	DOCUMENTATION OF INVESTIGATIONAL PRODUCT DESTRUCTION	To document destruction of unused investigational products by sponsor or at site	√ (if destroyed at site)	√
9.4.3	COMPLETED SUBJECT IDENTIFICATION CODE LIST	To permit identification of all subjects enrolled in the trial in case follow-up is required. List should be kept in a confidential manner and for agreed upon time	√	—
9.4.4	AUDIT CERTIFICATE (if available)	To document that audit was performed	—	√
9.4.5	FINAL TRIAL CLOSE-OUT MONITORING REPORT	To document that all activities required for trial close-out are completed, and copies of essential documents are held in the appropriate files	—	√
9.4.6	TREATMENT ALLOCATION AND DECODING DOCUMENTATION	Returned to sponsor to document any decoding that may have occurred	—	√
9.4.7	FINAL REPORT BY INVESTIGATOR TO IRB/IEC WHERE REQUIRED, AND WHERE APPLICABLE, TO THE REGULATORY AUTHORITY(IES)	To document completion of the trial	√	—
9.4.8	CLINICAL STUDY REPORT	To document results and interpretation of trial	√ (if applicable)	√

13. REFERENCES

- a. The DRAP Act, 2012.**
- b. The Bio-Study Rules, 2017.**
- c. ICH-GCP Guidelines.**
- d. Pakistan GCP-Guidelines.**

14.ANNEXURE-I:

TITLE PAGE (*Example*)

SPONSOR'S NAME

Product:

Research Number:

Name(s): Chemical, Generic (if approved)

Trade Name(s) (if legally permissible and desired by the sponsor)

INVESTIGATOR'S BROCHURE

Edition Number:

Release Date:

Replaces Previous Edition Number:

Date:

15.ANNEXURE-II:

TABLE OF CONTENTS OF INVESTIGATOR'S BROCHURE (*Example*)

- Confidentiality Statement (optional).....
- Signature Page (optional).....
- 1 Table of Contents.....
- 2 Summary.....
- 3 Introduction.....
- 4 Physical, Chemical, and Pharmaceutical Properties and Formulation.....
- 5 Nonclinical Studies.....
 - 5.1 Nonclinical Pharmacology.....
 - 5.2 Pharmacokinetics and Product Metabolism in Animals.....
 - 5.3 Toxicology.....
- 6 Effects in Humans.....
 - 6.1 Pharmacokinetics and Product Metabolism in Humans.....
 - 6.2 Safety and Efficacy.....
 - 6.3 Marketing Experience.....
- 7 Summary of Data and Guidance for the Investigator.....

NB: References on 1. Publications

2. Reports

These references should be found at the end of each chapter

Appendices (if any)

15.ANEXURE-III: Informed Consent Template

1. Checklist for study Subject's informed consent documents

1.1 Essential Elements:

1. Statement that the study involves research and explanation of the purpose of the research
2. Expected duration of the Subject's participation
3. Description of the procedures to be followed, including all invasive procedures and
4. Description of any reasonably foreseeable risks or discomforts to the Subject
5. Description of any benefits to the Subject or others reasonably expected from research. If no benefit is expected Subject should be made aware of this.
6. Disclosure of specific appropriate alternative procedures or therapies available to the Subject.
7. Statement describing the extent to which confidentiality of records identifying the Subject will be maintained and who will have access to Subject's medical records
8. Trial treatment schedule(s) and the probability for random assignment to each treatment (for randomized trials)
9. Compensation and/or treatment(s) available to the Subject in the event of a trial-related injury
10. An explanation about whom to contact for trial related queries, rights of Subjects and in the event of any injury
11. The anticipated prorated payment, if any, to the Subject for participating in the trial
12. Subject's responsibilities on participation in the trial
13. Statement that participation is voluntary, that the subject can withdraw from the study at any time and that refusal to participate will not involve any penalty or loss of benefits to which the Subject is otherwise entitled
14. Any other pertinent information

1.2 Additional elements, which may be required

- (a) Statement of foreseeable circumstances under which the Subject's participation may be terminated by the Investigator without the Subject's consent.
- (b) Additional costs to the Subject that may result from participation in the study.
- (c) The consequences of a Subject's decision to withdraw from the research and procedures for orderly termination of participation by Subject.
- (d) Statement that the Subject or Subject's representative will be notified in a timely manner if significant new findings develop during the course of the research which may affect the Subject's willingness to continue participation will be provided.
- (e). A statement that the particular treatment or procedure may involve risks to the Subject (or to the embryo or fetus), if the Subject is or may become pregnant), which are currently unforeseeable
- (f) Approximate number of Subjects enrolled in the study.

2. Format of informed consent form for Subjects participating in a clinical trial

Informed Consent form to participate in a clinical trial

Study Title:

Study Number:

Subject's Initials: _____ Subject's Name: _____

Date of Birth / Age:

Please initial box
(Subject)

For further information, please contact:

Pharmacy Services Division,
Drug Regulatory of Pakistan,
TF Complex,
7 Mauve Area, Sector G-9/4,
Islamabad.

Phone No. 051-9262160

Email: dir.ps@dra.gov.pk

Website: www.dra.gov.pk