Principles of Strategic Proposal Development

5-part online training series
12 – 1:30 pm MST
1-866-906-7447
Participant code: 3535083

NEDARC
The National EMSC Data Analysis Resource Center
01: Identifying Funding Sources and Becoming Familiar with the Requirements

02: Getting Ready to Write a Grant Proposal

03: Diving into the Project Narrative

04: Final Pieces: The Budget and Putting It All Together

05: Help: Open Q&A
Diving into the Project Narrative

Part 3: October 10, 2017
Session Overview

1. Writing to help the reviewer
2. Sections of the Project Narrative
3. Strategies to get started on writing the Project Narrative
Objective

The #1 take home for this session is the importance of a well written project narrative.
Components of the Proposal

Abstract
Project Narrative
Budget/ Budget Narrative
Attachments (required docs)
The Project Narrative

Heart and Soul!
Writing Process

Prewriting

Brainstorm and organize ideas

Drafting

Write rough draft

Revising

Make changes to improve writing

Editing

Proofread

Publishing

Present final copy
Writing is Hard

“Easy reading is hard writing.”

• Takes time
• Takes practice
• Iterative process
Organized Approach to Writing

Clear and concise writing communicates your ideas to the reviewer, and shows thoughtfulness and conscientiousness of the applicant and the capacity to achieve what you propose to do in your narrative.
Adhere to Good Grammar

Consistent terms

Efficient writing

Avoid unclear referents

Avoid jargon and excessive abbreviations

Active voice
Consistent Terms

Define important terms and use the same throughout your narrative

Example: National Pediatric Readiness Project
# Efficient Writing

<table>
<thead>
<tr>
<th>Do Not Use...</th>
<th>When You Can Use...</th>
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<tbody>
<tr>
<td>An excessive amount of</td>
<td>Too much</td>
</tr>
<tr>
<td>At a high level of productivity</td>
<td>Highly productive</td>
</tr>
<tr>
<td>At a rapid rate</td>
<td>Rapidly</td>
</tr>
<tr>
<td>Due to the fact that</td>
<td>Because</td>
</tr>
<tr>
<td>Has the capability of</td>
<td>Can</td>
</tr>
<tr>
<td>In view of the fact that</td>
<td>Because</td>
</tr>
<tr>
<td>Serves the function of being</td>
<td>Is</td>
</tr>
</tbody>
</table>

From: Gitlin and Lyons  *Successful Grant Writing*  4th edition
EMS professionals often face traumatic emergencies and would benefit greatly from the services of a counselor. They would contribute significantly to their health and well-being.

To whom do the words “they” and “their” refer?
Avoid the Use of Jargon
Special words or expressions used by a particular profession or group and are difficult for others to understand.

“Pedsready”
“Family-centered care”
“Medical control”
“Paradigm shift”
“Cutting edge”
Acronyms & Abbreviations!
Avoid Excessive Acronyms & Abbreviations

NEDARC

EHB
ENA
BLS
NREMT

PM
emsc
HRSA
AAP
EMS
SPROC
copem
EXAMPLE: The EMT used BVM and RSI to treat the peds patient.

BETTER: The EMT used a bag valve mask and rapid sequence intubation to treat the child.

Note: Delineate abbreviations at first use if they will appear throughout your proposal.
Use Active Rather than Passive Voice

Try to use the active voice as much as possible—it is direct and concise and conveys action.
Examples

Stephanie painted the entire house. (active)
The entire house was painted by Stephanie. (passive)

Maggie posted the video on Facebook. (active)
The video was posted on Facebook by Maggie. (passive)

Mike ate 12 shrimp at dinner. (active)
At dinner, 12 shrimp were eaten by Mike. (passive)
Online Editing Programs

Free to use

Just copy & paste your text directly onto the page to have your writing analyzed

http://www.hemingwayapp.com/

Don’t download app
Online Editing Programs: Analysis Results

Readability = Post-graduate

1 use of passive voice

3 phrases have simpler alternatives

2 of 3 sentences are very hard to read
Other Considerations

Formatting

• Graphics
• White space
• Section Headers
  • Sub-headers
• Text formatting
Which one do you want to read?

1. Specific Aims

We have just discovered that amodiaquine (1), a well-established anti-malaria and anti-inflammatory agent, is a non-competitive inhibitor of acetylcholinesterase (AChE) from its adducts with organophosphorous compounds (OPCs). In our preliminary results, we demonstrated this activity on two organophosphorous, paraoxon and diisopropyl phosphorofluoridate (DFP). A structurally related anti-malarial agent, chloroquine (2) was also identified to have significantly less effective ("residual") reactivation activity.

The central hypothesis of our proposal is that amodiaquine will be useful in vivo as a post-exposure treatment of organophosphorous poisoning. This hypothesis is supported by what is already known about the tolerable doses of amodiaquine, its pharmacokinetics, lipophilicity, ability to cross blood-brain barrier, distribution and peak concentrations, and by extrapolation of our in vitro results. The secondary hypothesis of our proposal is that amodiaquine and chloroquine provide a platform for delivery of catalytic functionalities within the active site of AChE and, therefore, are leads for the design of second-generation reactivation agents with broad activity and low toxicity. Through the following three aims, we will obtain support for these hypotheses and for the proposed mechanism of reactivation (or we will be led to propose an alternative mechanism), providing firm foundations for development of general agents for both prophylaxis and treatment of exposure to OPCs.

In Aim 1 we will provide a detailed characterization of the interactions of amodiaquine and its close structural analogs with acetylcholinesterase and the different adducts (AChE-OPC) that AChE forms with a panel of organophosphorous compounds. In order to facilitate biomedical applications and initiate the optimization process leading to improved agents (i.e., efficient reactivation recovery from aged adducts), we need to develop an understanding of the scope and limitations of our reactivators and of their interactions with AChE. In the effort described in this aim we will (i) synthesize the initial family of analogs necessary for mechanistic studies, and (ii) perform full traditional kinetic characterization of the original leads and these analogs with human, murine, and guinea pig AChE.

In Aim 2 we will obtain crystal structures of amodiaquine and its selected analogs with AChE. Herein, we will determine the position and orientation of amodiaquine and analogs in complexes with AChE. In addition, we will obtain structures of chosen analogs with AChE-OPC.

In Aim 3 we will study the ability of amodiaquine to reverse the effects of organophosphorous compounds in vivo. Using rodent models of organophosphate poisoning, we will test amodiaquine as a reactivator post-exposure to OPCs (e.g., on paraoxon or DFP). Results of these experiments will unambiguously determine whether or not amodiaquine is able to reverse inhibition of AChE in brain tissue in vivo.

Our goal for this funding period is to establish amodiaquine as the first member of a new class of reactivators of AChE, thus enabling subsequent pre-clinical studies of post-exposure treatment. The results of our mechanistic studies will also allow us to focus medicinal chemistry efforts on generating analogs suitable for chronic administration (pre-treatment), that is, without the side effects reported when amodiaquine is used for prolonged prophylaxis.

Specific Aims.

Chlorine (Cl₂) is a highly irritant and reactive gas produced in large quantities throughout the world. When inhaled, Cl₂ hydrolyzes to hypochlorous acid (HOCl) and its conjugate base (OCl⁻) which react with components of the lungs, including epithelial lining fluid, epithelial cells, and epithelial cells. Products of these reactions (chloramines, hypochlorous acid) have considerable toxicity resulting in the formation of additional toxic intermediates and activation of some inflammatory cells that mediate the injurious effects of Cl₂/OCl⁻/HOCl to biological targets (reviewed in (37, 48)).

When inhaled at concentrations exceeding 300 ppm, Cl₂ causes severe reactive airway disease (35), pulmonary edema (36), and respiratory failure in rats (44, 45). A mortality of about 50% within 24 h of exposure to Cl₂ gas was caused by systemic injury characterized by inflammation and endothelial dysfunction due in part to the inactivation of endothelial nitric oxide synthase (37). Understanding of this inflammatory process has been hindered by the lack of a suitable animal model.

Exciting preliminary data generated by the laboratories of the two PIs (Dr. Pittet and Matljan) show that exposure to Cl₂ concentrations that either suppress or activate the NO synthase (400 ppm for 30 min) or 40% mortality within 24 h post exposure (600 ppm for 45 min) result in activation of coagulation in the distal lungs and in the plasma, as indicated by the appearance of thrombin-antithrombin complexes in the BAL fluid and plasma, and in secondary activation of fibrinolysis in the plasma that causes hypocoagulation, as shown by a significant prolongation of clotting time. Thrombin is a well-known mediator of acute lung injury resulting in increased lung vascular permeability (18) and compromised vasoconstriction (31) and alveolar fluid clearance (41). In addition, it may act synergistically with reactive intermediates to activate the small GTPase RhoA and suppress Rac1, which also contribute to increased alveolar permeability and pulmonary edema (6, 10, 19). Thus, we will test the central hypothesis that exposure to Cl₂ gas causes the intra-alveolar and systemic activation of the coagulation cascade that plays an important role in the development of lung and other end-organ injury. We hypothesize that Cl₂ damages lung epithelial, endothelial, and inflammatory cells leading to the release of tissue factor and procoagulant microparticles, as well as the shedding of thrombomodulin and endothelial protein C receptors (ePCR) via a metalloprotease-dependent mechanism (45). This results in airspace thrombin production leading to increased alveolar and microvascular permeability to plasma proteins and pulmonary edema that contribute to death from respiratory failure. Furthermore, we hypothesize that Cl₂ intermediates upregulate the expression of tissue factor on endothelial cells and monocytes causing the release of circulating procoagulant microparticles via a myeloperoxidase (MPO)-dependent mechanism (38) that results in the systemic activation of the coagulation cascade.

In studies of our laboratory, we have found that the administration of activated protein C (aPC) or one of its mutant forms which either lacks anticoagulant (6) or cytotoxic (c) activity will decrease lung epithelial and vascular permeability, development of pulmonary edema and mortality. Using these mutant forms of mouse PC, we will determine whether the protective effect of aPC depends on its anticoagulant effect or on its cytotoxic effects on the activation of the sphingosine-1-phosphate pathway in the lung endothelium (17, 45) and alveolar epithelium (34) and by direct engagement of CD11b on alveolar macrophages (9). Thus, we propose the following two specific aims.

Specific Aim 1. To identify the mechanisms by which Cl₂ activates the alveolar and systemic coagulation cascades. Wild-type or MPO null C57BL/6 mice will be exposed to Cl₂ gas (600 ppm for 45 min) and returned them to room air. At various intervals post-exposure, we will measure levels of tissue factor, procoagulant microparticles, thrombin-antithrombin complexes, tissue plasminogen activator, fibrin split products formation, soluble thrombomodulin and ePCR, protein C and aPC in the BAL fluid and plasma and levels of RhoA and Rac1 in lung tissues. Activation of blood coagulation and development of secondary fibrinolysis will be measured by thromboelastometry. These measurements will be correlated with physiological indices of injury including levels of cytokines, plasma proteins in the BAL fluid (as an index of alveolar permeability), and alveolar fluid clearance and lung wet to dry weight ratio and protein permeability (as indices of lung vascular permeability).

Specific Aim 2. To determine the mechanisms by which post-exposure of activated protein C decreases Cl₂-mediated activation of the coagulation cascade, lung endothelial and epithelial permeability and apoptosis of Cl₂-exposed mice. Mixed-mouse expressing Cl₂ and C57BL/6 mice will be exposed to Cl₂. To reveal the role of wild type and two mouse aPC mutants (3K3A mutant with severely reduced anticoagulant properties and a hyperanfibrinolytic Cl₂-resistant staphylococcal 3K3A mutant without anti-inflammatory properties) in modulating Cl₂-induced lung endothelial and epithelial permeability, inhibition of vasoconstrictor, anticoagulation, and activation of alveolar macrophages.

For the in vivo studies, wild-type or CD11b null C57BL/6 mice will be injected intramuscularly with the wild type or one of the mutant forms of aPC within 30-45 min post exposure. We will then measure survival during the next 72 h and repeat the measurements outlined in Specific Aim 1.
Remember: You want to help the reviewer be able to read and understand your grant!
Sections of the Project Narrative

Introduction

Needs Assessment

Methodology

Work Plan

Resolution of Challenges

Evaluation/technical support capacity

Organizational Information
Introduction
Introduction

Brief description of healthcare system in your state

• EMS
• Hospital
• Other relevant information
Needs Assessment
Needs Assessment

Describe the healthcare needs of the state

Relate the needs of your State to the Performance Measures
Methodology
Methodology

Methods used to achieve objectives
Methodology

SMART Goals & Objectives
SMART
• Specific
• Measurable
• Achievable
• Relevant
• Time-Bound
Steps to Meet Objectives & Desired Outcomes

**GOALS**
sets the foundation as to what will be accomplished

**SMART OBJECTIVES**
are specific & measurable actions that support the goal

**ACTIVITIES**
describe specific steps in achieving the objectives and desired outcomes.
Designate regional PECCs for at least 30% of licensed EMS agencies by 2020.
Designate regional PECCs for at least 30% of licensed EMS agencies by 2020.
To increase availability of PALS courses to certified EMS providers in Utah by 15% by 2020
SMART

To increase availability of PALS courses to certified EMS providers in Utah by 15% by 2020
Activity

Let’s develop a SMART objective using PM 01

The degree to which Emergency Medical Services (EMS) agencies submit National Emergency Medical Services Information System (NEMSIS) compliant version 3.x- data to the State EMS Office.
Objectives → Needs

Can it be measured??

Be realistic!

Strategic planning
Work Plan
Workplan

Timing of activities

Responsible Staff

Collaborations
Resolution of Challenges

• Problems
• Solutions

• Uniqueness of your program
NEDARC Examples

- 80% survey response
- 3 month prep process
- Invitation templates
- Weekly reports
- Workshop attendance
- Input from SP managers
- Government hotel rates
- Early agenda postings
Evaluation/Capacity
Evaluation/Capacity

• How will you measure achievement?
• Impact on health outcomes?
• What expertise do you have that will help you to be successful?
• SMART objectives!
Organizational Information

• Why is your organization the best fit to address the issue?
• What are your organization’s strengths?
Organizational Chart
Sections of the Project Narrative

- Introduction
- Needs Assessment
- Methodology
- Work Plan
- Resolution of Challenges
- Evaluation/Capacity
- Organizational Information
Getting Started!
Outline
Sections of Narrative
Why develop an outline for writing your narrative?
Developing an outline can help:

- Get all your ideas into one document
- Organize your thoughts
- Identify major activities, assign tasks, and set deadlines
- Break the work down into manageable pieces
Outline of NEDARC Goals and Objectives for 2017 Narrative

Each goal below is followed by a bulleted list of objectives, taken verbatim from the FOA. Under each objective, or group of objectives, is an outline of discussion points to be used for the workplan portion of the narrative. We will also need to include staff responsible for the activities under the workplan, and a timeline of the activities.

Goal 1: Support States in Data System Development (3-4 pages)
- Objective 1A: Support states in developing their capacity and infrastructure to collect, analyze, and utilize data to enhance and improve pediatric emergency care.

Background
- Provide some background, complimentary to what's already in the Need Section
  - Have expertise in surveying, analysis, data dissemination, linkage
  - Briefly discuss experience with Performance Measures and Peds Ready data collection/analysis:
    • Trained staff
  - Software: Tableau, Checkbox, Adobe Suite

Current and Future activities
- Reopening of portal Nov. 2015 based on continued interest, and current results to allow for QI activities
- Streamlined assessment, unlimited use, enhanced gap report rolling out in early 2017
- Planned national reassessment targeted for 2018 or 2019 based on updated guidelines for care of kids
- Ongoing access to PM and PR data for grantees thru dashboard (Patty)
- Andrea to make short training videos on use of and access to dashboards
Write Initial Draft

Drafting

Write rough draft
Critically Evaluate

Editing

Proofread
Revise and Redraft

Make changes to improve writing
Some Last Tips...

Budget enough time for writing—usually two to three hours
Some Last Tips...

Find a quiet place
Some Last Tips...

Don’t check your phone or email
Some Last Tips...

Establish timelines for you and your team
Some Last Tips...

Begin with what’s most comfortable
## Page Counter

### Page Counter and Checklist

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<th>Description</th>
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<td>Application checklist</td>
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<td>3 - Biosketches, Key Personnel</td>
<td>One page biosketch for faculty/management members</td>
<td>Yes</td>
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<td>4 - Letters of Agreement for Contracts</td>
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<td>5 - Org Chart</td>
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<td>6 - Evaluation Plan</td>
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<td>7 - Letters of Support</td>
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<td>78</td>
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</table>
What other tips or methods have people used to get started writing?
Common Mistakes
Avoidable Mistakes

Not enough time
Using jargon and abbreviations
Writing non-specific objectives
Poor use of white space
Resources

Draft a challenge and resolution

Show the reviewer how you are thoughtful and at the same time how your state is unique
Outline your Organizational Capacity with a Chart

Another chance to show the reviewer that you are prepared and showcase any unique attributes of your organization.
NEDARC Next Steps:
Email all Managers

Link to session recording
Include link to recording on website
Assignment reminder
Questions

What questions do you have about the materials presented in this session?

What questions do you have about the assignment?