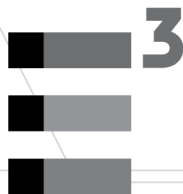


COVID-19 SERIES



We
Care



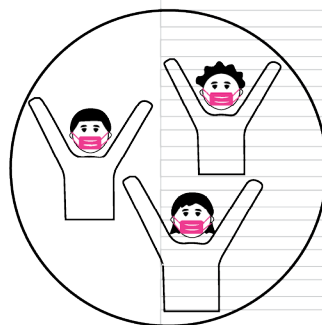
ENTREPRENEURSHIP

EMPLOYABILITY

EDUCATION

Learner's Workbook

CELEBRATING COVID-19 HEROES



PROJECT-BASED LEARNING | EMS

GRADE



basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



8

Learner's Workbook

GRADE 8

E³ Projects for
Trimmed ATP

PROJECT:

Celebrating COVID-19 HEROES

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LEARNER'S WORKBOOK

GRADE 8

ECONOMIC MANAGEMENT SCIENCES

E³ PROJECT FOR TRIMMED ATP

Assessment Rubric /50

Celebrating COVID-19 HEROES



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



**Send your
photographs
and videos!**

**Please send us photographs/videos for our Facebook/
Website**

Dear learner

After you have completed your project, we would love to see it, so please send it to us by following these instructions.

How to put together your information:



Tell us about your project:

1. Name of your project:
2. Name of learner:
3. School:
4. Grade:
5. Describe your project. (50 – 100 words)
6. Describe the biggest challenge you had doing this project. (50 – 100 words)
7. Describe what you would do better next time. (50 – 100 words)



Choose the right photographs to tell the story of your project

1. Choose three photographs that tell the story and progress of your project.
2. Make sure that no-one's face is clearly visible unless they are wearing masks.
3. Make sure the photographs are in focus and clear.



How to send your submission:

1. All submissions must be in a word document and the photographs must be in the document.
2. You can send it to us on email.
3. You can email it yourself, or you can ask your parent/caregiver or teacher to do this for you. You must use this heading on the email: Learner Project Grade 8 EMS.



Email

info@ecubed-dbe.org

If needed, we might ask you to make some changes to your submission in order to make it ready for uploading onto our website.

Ice Breaker



Meet Ludwick Marishane

Watch the Video of Ludwick Marishane (or read the transcription) carefully and answer these questions:

★ What is Ludwick's business? (What does he sell or what service does he provide?)

★ What was his motivation to start the business?

★ He had a few challenges. List at least three:

1

2

3

★ Why do you think he was successful?

★ What is the form of ownership in Ludwick's business?

★ What is his level of management?

★ Will his business survive during the COVID-19 pandemic? Why?

★ Would you consider him a business hero? Why?

The Project



1. PLANNING



Activity 1 – Definition of a hero

How would you describe a hero?



Start a discussion in class, with your buddy-guard, or with your family at home about heroes.

How would they describe a hero?

1

2

3

Now take all these descriptions and form your own definition of a hero in the block below:

HOW would you describe a COVID-19 hero? Write the changed definition in the block below:

Vocabulary list

Transcription – written/printed version of audio or video

Motivation – reason for acting in a specific way

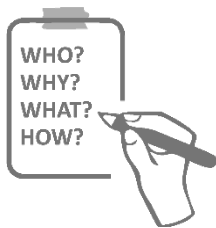
Definition – statement describing meaning of a word

Activity 2 – The BIG question

The outcome of this project is the celebration of local COVID-19 heroes. You have to do research about local heroes who are crushing it in business in spite of the COVID-19 pandemic. When you do research, you have to start with one BIG question.

Write your BIG research question in the block below:

Use who, why, what and how words to help you think of the most important question that needs to be answered. Only one final BIG question is necessary.

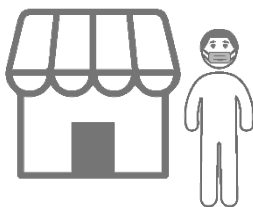


2. RESEARCH/ FINDING OUT



Activity 3 – Looking for heroes

When you think of local business heroes in your community, who comes to mind? Is there someone who recently started a new business to address a COVID-19 problem? Write down a few names:



Vocabulary list

Celebration – special day or event to celebrate something, like a birthday
Research – investigating something systematically

Now discuss this with your class, teacher, buddy-guard or family at home. Who do they think are the business heroes in your community? Write down the names of people they come up with:

Choose one person that you are particularly interested in. Find out as many details as possible and fill in the table below:

Name		Telephone	
Business		Address	

Why I admire this person as a business (and COVID-19) hero:



You have to **make an appointment** with this person. During your appointment or interview, you will ask your hero questions – enough to fill up a POSTER with details for the HEROES' WALL. The HEROES' WALL is a display of posters on local COVID-19 business heroes which you will display when school starts again. Keep your poster safe and ready for the wall.

When you first contact this person, what will you say? Write down your plan in the block below.

Remember to include **time, date, place, method**, etc.

Vocabulary list

Details – full information about something

Appointment – meeting someone at a specific time and place

Interview – a formal meeting to question or consult someone

Activity 4 – Preparing for the Interview

When your hero says YES to an interview, you have to start preparing well. Use the resources in the LEARNER'S LIBRARY at the back of this booklet to help you. (*5 tips for arranging interviews with entrepreneurs *Typical Questions to ask during interviews)

Start by making a list of questions that you would like to ask:

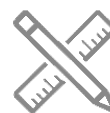
List of Questions for the Interview:

1	
2	
3	
4	
5	
6	
7	





3. MAKING AND SHOWING THE EVIDENCE



Activity 5 – Case studies of local entrepreneurs

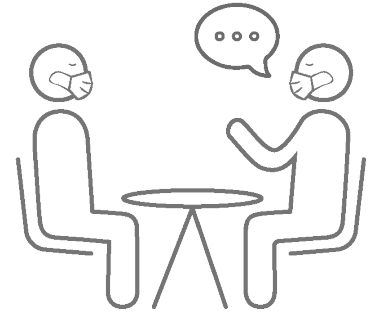
Listen to the 8 case studies of local entrepreneurs (or read the transcriptions in the LEARNER'S RESOURCE LIBRARY at the back of this booklet). **Complete this table** with information provided in the case studies and with your own advice.

Name of Case Study	Business type or operations	Is this a product or Service business? Form of ownership?	COVID-19 challenges you foresee for this business	Advice for mitigating (lessening) COVID-19 challenges



Activity 6 – Gathering information

It is time to interview your chosen local hero. Be sure to either record the interview or make very precise notes during the interview. Here is a table below to help you record questions for the interview. Is this a primary or a secondary source? See your Learner's Resource Library.



INTERVIEWING A LOCAL HERO:

Questions must include all of the following:

Forms of Ownership, Different forms of ownership, e.g. Sole traders, Partnerships, Private and public companies.

Levels and functions of Management: Different levels of management. Tasks such as planning, organising, leading and controlling. Characteristics of good management.

Item	✓ Checklist/Answer
<i>Introduce yourself and thank the person</i>	
<i>Explain the reason for the interview</i>	
<i>Question 1</i>	
<i>Question 2</i>	
<i>Question 3</i>	
<i>Question 4</i>	
<i>Question 5</i>	
<i>Question 6</i>	
<i>Question 7</i>	
<i>Additional/follow up questions</i>	
<i>Additional/follow up questions</i>	
<i>Thank the person for her/his time</i>	

Activity 7 – Putting it all together

Use the information you have gathered from your interview with your chosen hero, and start planning your poster about your hero in the space below. Please research what a good research poster should include (see LEARNER'S RESOURCE LIBRARY).

The poster must include all of the following:

Forms of Ownership, Different forms of ownership, e.g. Sole traders, Partnerships, Private and public companies.

Levels and functions of Management: Different levels of management. Tasks such as planning, organising, leading and controlling. Characteristics of good management.

Rough draft of my poster:

**Vocabulary
list**

Rough draft – a complete but not polished version of your creation

Information – facts about something or someone

Characteristics – a feature or quality typical to a person



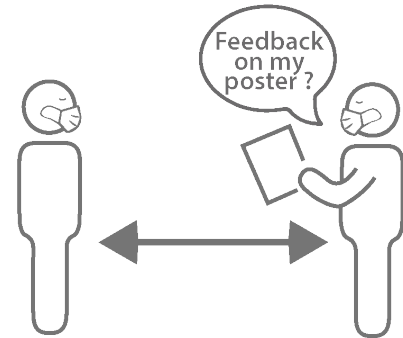
4. GETTING FEEDBACK AND CHANGING IF YOU NEED TO



Activity 8 – Getting feedback

Show the rough draft of your poster to family and friends (with social distancing) and ask for feedback.

Complete the blocks below:



Who is your buddy-guard?	
What is your buddy-guard's address or cell number?	
Why did you choose him/her as a buddy-guard?	



Who at home is your advisor?	
How will you get hold of your teacher if you need him/her?	



Listen to useful information to improve your poster. Say what they advised and what you did. Get at least 3 people to give you feedback.

Date of advice	Who gave feedback	What they said I should do

Write down what you changed, and why.

**WHAT YOU
CHANGED?**

**WHY YOU
CHANGED
IT?**



5. FINISHING OFF YOUR PROJECT



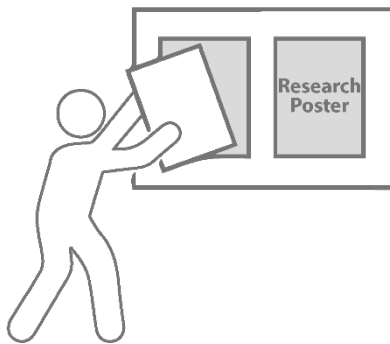
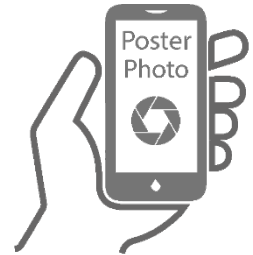
Activity 9 – Getting it perfect

Work in class or at home and make the final changes to your poster. Ask family members to help you proofread all the copy (written parts).

PLEASE TAKE A PHOTO of your poster to share on our website, and to keep as evidence.

Brainstorm some ideas for displaying these posters at school, in a public space or online with your family, teacher or buddy-guard.

What have you decided about the public display? Write your plans in the block below:



What **safety measures** should you take with the public display of your project? Please write these down in the block below:

Vocabulary list

Proofread – to read and mark for errors

Copy – written part of something

Evidence – information to prove or disprove something



6. SHOWING OFF YOUR PROJECT





Activity 10 – Public Display

Help your classmates and teacher to set up the display of your **HEROES' WALL**. This can be a wall in a corridor at school, or create this display on a digital platform (blog, website, Facebook, etc.).

Make a TO-DO list of things you will need for this to happen:



Did you get any **feedback** on the display? List a few things that people said about your **HEROES' WALL**:

Good feedback – What they liked 	Not-so-good feedback – What they didn't like 

How would you rate your own poster? And that of your buddy-guard?

My poster rating /7

Why?



My buddy-guard rating /7

Why?





7. THINKING ABOUT IT AFTERWARDS



Activity 11 – Reflection

For deep learning to take place, one should always reflect on the work you have done. Please complete the questionnaire below:

1. What did you
love about
working on this
project?



2. What made
this project
hard for you?



3. What did you learn by working on this project?

About yourself?	About entrepreneurship?	About learning during COVID-19?

4. What would you do differently if you did a project like this again?

Assessment Rubric: Celebrating local COVID-19 heroes

Assessment Criteria	Not Achieved (0-2)	Partially Achieved (3-5)	Achieved (6-8)	Outstanding Achievement (9-10)	Learner Mark
1. Recognise forms of ownership: Sole traders Partnerships Private and public companies	Learner has no idea about forms of ownership	Learner has some idea about forms of ownership	Learner has a fair idea about forms of ownership	Learner has an excellent idea about forms of ownership in business.	
2. Critical thinking exercise: Definition for hero and COVID-19 hero	No attempt at critical thinking	Some attempts at critical thinking	Fair attempt at critical thinking	Excellent critical thinking	
3. Compile good interview questions	Completed last minute and/ or after the time. Rushed, with no sign of commitment	Effort was made.	Commitment is evident. Good list of questions	Obvious commitment to create an excellent set of questions for the interview/s	
4. Feedback gathered through interviews	No feedback gathered	Some feedback gathered	Good feedback gathered	Excellent feedback from many sources	
5. Presentation or public display of research poster to other classes/rest of school or online	Presentation unsatisfactory, unprepared. Unsatisfactory design and content	Presentation not ideal, somewhat unprepared. Little design effort and not enough content	Presentation good, well prepared. Good design and content satisfactory	Great presentation, excellent preparation. Striking creative design and well researched content	
Total					/50

1. Primary vs Secondary sources

Sources of information are often categorized as primary or secondary depending upon their originality.

Primary Sources

1. Direct or first-hand evidence about an event, object, person, or work of art
2. Published materials written or produced by someone with first-hand experience of the event.
3. Individual viewpoint of a participant or observer.

Examples of primary sources:

- Interviews, surveys, and fieldwork
- Diaries, personal letters, and correspondence
- Internet communications on email, blogs, and newsgroups
- Photographs, drawings, and posters
- Books, magazine and newspaper articles and ads published at the time
- Public opinion polls
- Speeches
- Original documents (birth certificates, property deeds, trial transcripts)
- Research data, such as census statistics
- Official and unofficial records of organizations and government agencies
- Radio interviews, DVDs, and video recordings
- Government documents (COVID-19 pamphlets, reports, etc.)
- Scientific journal articles reporting experimental research results

Secondary Sources

1. Describe, discuss, interpret, comment upon, analyse, evaluate, summarize, and process primary sources
2. Written or produced after the fact with the benefit of hindsight
3. Lack the freshness and immediacy of the original material
4. Collect, organize, and repackage primary source information to increase usability and speed of delivery, such as an online encyclopaedia.
5. Can be written or non-written (sound, pictures, movies, etc.).

Examples of secondary sources:

- Bibliographies
- Biographical works
- Reference books, including dictionaries, encyclopaedias, and atlases
- Articles from magazines, journals, and newspapers after the event
- Literature reviews and review articles (e.g., movie reviews, book reviews)
- History books and other popular or scholarly books
- Works of criticism and interpretation
- Commentaries and treatises
- Textbooks
- Indexes and abstracts

SOURCE

<https://sccollege.edu/Library/Pages/primarysources.aspx>

2. Management Levels: An Overview

Most organizations have three management levels:

- Low-level managers;
- Middle-level managers; and
- Top-level managers.

These managers are classified in a hierarchy of authority, and perform different tasks. In many organizations, the number of managers in every level resembles a pyramid.

Below, you'll find the specifications of each level's different responsibilities and their likely job titles.

Top-level managers

The board of directors, president, vice-president, and CEO are all examples of top-level managers.

These managers are responsible for controlling and overseeing the entire organization. They develop goals, strategic plans, company policies, and make decisions on the direction of the business. In addition, top-level managers play a significant role in the mobilization of outside resources.

Top-level managers are accountable to the shareholders and general public.

Middle-level managers

General managers, branch managers, and department managers are all examples of middle-level managers. They are accountable to the top management for their department's function.

Middle-level managers devote more time to organizational and directional functions than top-level managers. Their roles can be emphasized as:

- Executing organizational plans in conformance with the company's policies and the objectives of the top management;
- Defining and discussing information and policies from top management to lower management; and most importantly
- Inspiring and providing guidance to low-level managers towards better performance.

Some of their functions are as follows:

- Designing and implementing effective group and intergroup work and information systems;
- Defining and monitoring group-level performance indicators;
- Diagnosing and resolving problems within and among work groups;
- Designing and implementing reward systems supporting cooperative behavior.

Low-level managers

Supervisors, section leads, and foremen are examples of low-level management titles. These managers focus on controlling and directing.

Low-level managers usually have the responsibility of:

- Assigning employees tasks;
- Guiding and supervising employees on day-to-day activities;
- Ensuring the quality and quantity of production;
- Making recommendations and suggestions; and
- Upchanneling employee problems.

SOURCE

<https://courses.lumenlearning.com/boundless-business/chapter/types-of-management>

3. 5 Tips for Arranging Meetings with Entrepreneurs

- Time is money. Don't be surprised if not everyone you ask for an informational interview agrees to talk to you. In fact, not everyone you reach out to will even respond. People are busy, so when requesting a call or a meeting, keep it short and sweet.
- State your case. In your email, say who you are and what you want in no more than a couple of sentences. Explain why you'd like to meet and what you'd like to learn about their work.
- Ask for information only. Make it clear that you're not asking for a job. If a person thinks you're going to ask them for a job, it puts too much pressure on them and they might not want to talk to you.
- Be flexible. Ask if they'd be willing to meet for coffee, or talk by phone for 10-20 minutes. Emphasize that you'll work around their schedule.
- Be prepared. Read as much as you can about their business so you can avoid asking obvious questions you can find the answer to online. [Research](#) the interviewee on both their company website and on LinkedIn, and check out the company's social media sites.

Sample Questions for Entrepreneurs

When you get a busy entrepreneur to agree to an informational interview, you need to make the most of it. Here is a selection of questions you can bring to your meeting to wring the most information out of the conversation:



- How did the idea for your business come about?
- What was your key driving force to become an entrepreneur?
- How did you come up with the name for your company?
- How did you raise funding for your venture?
- How do you build a successful customer base?
- How do you market your business, and which tactics have been most successful?
- What kind of culture exists in your organization and how did you establish it?

Here is a selection of questions for entrepreneurs you might want to ask once you secure a meeting:

Standard Questions for Entrepreneurs

- How did the idea for your business come about?
- What was your key driving force to become an entrepreneur?
- How did you come up with the name for your company?
- How did you raise funding for your venture?
- How do you build a successful customer base?
- How do you market your business, and which tactics have been most successful?
- What kind of culture exists in your organization, and how did you establish it?

Personal Questions for Entrepreneurs

- How many hours a day do you work on average?
- Can you describe/outline your typical day?
- How has being an entrepreneur affected your family life?
- What motivates you?
- How do you generate new ideas?
- What is your greatest fear, and how do you manage fear?
- What are your ideals?
- How do you define success?
- Do you believe there is some sort of pattern or formula to becoming a successful entrepreneur?
- What is your favorite aspect of being an entrepreneur?
- What has been your most satisfying moment in business?

If you're considering starting your own business or you're not sure which direction to take in your existing business, informational interviews provide you an opportunity to ask a few questions that can help you discover your options.

Tips and Advice-based Questions for Entrepreneurs

- What piece of advice would you give to university students or school learners who want to become entrepreneurs?
- If you had the chance to start your career over again, what would you do differently?
- What would you say are the top three skills needed to be a successful entrepreneur?
- What entrepreneurial tricks have you discovered to keep you focused and productive in your day-to-day busy schedule?
- What key activities would you recommend entrepreneurs to invest their time in?

Miscellaneous Questions for Entrepreneurs

- Who has been your greatest inspiration?
- What business-related book has inspired you the most? (or, What is your favorite book?)
- If you had a magic stick, which are the three things you would change in the world?
- What is the part of your life experience you would alter if you had the chance to?
- If you were to write a book about yourself, how would you name it?

SOURCE

<https://www.livecareer.com/resources/interviews/questions/entrepreneurial-informational-interviewing>

4. What is a Research Poster?

Posters are widely used in the academic community, and most conferences include poster presentations in their program. Research posters summarize information or research concisely and attractively to help publicize it and generate discussion.

The poster is usually a mixture of a brief text mixed with tables, graphs, pictures, and other presentation formats. At a conference, the researcher stands by the poster display while other participants can come and view the presentation and interact with the author.

What makes a good poster?

- Important information should be readable from about 3 meters away
- Title is short and draws interest
- Word count of about 300 to 800 words
- Text is clear and to the point
- Use of bullets, numbering, and headlines make it easy to read
- Effective use of graphics, color and fonts
- Consistent and clean layout
- Includes acknowledgments, your name and institutional affiliation

A Sample of a Well Designed Poster

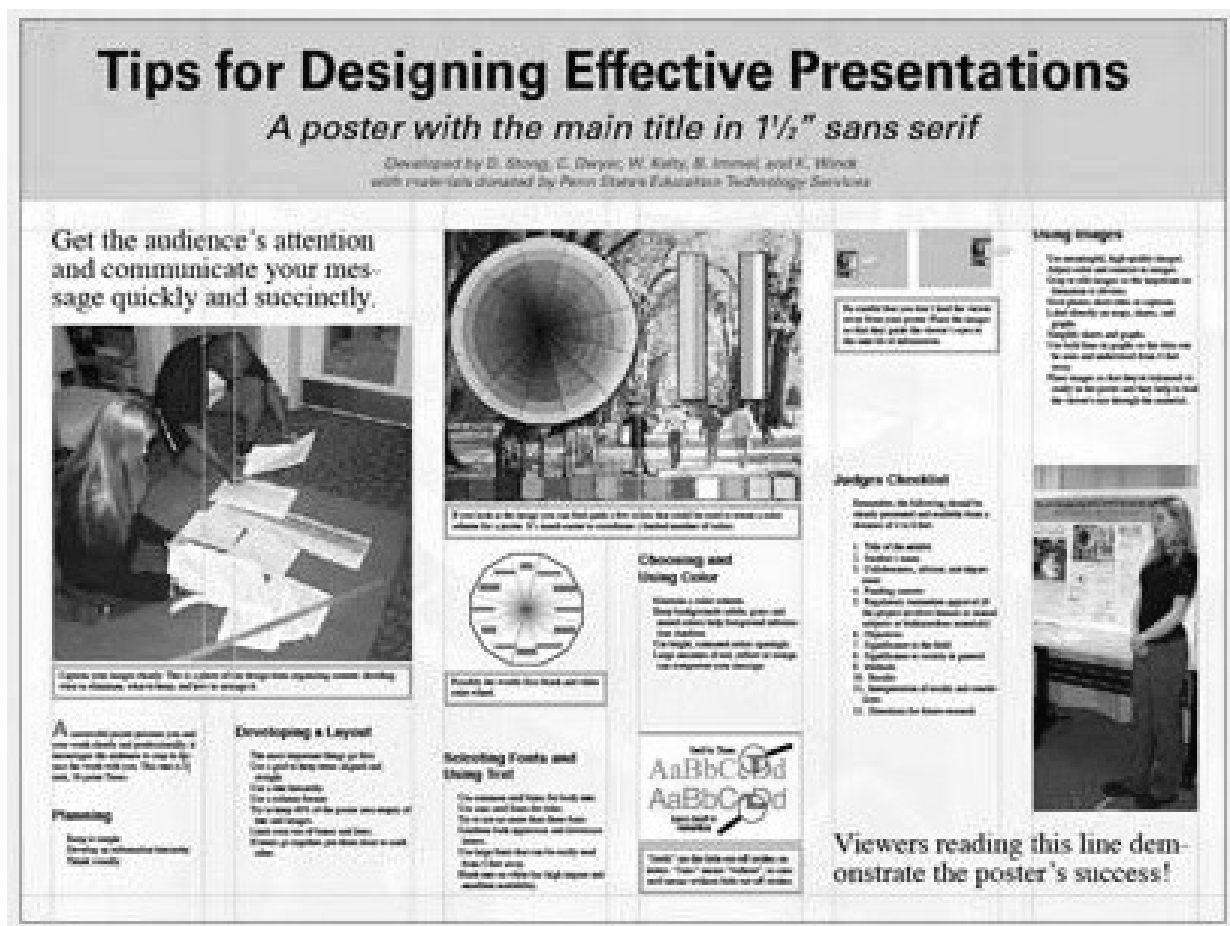


Image credit: Poster Session Tips by mousejockey@psu.edu, [via Penn State](https://www.psu.edu/education-technology-services/poster-session-tips/)

Answer these three questions:

1. What is the most important/interesting/astounding finding from my research project?
2. How can I visually share my research with conference attendees? Should I use charts, graphs, photos, images?
3. What kind of information can I convey during my talk that will complement my poster?

PowerPoint

A popular, easy-to-use option. It is part of Microsoft Office package and is available on the library computers in rooms LC337 and LC336. ([Advice for creating a poster with PowerPoint](#)).

Feature-rich professional software that is good for posters including lots of high-resolution images, but they are more complex and expensive.

[OpenOffice](#) is the free alternative to MS Office (Impress is its PowerPoint alternative). [Inkscape](#) and [Gimp](#) are alternatives to Adobe products. For charts and diagrams try [Gliffy](#) or [Lovely Charts](#). A complete list of [free graphics software](#).

O⁶-Benzylguanine Inhibits Tamoxifen Resistant Breast Cancer Cell Growth and Resensitizes Breast Cancer Cells to Anti-Estrogen Therapy

Joshua Smith¹, George C Bobustie¹, Rafael Madero-Vishal¹, Jimmie Colon¹, Beth Isley¹, Jonathan Tieku¹, Kalkunte S. Srivenugopal and Santhi Konduri¹

¹Cancer Research Institute of M.D Anderson Cancer Center Orlando ²Texas Tech University Health Sciences Center, Amarillo, TX

Abstract

Endocrine therapy using anti-estrogens are best used for early effects on breast cancer, tumor resistance to tamoxifen remains a stumbling block for successful therapy. Based on our recent study on the involvement of the DNA repair pathway in tamoxifen resistance, we hypothesized that O⁶-benzylguanine (BG) may sensitize tamoxifen resistant breast cancer cells to anti-estrogen therapy. We found that BG significantly increased the sensitivity of tamoxifen resistant breast cancer cells to anti-estrogen therapy. BG inhibited the expression of ERα and the DNA repair pathway, leading to increased sensitivity to tamoxifen in tamoxifen resistant breast cancer cells. These findings suggest that BG may be a useful agent for resensitizing tamoxifen resistant breast cancer cells to anti-estrogen therapy.

Posters rarely need abstracts

Introduction

Recent advances in breast cancer research have identified key pathways involved in the repair of DNA damage induced by chemotherapeutic agents. The ability of cancer cells to repair DNA damage and initiate DNA repair is an important mechanism for therapeutic resistance and has a negative impact on therapeutic efficacy. A number of DNA damage induced repair pathways including O⁶-methylguanine DNA methyltransferase (MGMT) and highly cytotoxic intercalated DNA crosslinks. The DNA repair pathway MGMT, involved in the repair of O⁶-methylguanine DNA crosslinks, is a key pathway for maintaining genomic stability. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin.

Text dissolves into intimidating, boring gray

Interestingly, several studies have shown that MGMT expression is upregulated in tumor cells from epithelial origin. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin. MGMT is expressed constitutively in normal cells and is upregulated in tumor cells from epithelial origin.

Prodrug Tamoxifen Increases MGMT Expression: We developed a tamoxifen resistant MCF-7 cell line (MCF-7R) and found that the expression of MGMT was significantly increased in MCF-7R cells compared to parental MCF-7 cells. This suggests that MGMT expression is upregulated in tamoxifen resistant breast cancer cells.

Knocking Down ERα Enhances MGMT Expression in Tamoxifen Resistant Breast Cancer Cells: It is not known whether ERα and MGMT transcriptionally regulate each other in tamoxifen resistant breast cancer cells. To determine whether ERα and MGMT transcriptionally regulate each other in tamoxifen resistant breast cancer cells, we used siRNA to knock down ERα expression in MCF-7R cells. We found that ERα knockdown significantly increased MGMT expression in MCF-7R cells.

Transcriptional Regulation Between MGMT and p53: Previously, it was reported that p53 transcriptionally regulates MGMT in breast cancer cells. We found that p53 transcriptionally regulates MGMT in breast cancer cells. We found that p53 transcriptionally regulates MGMT in breast cancer cells. We found that p53 transcriptionally regulates MGMT in breast cancer cells.

O⁶-Benzylguanine Plays a Dual Role in Tamoxifen Resistant MCF-7 Cells: Continuing with the experiments above, we tested whether BG could sensitize MCF-7R cells to anti-estrogen therapy. We found that BG significantly increased the sensitivity of MCF-7R cells to anti-estrogen therapy. BG inhibited the expression of ERα and the DNA repair pathway, leading to increased sensitivity to tamoxifen in tamoxifen resistant breast cancer cells.

Figure 1: Bar graphs showing the effect of BG on MGMT expression and cell growth. Panel A shows MGMT mRNA levels. Panel B shows cell growth. Panel C shows Western blots for ERα and MGMT.

Too small and too much

O⁶-Benzylguanine Modulates P53 Down-Stream Targeted Protein Expression: Based on the results reported, we investigated the effect of combination therapy on endogenous MGMT and ERα protein expression. As expected, BG decreased MGMT expression, while combination therapy (BG + TAM) significantly decreased both MGMT and ERα expression. BG alone or in combination with ERα knockdown significantly decreased MGMT expression and cell growth.

O⁶-Benzylguanine Modulates Transcriptional Targets of a Tamoxifen Resistant Breast Cancer Cell Line: We investigated the effect of combination therapy on endogenous MGMT mRNA levels. We found that BG significantly decreased MGMT mRNA levels. We found that BG significantly decreased MGMT mRNA levels. We found that BG significantly decreased MGMT mRNA levels.

Figure 2: Bar graphs showing the effect of BG on MGMT mRNA levels. Panel A shows MGMT mRNA levels. Panel B shows cell growth. Panel C shows Western blots for ERα and MGMT.

Figure 2: MGMT mRNA levels were significantly decreased in MCF-7R cells treated with BG. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels.

O⁶-Benzylguanine Inhibits Tamoxifen Resistant Breast Cancer Cell Growth and Increases Resistance to Anti-Estrogen Therapy: TAM-resistant MCF-7 cells were treated with BG and TAM. We found that BG significantly increased the sensitivity of MCF-7R cells to anti-estrogen therapy. BG inhibited the expression of ERα and the DNA repair pathway, leading to increased sensitivity to tamoxifen in tamoxifen resistant breast cancer cells.

Figure 3: Bar graphs showing the effect of BG on MGMT expression and cell growth. Panel A shows MGMT mRNA levels. Panel B shows cell growth. Panel C shows Western blots for ERα and MGMT.

Figure 3: MGMT mRNA levels were significantly decreased in MCF-7R cells treated with BG. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels.

Figure 4: MGMT mRNA levels were significantly decreased in MCF-7R cells treated with BG. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels.

Figure 5: Bar graphs showing the effect of BG on MGMT expression and cell growth. Panel A shows MGMT mRNA levels. Panel B shows cell growth. Panel C shows Western blots for ERα and MGMT.

Figure 5: MGMT mRNA levels were significantly decreased in MCF-7R cells treated with BG. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels. BG significantly decreased MGMT mRNA levels.

Caption not aligned with figure

Conclusions

- In the present study, we observed that pre-treatment with O⁶-benzylguanine sensitized tamoxifen resistant breast cancer cells to anti-estrogen therapy.
- Decreasing the expression of MGMT by exposing breast cancer cells to BG sensitized these cells to anti-estrogen therapy.
- We also observed that combination therapy of anti-estrogen and MGMT blockers not only overcome the MGMT-driven drug resistance but also significantly enhanced the functional activity of anti-estrogen therapy.
- Combination therapy inhibited tamoxifen resistant breast cancer growth in vivo.

Acknowledgments

Image Credit: Critique by [Better Posters](#)

SOURCE

<https://guides.nyu.edu/posters>

5. COVID-19: Alert Level 3 – What South African Employers Should Do

BY TALITA LAUBSCHER FRIDAY, MAY 29, 2020

The **Alert Level 3 Regulations** in terms of the Disaster Management Act were signed on 28 May 2020 (**AL3 Regulations**).

Except for those businesses and institutions that are expressly excluded (see the excluded businesses [here](#)), businesses may operate, and employees may travel to and from work.

Travel permits

Employers must issue **permits** to their employees where the employees will be required, in the course of carrying on work responsibilities or performing a permitted service, to travel between provinces, metropolitan areas, districts and 'hotspots'.

It seems that apart from these categories of employees, people will, strictly speaking, not be required to be in possession of a permit in order to travel to and from work, but the cautious approach is to ensure that employees are provided with permits.

More than 100 employees

Businesses and institutions with more than 100 employees must, where possible, make provision for minimising the number of employees at the workplace at any given time in order to achieve social distancing and to limit congestion in public transport. This can be done through:

- rotation of workers;
- staggered working hours;
- shift systems; and
- remote working arrangements and similar measures.

Compliance officers

Irrespective of their size, all businesses, industries and entities (private and public) that are permitted to operate must designate a **COVID-19 Compliance Officer**. The Compliance Officer must oversee the implementation of the employer's workplace plan as well as adherence to the standards of hygiene and health protocols relating to **COVID-19** in the workplace.

Workplace Plan

All employers must prepare a workplace plan, dealing with the following issues:

- which employees are permitted to work;
- what the plans for the phased-in return of their employees to the workplace are;
- what health protocols are in place to protect employees from **COVID-19**; and
- the details of the **COVID-19 compliance officer**.

The term 'small employer' is not defined, but we assume that this refers to employers with fewer than 10 employees.

Small employers may have 'basic plans' dealing with, at the minimum, the items above.

Medium and large employers must have workplace plans setting out the following, as set out in Annexure E to the Regulations:

- the date the business will open and the hours of operating;
- the timetable for the phased return to work of employees;
- the steps taken to make the workplace COVID-19 ready;
- a list of staff who can work from home, those who are 60 years and older, and those who have underlying illnesses (i.e. comorbidities);
- arrangements for staff relating to social distancing, screening, attendance record system, etc; and
- arrangements for customers or members of the public.

Workplace plans must be retained for inspection.

Phased-in return to work

Businesses, industries and entities must phase in the return of employees to work, to manage the return of employees from other provinces, metropolitan areas and districts.

Health protocols

Businesses, industries and entities must develop measures to ensure that the workplace meets the standards of health protocols, adequate space for employees, and social distancing measures for members of the public and service providers.

All the relevant health protocols and social distancing measures set out in the applicable Directives, and applicable sector-specific health protocols, must be adhered to. This includes the Occupational Health and Safety Directive issued by the Minister of Employment and Labour. (We currently await the amendments to this Directive.)

Stores and institutions

A person in control of a retail store or institution must take steps to ensure that customers keep a distance of at least 1.5 meters from each other, and that all directions in respect of health protocols and social distancing measures are adhered to.

Retail stores and institutions must designate a compliance officer to ensure that safety controls are strictly adhered to. The name of the compliance officer must be displayed prominently in the store or institution.

Over 60s and those with co-morbidities

Employers must implement special measures for employees who are 60 years and older, or those with co-morbidities, to facilitate their safe return to work. Where possible, these employees should work from home.

500 and more employees

Construction, manufacturing, business and financial services firm with more than 500 employees must finalise appropriate sector workplace arrangements or compacts. These arrangements must address:

- the provision of transport, or arrangements to transport the employees coming to site, but where this is not possible, the staggering of working time arrangements to reduce congestion in public transport;

- staggering the return to work of employees to ensure workplace readiness and to avoid traffic congestion during peak travel times;
- the daily screening of employees for COVID-19 symptoms;
- referring employees who display symptoms for medical examinations and testing, where necessary; and
- submitting data collected during the screening and testing process to the DG of the Department of Health.

Workers in private residences

Work in private residences is permitted, but relevant health protocols and social distancing measures for the people employed in private residences must be adhered to.

Return to Work Pack

We are in the process of updating our **Return to Work Pack** to comply with the AL3 Regulations, and the anticipated amendments to the Occupational Health and Safety Directive.

SOURCE	https://www.bowmanslaw.com/insights/employment/covid-19-alert-level-3-what-south-african-employers-should-do/
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6. 8 business case studies

CASE STUDY 1

Meet **Elaine Abrahams**, an experienced Makeup Artist from Mbombela.

Elaine studied Business Management and Makeup Artistry. Driven by not only making faces pretty, she also teaches the skill to people around her to empower her local community. Elaine is an entrepreneur trying to make a difference. She has currently employed three full-time workers. She says that her goal is to have an academy and work with different schools around South Africa to create a platform by providing skills development in the beauty industry. She currently hosts makeup workshops, sells beauty products, as well as other retail products such as hair products and fragrances. Her company, Lady Abrahams (Pty) Ltd, does makeup application for all occasions; bridal, graduations, photo shoots and tutorials and also supplies hair weaves. She used her savings to start the business a few years ago. Elaine says, "I love the art of makeup, but it's beyond that; I love the smile it brings to people".

CASE STUDY 2

Meet **Johan van Wyk**, a 40-year old entrepreneur from Upington in the Northern Cape.

Mr van Wyk is the founder of Van Wyk Electronic Repairs CC. He registered the business in 2005 and has been operating for the last 15 years. He took out a business loan from the bank to purchase the equipment needed to fix the appliances. He obtained a Technical Support certificate, as well as a

Diploma in Computer Hardware Technology. Van Wyk Electronic Repairs CC is a technical support company that fixes laptops, desktops and phones - he also sells refurbished electronic appliances. There are ten full-time staff members that work in the organization. Johan says that the company goes the extra mile in catering for their clients by doing house calls as well as offering telephonic assistance. Johan believes that every journey begins with a step, and he needs to continue to move and grow in an industry that changes so quickly.

CASE STUDY 3

Meet **Lerato Tshabalala**, a 49-year old entrepreneur from Emangeni.

In 2015, she and her two sons, Sipho and Lindani, decided to form a partnership. Lerato is a qualified mechanic, and she started a fully operational car workshop with her two sons, focusing on fixing, servicing and maintaining cars in the region. The business is called Mshengu & Sons and focuses primarily on German cars. The three partners each contributed capital to make share that Mshengu & Sons could start the business effectively. Their services also include vehicle towing, recovery, tracking and fleet management. They also supply new and second-hand BMW spares. Mshengu & Sons has 4 full-time employees. In 2018, Mrs Tshabalala completed her degree in Business Management. The business is growing by the day.

CASE STUDY 4

Meet, **Micaela Smith**, a 33-year old graduate from East London.

Micaela furthered her studies and obtained her Honors degree in Communication Sciences. In 2017, she decided to register a publishing company called Micaela Works (Pty) Ltd. The company became operational in 2018 and started gaining momentum. Micaela took out a small loan from the bank to assist her in her operational costs to get the going. Micaela is an author who has 4 published books to her name, with her fifth soon to be released in July 2021. Micaela saw that there was a shortage of publishers in South Africa who would walk a journey with inexperienced and talented writers. Micaela has three part-time staff members that assist her in running the business. Micaela Works (Pty) Ltd. serves to provide a platform for young writers to publish their work and receive the recognition they deserve. Micaela says, "Everyone has a story; I just want to create a platform for their story to be heard".

CASE STUDY 5

Meet, **Refilwe Lephoi**, a 28-year old aspiring entrepreneur from Mafikeng.

Refilwe studied Professional Cookery and Basic cake decorating at a culinary school in Mafikeng. She had the opportunity to hone her skills when working as a pastry chef at a beautiful resort in New York. She is currently alone in the business and has decided to run her business informally until the business grows. Refilwe's mother assisted her with the capital to buy the equipment needed to start baking. She has been able to pay her mother back with interest. Her core business includes baking cakes, cupcakes, cakesicles, scones and biscuits. Refilwe has been able to employ 5 part-time workers in her small business. Refilwe says, "I would like to own a coffee shop and bakery hopefully within the next 2 years."

CASE STUDY 6

Meet **Ricardo Solomon**, a music promoter and the founder of ABC Entertainment Ltd.

The company is based in Johannesburg. In 2009, Ricardo entered into the entertainment industry professionally with the aim of maximising profit and contributing to unemployment around his area. His ultimate goal was to organise and promote music events within the SADC region, host international artists through his production house company (sound, lighting and stage), ABC Entertainment Ltd, and promote local and upcoming artists. He took a huge risk and invested all of his money into the business. Ricardo's risk paid off and he received his big break when he hosted a number of big events during the World Cup in 2010. His company went public in 2017. He is an entrepreneur who has showed how much can be achieved with hard work. There are currently more than 10 000 employees working at ABC Entertainment Ltd. Ricardo's motto is "when dedication and determination meets hard work, that's luck".

CASE STUDY 7

Meet **Thabo Boleu**, a 32-year old entrepreneur from Polokwane.

He furthered his studies and obtained a National Certificate in Entrepreneurship. In 2015, he registered a private company called Boleu Solutions (Pty) Ltd. He then bought and resold cleaning detergents and generated a small profit. Thabo had a passion for cleaning supplies, and began doing research on manufacturing. In 2018, Thabo used the profit he made from reselling cleaning detergents and started manufacturing his own cleaning detergents. His business has now employed five full-time staff members and manufacturing 14 different detergents. Boleu Solutions supplies large companies around South Africa. Mr Boleu spread his wings and ventured into Industrial Cleaning Services and is now one of the few companies offering these services to mines in the region. Thabo believes that entrepreneurs should be prepared to start small but think big.

CASE STUDY 8

Meet **Tlotlo Lengau**, a 29-year old from Welkom in the Free State.

Tlotlo is the owner of KLM Driving School. Tlotlo started off at KLM driving school as an assistant facilitator. With the knowledge and certification that he had gained, he then became an instructor. Tlotlo's passion for his work and his entrepreneurial spirit drove him to use his own capital, as well as securing a loan from a bank to purchase the driving school. He started running the business and employed 2 assistants. In a space of 4 years it has become one of the most reputable driving schools in and around Welkom - so much so that he has clients that come from across the country. Thabo believes that entrepreneurs should keep dreaming, keep believing and keep working until they achieve their goals.