



## Cancer in the Solomon Islands



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### ABSTRACT

**Introduction:** The Solomon Islands, with a population of 550,000, has significant challenges in addressing non-communicable diseases, including cancer, in the face of significant economic, cultural, general awareness and health system challenges.

**Objectives:** To summarise the existing knowledge regarding cancer in the Solomon Islands, to gather new data and make recommendations.

**Methods:** A literature review was undertaken and cancer data from the National Referral Hospital, Honiara were analysed and are presented. Key stakeholders were interviewed for their perspectives including areas to target for ongoing, incremental improvements. Last, a health services audit for cancer using the WHO SARA tool was undertaken.

**Results:** Breast and cervical cancer remain the first and second most commonly identified cancers in the Solomon Islands. The Solomons cancer registry is hospital based and suffers from incomplete data collection due to its passive nature, lack of resources for data entry and processing resulting in weak data which is rarely used for decision-making. The health system audit revealed system and individual reasons for delayed diagnosis or lack of cancer treatment or palliation in the Solomon Islands. Reasons included lack of patient knowledge regarding symptoms, late referrals to the National Referral Hospital and inability of health care workers to detect cancers either due to lack of skills to do so, or lack of diagnostic capabilities, and an overall lack of access to any health care, due to geographical barriers and overall national economic fragility.

**Conclusion:** The Solomon Islands is challenged in preventing, diagnosing, treating and palliating cancer. Stakeholders recommend establishing specialty expertise (in the form of a cancer unit), improved registry processes and increased collaboration between the sole tertiary hospital nationwide and other Solomon health services as important targets for incremental improvement.

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## 1. Introduction

The Solomon Islands is an island nation in the Melanesia region with an estimated population of 550,000 people spread over more than 900 islands [1]. The Solomon Islands is one of the least developed countries in the Pacific Region with a 2014 United Nations Development Program Human Development Index ranking of 157 of 187 countries [2]. The Solomon Islands experience a severe under resource of health professionals and

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in 2012 the ratio of fully trained doctors nationwide was 0.21 per 1000 people [3]. In particular, the Solomon Islands suffer from a lack of medical specialists. There are no oncologists or haematologists.

Based on 2014 World Health Organization (WHO) data, there are an estimated 111.2 deaths per 100,000 persons [3] attributable to cancer in the Solomon Islands. Of these, Solomon Islanders who suffer from breast cancer, ovarian cancer and uterine cancer have poor age-standardized death rates [3]. The mortality to incidence ratio for cancer remains high: 0.87 for males and 0.65 for females [4]. Mortality also remains high for malignancies of varying types; notably, cervical cancer at 18.8 deaths per 100,000, while worldwide the cervical cancer age-standardised mortality rate is 6.8 per 100,000 [5].

Although the number of people with non-communicable diseases (NCDs), including cancers, is anticipated to increase exponentially in the Pacific Region by 2030 the prevalence and impact of cancer in the Pacific, and certainly in the Solomon Islands is largely unknown. Most reports and publications about cancer in the Pacific region are merged into international reports grouping the Pacific Islands into the Asia Pacific Region and thus this data is more reflective of the disease prevalence in Asia than the Pacific Islands. The current lack of Solomon Islands specific data is due to: limited financial resources, weak health system, lack of training, human resource issues, and lack of time to focus on any of the key aspects of cancer (prevention, screening, diagnosis, treatment, palliation, data systems, and research).

## 2. Objectives

This paper aims to summarise the existing literature about cancer in the Solomon Islands, to present data from the Solomon Island cancer registry, and present health system audit data (national and provincial) regarding cancer detection, diagnosis, treatment and palliation; as well as make recommendations for ways forward.

## 3. Methods

(1) Literature review (peer-reviewed, grey, national and provincial documents)

The databases MEDLINE, EMBASE, and CINAHL were searched for the following MESH terms: cancer, Solomon Islands.

(2) Qualitative research using email, phone and in-person communication with non-governmental organizations (NGOs), clinicians (local and in Australia, New Zealand and the United States), policy makers, and funding organisations to ensure no data on cancer were missed and to describe existing prevention, diagnosis and treatment of cancer in the Solomon Islands.

(3) Descriptive data analysis of cancer registry data from Honiara from co-authors (TD, JK, JWI, MO). Data on the Solomon Islands Cancer Registry were obtained from an existing internal document and power point presentation from 2015. Data entered into the registry were obtained from: Histopathology reports, fine needle aspiration biopsy (FNAB) reports, Medical ward, Surgical ward, Gynecological ward, Paediatric ward, Cytology reports, Patient's medical records, and Death certificates from the National Referral Hospital. The data from the registry were collected between January 1st 2014 and December 31st 2015.

(4) Descriptive data analysis of gastrointestinal (GI) cancer data from co-authors (EN, RJ) emerging from a new collaboration between Solomon Islanders, and American gastrointestinal and surgical specialists.

(5) Medical record reviews in the Solomon Islands in order to present de-identified case vignettes to provide qualitative experience of cancer in the Solomon Islands.

(6) Health systems and services audit and readiness for cancer using the WHO SARA Health services audit tool, conducted at the National Referral Hospital and one of 7 Provincial Hospitals. This tool was modified for cancer and the Solomon Islands by co-authors (AM, AC, JK).

## 4. Results

### 4.1. Literature review

#### 4.1.1. Overview of the health system and socioeconomic context

The island nation faces increasing socioeconomic challenges including urbanisation (although 80% of the population still live a subsistence lifestyle on remote islands), climate change, and environmental disasters such as earthquakes and poverty [7]. Approximately 22.7% of the population live in poverty (2010) with 1% of household income spent on healthcare [7]. The Solomon Islands face a growing burden of NCDs whilst combating communicable diseases [7]. The public healthcare system depends on a five-tiered healthcare system with seven provincial hospitals and one national referral hospital (NRH). None of the provincial hospitals had access to surgical or specialist services as of 2016; although minimal surgical services are planned for at least 2 provincial hospitals in the near future. Seventy-three percent of all medical personnel are based in the capital however 80% of the population lives on rural islands [7]. Health clinics and provincial hospitals remain under-developed, with up to 70% of area health clinics experiencing infrastructure degradation [7]. This unequal distribution of healthcare is underpinned by a severe health workforce deficit with an estimated 0.21 doctors per 1000 people [7]. Patients often bypass the existing tiered system by travelling directly (frequently by boat, on average 240 kilometres<sup>1</sup>) to the NRH. Infrequently, patients travel internationally for their healthcare needs [7]. This international travel is nearly fully for NCDs, including cancer – and is a “significant and fast-growing component of government health expenditure that benefits a small fraction of the population” [8]. There is an important imperative to ensure equitable and appropriate referrals overseas and to evaluate whether such schemes are cost-effective.

High quality data is sparse in a country that has to prioritise curative treatment and has little to no budget for data collection, cleaning and analysis; data are typically derived from estimates from neighbouring countries [4,7,9]. There is no data on accessibility and appropriateness of cancer care including any palliative care [9]. Whilst the existing healthcare system has quality management and infrastructure evaluation [7], there are no audits to deliver information on cancer presentations, treatment times and outcomes. The Solomon Islands face a significant health financing challenge that affects development [10]. In the Solomon Islands 65% of health care is covered by the government, 29% is covered by external development partners and the remaining 6% from out of pocket payments [6]. For the Solomon Islands in 2013 about 5% of GDP was spent on health. This is double the typical percent of GDP spent on health in Low and Middle Income Countries (LMICs). This share of GDP spent on health is growing for most countries in the Pacific and, according to a recent World Bank Report this is unlikely to be sustainable financially in the future. Increased spending may not only be what is needed as existing resources could be used to improve effectiveness, efficiency, and equity of the health services [10,11]. Economic modelling data by the World Bank published in June 2016 demonstrated that by 2040 cancer will be responsible for 9% of the lost economic output for the Solomon Islands [12]. Typically lost economic output is driven by loss of working adults due to early death, and although this lost economic output is less in the Solomon Islands where the majority of its people live a

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