



# Google Charts

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臺北榮民總醫院家庭醫學部  
臺北榮民總醫院醫學研究部大數據中心

# 課前作業

# 上課前請先安裝套件 : googleVis

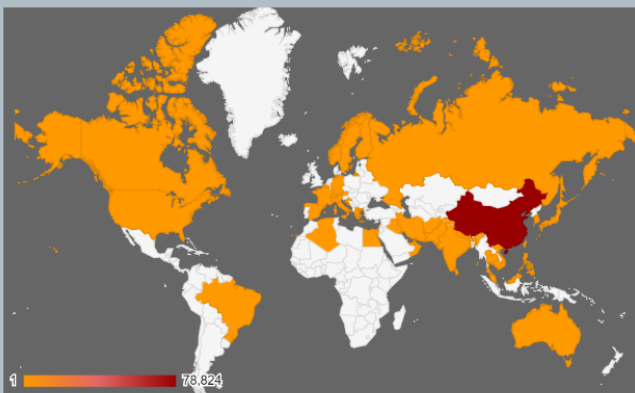
```
install.packages(c("googleVis"))
```



關於CDC 傳染病與防疫專題 預防接種 國際旅遊與健康

更多資訊請點我 自中港澳返台14日內若有不適，撥1922依指示就醫，並務必主動告知旅遊史

### COVID-19 (武漢肺炎)



全球確定病例數	83046
全球死亡病例數	2858
全球致死率	3.4%
受影響國家數	46

更新時間：2020-02-28 09:00

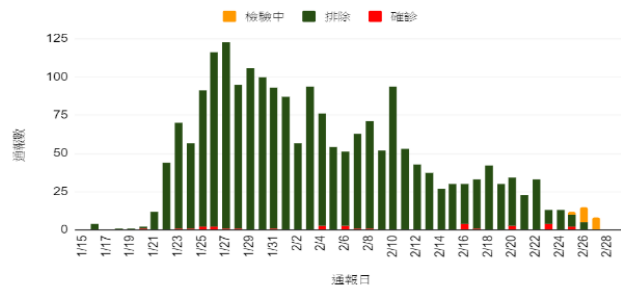
### 國內總計

通報	2094	確診	34	排除	2037	初驗陰性	18
----	------	----	----	----	------	------	----

### 昨日新增

通報	8	確診	0	排除	13
----	---	----	---	----	----

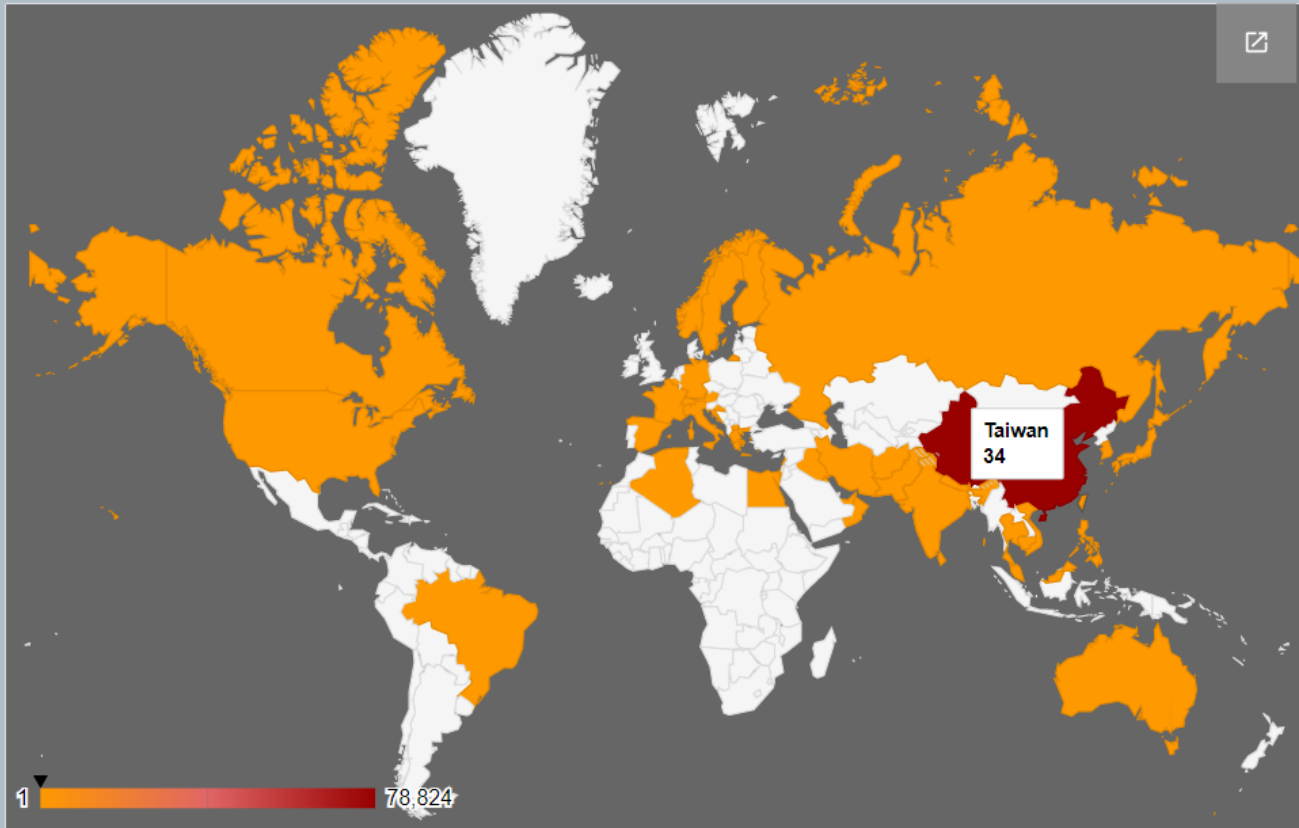
嚴重特殊傳染性肺炎通報個案趨勢圖



更新時間：2020-02-28 00:05



# COVID-19 (武漢肺炎)



全球確定病例數

83046

全球死亡病例數

2858

全球致死率

3.4%

國家/地區數

46

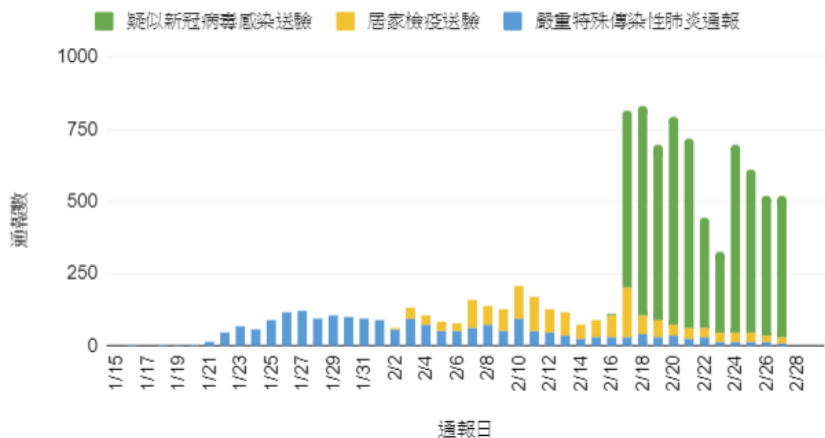
# 國內總計

通報	2094	確診	34	排除	2037	初驗陰性	18
----	------	----	----	----	------	------	----

# 昨日新增

通報	8	確診	0	排除	13
----	---	----	---	----	----

新冠病毒感染監測趨勢圖 — 依通報來源



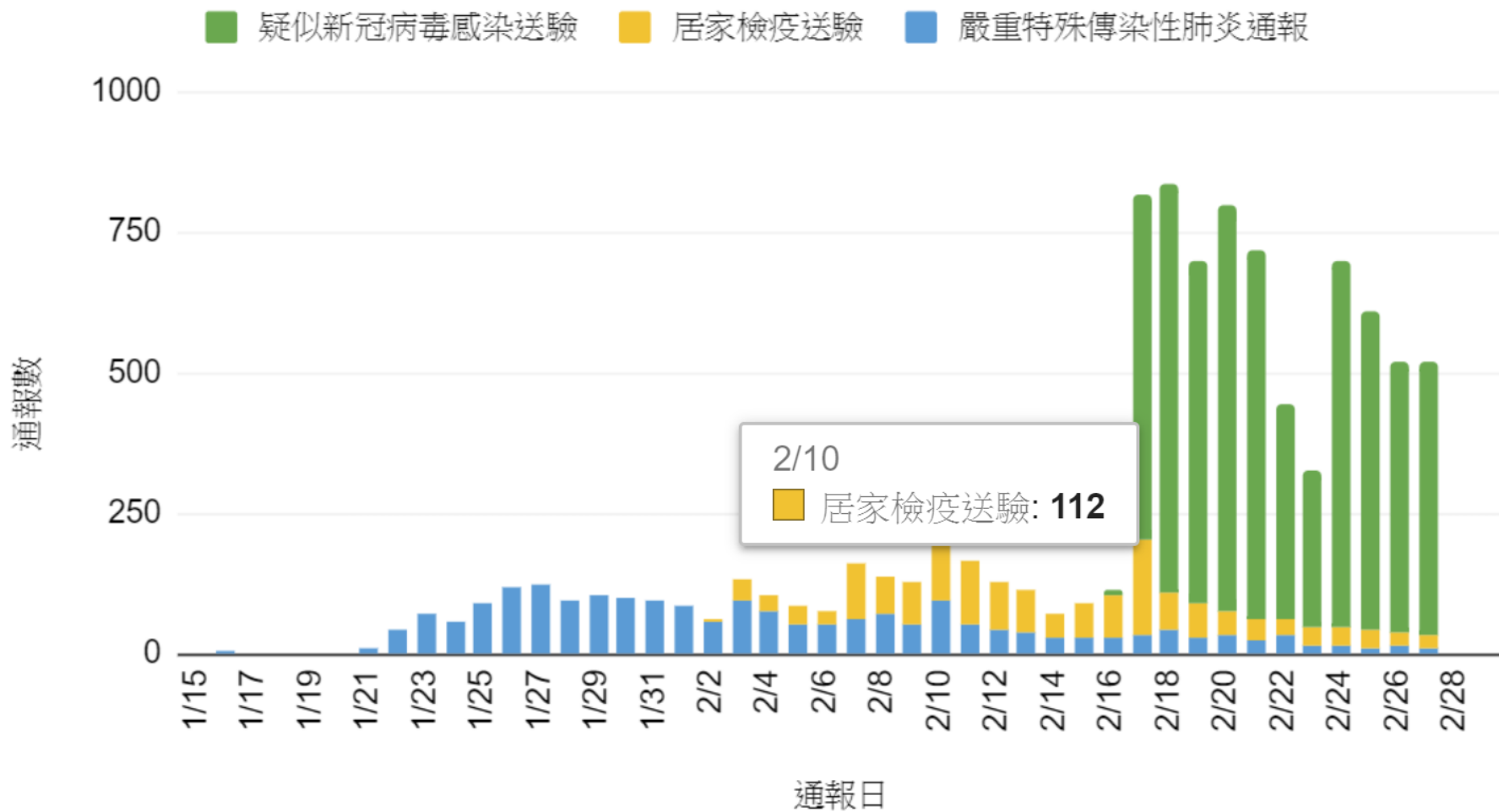
嚴重特殊傳染性肺炎通報個案趨勢圖



[https://docs.google.com/spreadsheets/u/0/d/e/2CAIWO3el-HmgYwUDCtPq\\_IRifv9VeS5De\\_q1mFXBFN3ldl8fo4s9imGUqQGBwxlo-ETfBD\\_zxsbRQoCRyMg/gviz/chartframe?oid=1309802820](https://docs.google.com/spreadsheets/u/0/d/e/2CAIWO3el-HmgYwUDCtPq_IRifv9VeS5De_q1mFXBFN3ldl8fo4s9imGUqQGBwxlo-ETfBD_zxsbRQoCRyMg/gviz/chartframe?oid=1309802820)

範例

## 新冠病毒感染監測趨勢圖 — 依通報來源



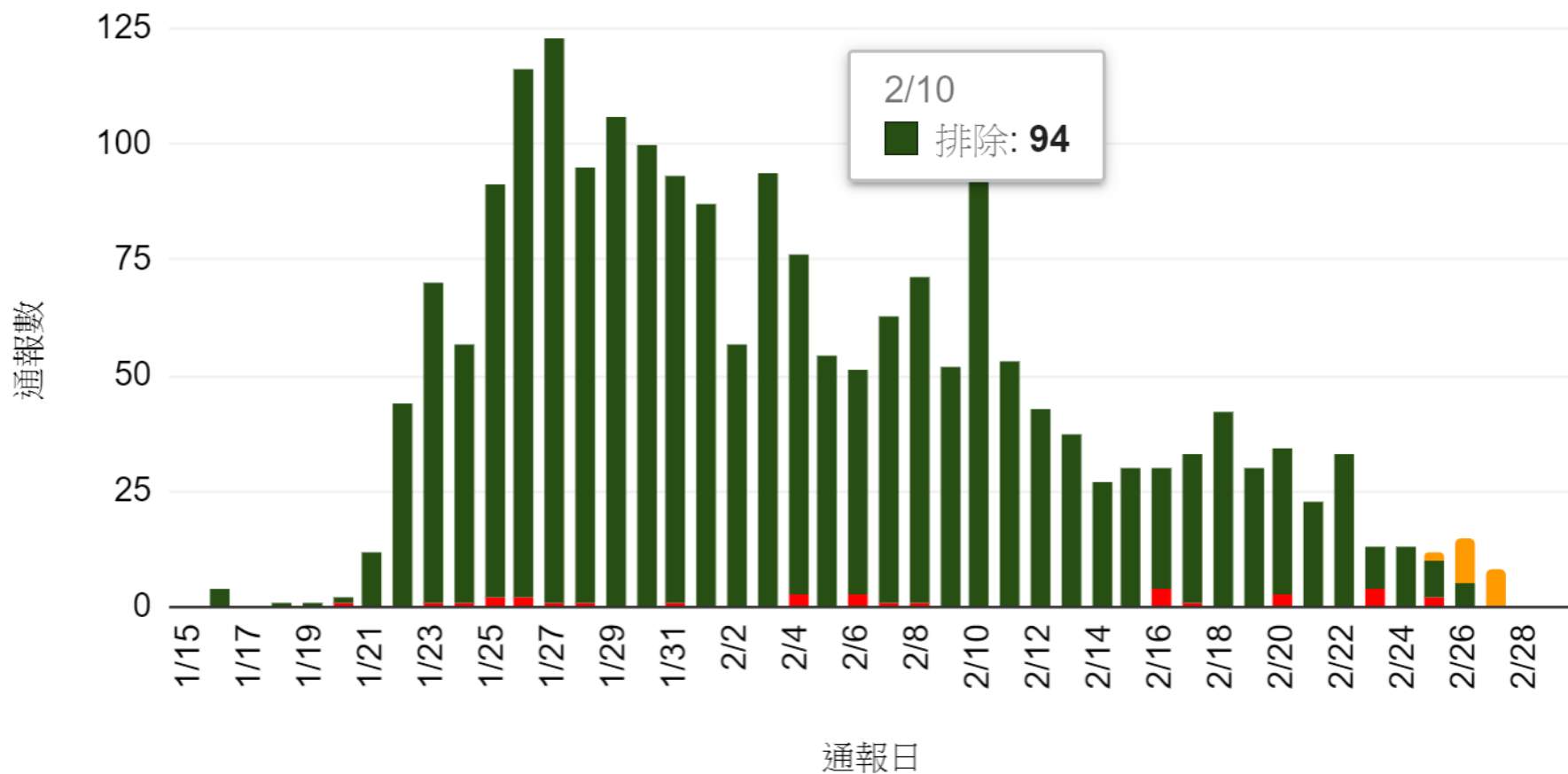
\* 2020 Feb 28

[https://docs.google.com/spreadsheets/u/0/d/e/2CAIWO3el-HmgYwUDCtPq\\_IRifv9VeS5De\\_q1mFXBFN3ldl8fo4s9imGUqQGBwxlo-ETfBD\\_zxsbRQoCRyMg/gviz/chartframe?oid=1896691433](https://docs.google.com/spreadsheets/u/0/d/e/2CAIWO3el-HmgYwUDCtPq_IRifv9VeS5De_q1mFXBFN3ldl8fo4s9imGUqQGBwxlo-ETfBD_zxsbRQoCRyMg/gviz/chartframe?oid=1896691433)

範例

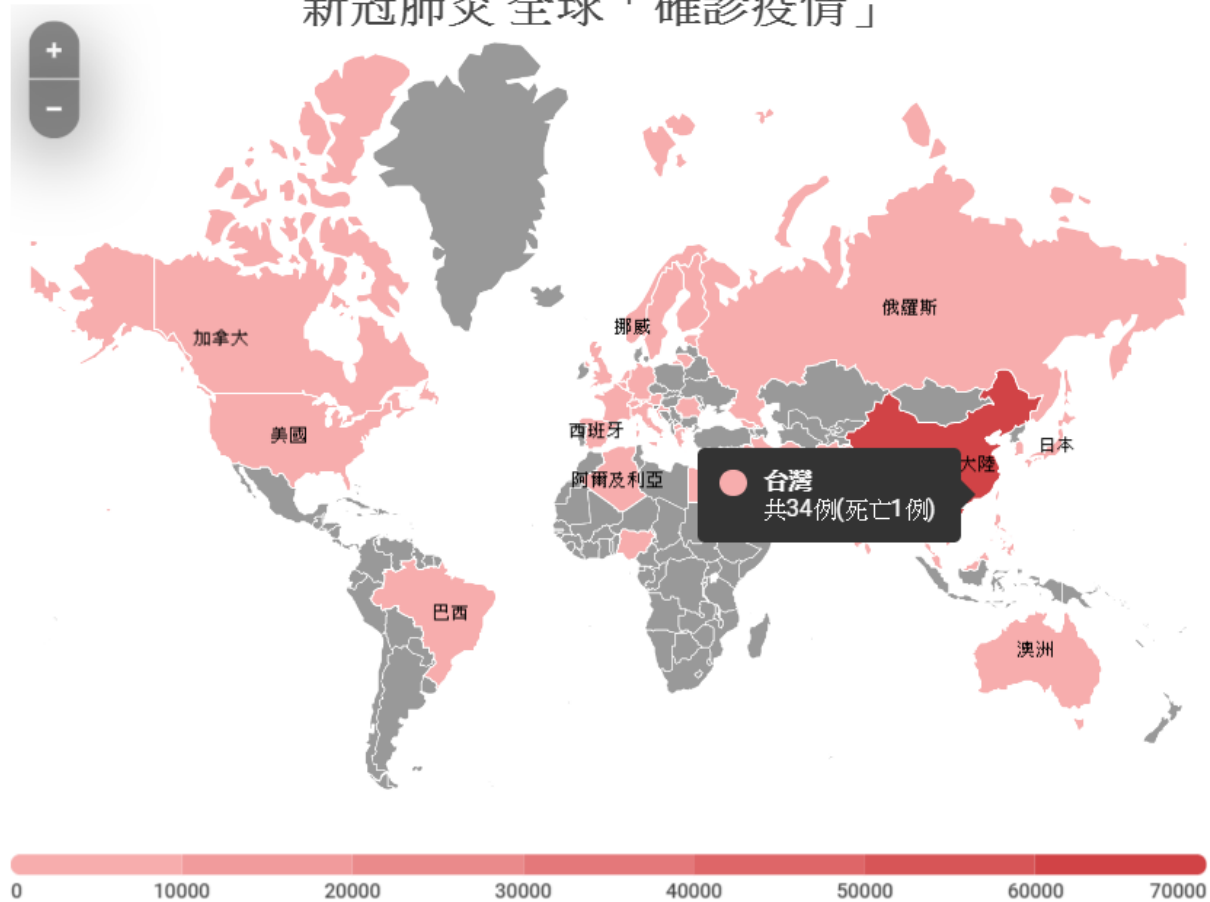
## 嚴重特殊傳染性肺炎通報個案趨勢圖

檢驗中 排除 確診



\* 2020 Feb 28

### 新冠肺炎 全球「確診疫情」



Share

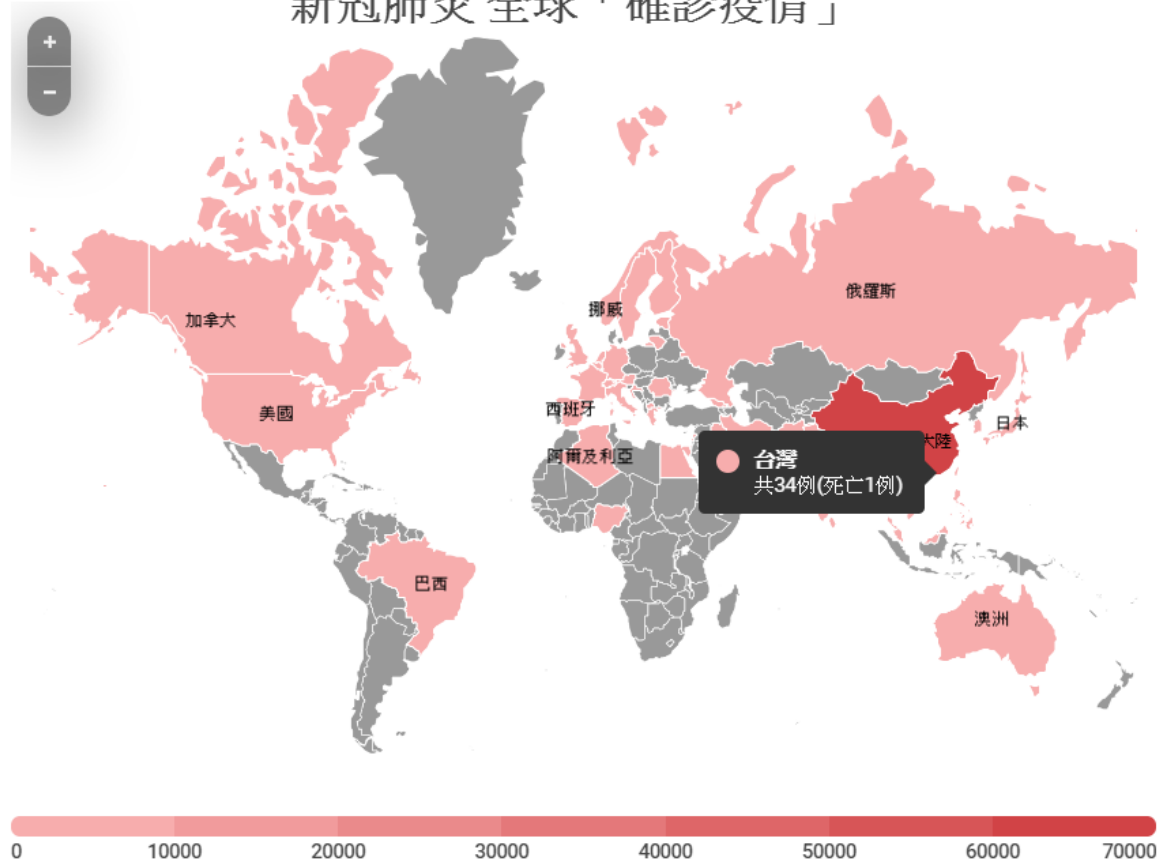
made with infogram



武漢新型冠狀病毒 全球「確診疫情」  
Infogram



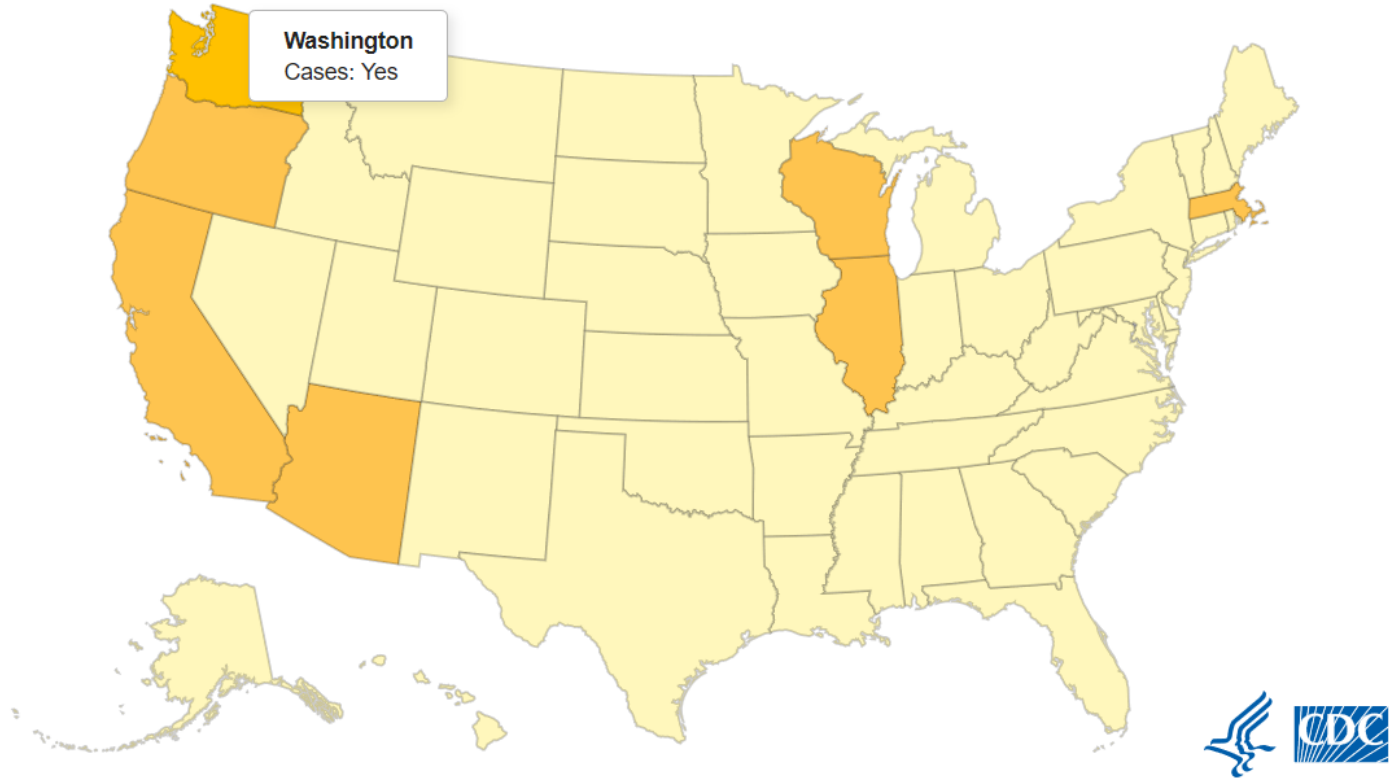
### 新冠肺炎 全球「確診疫情」



Share Made with infogram

武漢新型冠狀病毒全球「確診疫情」

States with Confirmed and Presumptive Positive Cases of COVID-19\*

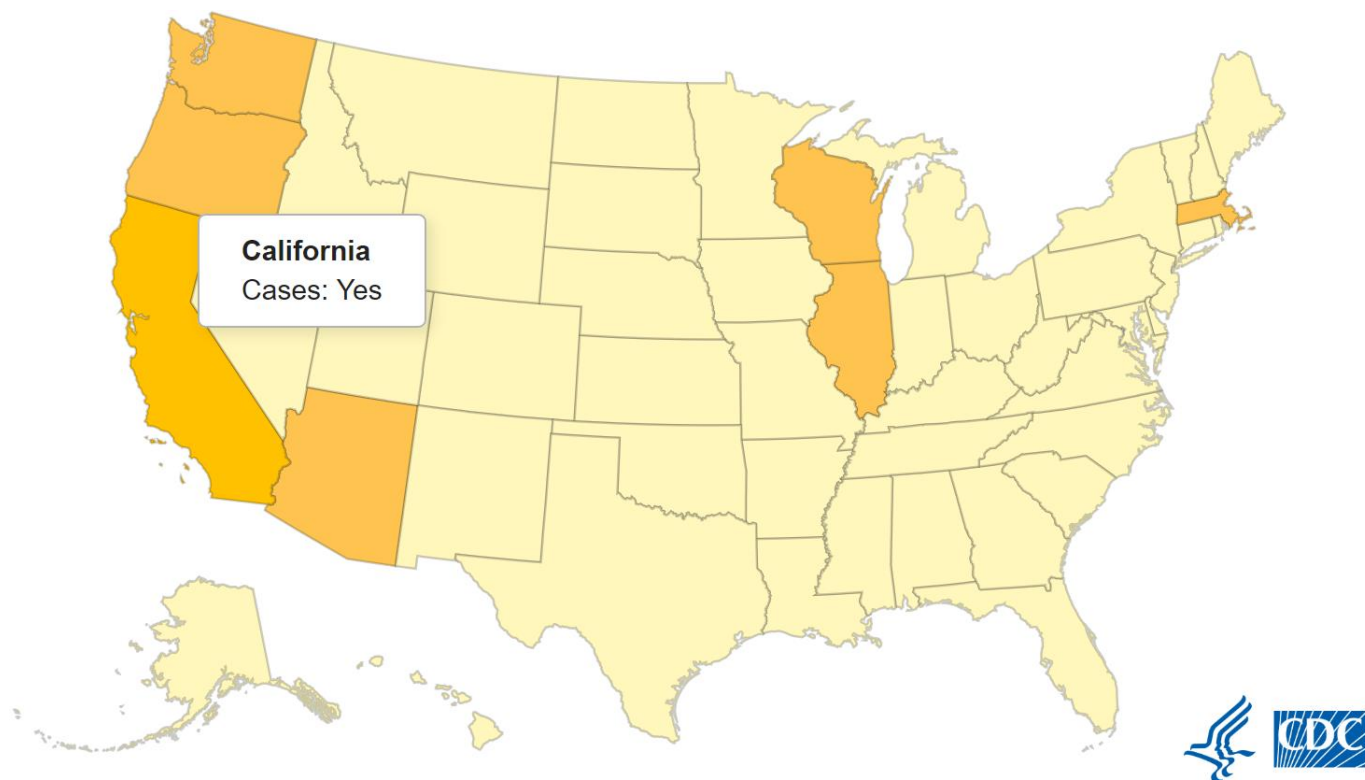


States



\* This map represents cases detected and tested in the United States through U.S. public health surveillance systems since January 21, 2020. It does not include people who returned to the U.S. via State Department-chartered flights.

[https://www.cdc.gov/TemplatePackage/contrib/widgets/cdcMaps/build/index.html?c  
host=www.cdc.gov&cpath=/coronavirus/2019-ncov/cases-in-  
us.html&csearch=&chash=&ctitle=Coronavirus%20Disease%202019%20\(COVID-  
19\)%20in%20the%20U.S.%20%7C%20CDC&wn=cdcMaps&wf=/TemplatePackage  
/contrib/widgets/cdcMaps/build/&wid=cdcMaps1&mMode=widget&mPage=&mChan  
nel=&class=mb-3&host=www.cdc.gov&theme=theme-  
cyan&configUrl=/coronavirus/2019-ncov/map-data-cases.json](https://www.cdc.gov/TemplatePackage/contrib/widgets/cdcMaps/build/index.html?c<br/>host=www.cdc.gov&cpath=/coronavirus/2019-ncov/cases-in-<br/>us.html&csearch=&chash=&ctitle=Coronavirus%20Disease%202019%20(COVID-<br/>19)%20in%20the%20U.S.%20%7C%20CDC&wn=cdcMaps&wf=/TemplatePackage<br/>/contrib/widgets/cdcMaps/build/&wid=cdcMaps1&mMode=widget&mPage=&mChan<br/>nel=&class=mb-3&host=www.cdc.gov&theme=theme-<br/>cyan&configUrl=/coronavirus/2019-ncov/map-data-cases.json)



States







# 美國大學疫情地圖爆紅 幕後設計者是中國留學生

2020-04-07 14:58 聯合新聞網 / 綜合報導



全球媒體最常引用美國約翰·霍普金斯大學 (Johns Hopkins University) 推出的新冠肺炎疫情即時地圖。圖擷自 Johns Hopkins University

Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Total Confirmed 1,464,852

Confirmed Cases by Country/Region/Sovereignty

402,923	US
146,690	Spain
139,422	Italy
110,070	France
109,329	Germany
82,809	China
64,586	Iran
61,455	United Kingdom
34,109	Turkey
23,403	Belgium
23,248	Switzerland



Cumulative Confirmed Cases Active Cases

184 countries/regions

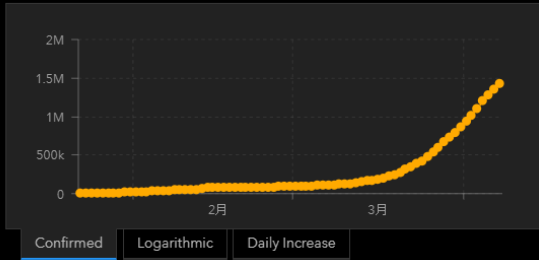
Lancet Inf Dis Article: Here. Mobile Version: Here. Visualization: JHU CSSE. Automation Support: Esri Living Atlas team and JHU APL. Contact US. FAO. Data sources: WHO, CDC, ECDC, NHC, DXY, 1point3acres, Worldometers.info, BNO, state and national government

Total Deaths 85,397

17,669 deaths	Italy
14,673 deaths	Spain
10,328 deaths	France
7,097 deaths	United Kingdom
4,009 deaths	New York City <b>New York</b> US
3,993 deaths	Iran
3,213 deaths	

Total Recovered 315,105

36,081 recovered	Germany
29,812 recovered	Iran
26,491 recovered	Italy
22,717 recovered	US
19,523 recovered	France
9,800 recovered	Switzerland
6,776 recovered	



```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <title>ArcGIS Dashboards</title>
  <meta name="description" content>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="icon" href="assets/images/favicon.ico?" type="image/x-icon">
  <link href="https://js.arcgis.com/3.32/dijit/themes/claro/claro.css" rel="stylesheet" type="text/css">
  <link href="https://js.arcgis.com/3.32/esri/css/esri.css" rel="stylesheet" type="text/css">
  <link rel="stylesheet" href="assets/vendor-ff6a5e0c0264e398e1ffaeb015926635.css">
  <link rel="stylesheet" href="assets/app-light-7137f008b303d663c3645f07f162e89f.css">
  <script src="assets/amd-config-7e9801fc9c916a27bb75c6f356e09e0d.js"></script>
</head>
<body class="claro">
  <script src="https://js.arcgis.com/3.32/init.js" data-amd="true"></script>
  <script src="assets/amd-loading-d8029d0343fa400ebae9865c42984750.js" data-amd-loading="true"></script>
  <div id="initialLoadingContainer" class="full-height flex-vertical flex-justify-center flex-align-items-center">
    <div class="loader is-active">
      <div class="loader-bars"></div>
    </div>
  </div>
</body>
</html>
```



# Topics

- Google Charts
- googleVis
- Resources

SECTION I

# GOOGLE CHARTS

Interactive charts for browsers and mobile devices.

首頁 指南 參考資料 完備支援

傳送意見

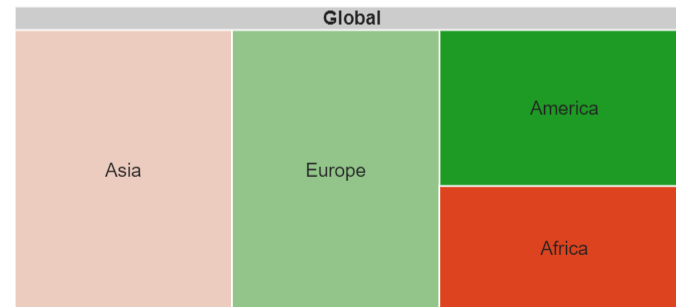
## Display live data on your site

### About Google chart tools

Google chart tools are powerful, simple to use, and free. Try out our rich gallery of interactive charts and data tools.

[GET STARTED](#) [CHART GALLERY](#)

Tree Map - [view source](#)



正在等候 google-developers.appspot.com...  [more](#)

Overview

- Hello, Charts!
- Quickstart
- Load the Charts Library
- Prepare the Data
- Customize the Chart
- Draw the Chart
- Draw Multiple Charts

- Chart Types
- Chart Gallery
- Annotation Charts
- Area Charts
- Bar Charts
- Bubble Charts
- Calendar Charts
- Candlestick Charts
- Column Charts

首頁 > 產品 > Charts > 指南



# Using Google Charts

Google Charts provides a perfect way to visualize data on your website. From simple line charts to complex hierarchical tree maps, the [chart gallery](#) provides a large number of ready-to-use chart types.

The most common way to use Google Charts is with simple JavaScript that you embed in your web page. You load some Google Chart libraries, list the data to be charted, select options to customize your chart, and finally create a chart object with an id that you choose. Then, later in the web page, you create a `<div>` with that id to display the Google Chart.

That's all you need to [get started](#).

Charts are exposed as JavaScript classes, and Google Charts provides [many chart types](#) for you to use. The default appearance will usually be all you need,



Overview

Hello, Charts!

- Quickstart
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- Draw Multiple Charts

Chart Types

- [Chart Gallery](#)
- Annotation Charts
- Area Charts
- Bar Charts
- Bubble Charts
- Calendar Charts
- Candlestick Charts
- Column Charts
- Combo Charts
- Diff Charts

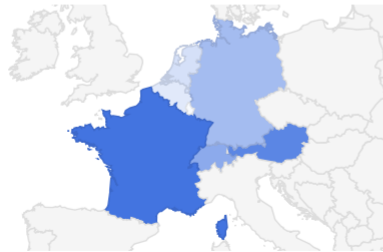
# Chart Gallery



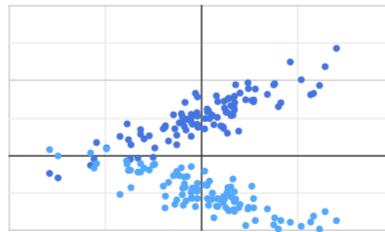
Our gallery provides a variety of charts designed to address your data visualization needs. These charts are based on pure HTML5/SVG technology (adopting VML for old IE versions), so no plugins are required. All of them are interactive, and many are pannable and zoomable. Adding these charts to your page can be done in [a few simple steps](#).

Some additional community-contributed charts can be found on the [Additional Charts page](#).

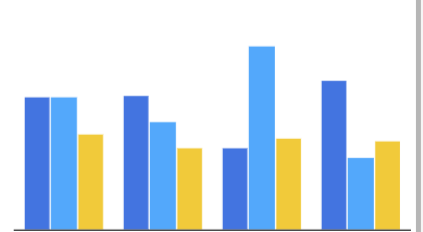
Geo Chart



Scatter Chart



Column Chart



Histogram

Bar Chart

Combo Chart

# Prerequisites 先決條件

- html
- JavaScript (JS)
- JS library for charts [many]
- Google Docs/Sheets [optional]



Google Maps is a Google API  
Google Fonts is a Google API  
Google Charts is a Google API

- Independent of R

# Google Charts 架構

```
<html>  
<body>
```

```
<div id = "piechart"></div>
```

DIV  
(division)  
(區塊)

JS Library

```
<script type = "text/javascript" src = "https://www.gstatic.com/charts/loader.js"></script>
```

```
<script type = "text/javascript">
```

```
// Load google charts
```

```
// Draw the chart and set the chart values
```

```
// Display the chart inside the <div> element with id="piechart"
```

```
</script>
```

```
</body>
```

```
</html>
```

# Pie Chart 圓餅圖

- 參見 `GoogleCharts_Pie.html`
  - 在檔案內更改相關數據，用以產製圖形
  - 在瀏覽器裡開啟檔案
  - 圖形係互動式
- 
- 另有 `GoogleCharts_Pie_Slice.html`

# 檔案置於 GoogleCharts 子目錄



<https://developers.google.com/chart/interactive/docs/gallery/piechart>

```
<html>
  <head>
    <script type="text/javascript" src="https://www.gstatic.com/charts/loader.js"></script>
    <script type="text/javascript">
      google.charts.load('current', {'packages':['corechart']});
      google.charts.setOnLoadCallback(drawChart);

      function drawChart() {

        var data = google.visualization.arrayToDataTable([
          ['Task', 'Hours per Day'],
          ['Work',    11],
          ['Eat',     2],
          ['Commute', 2],
          ['Watch TV', 2],
          ['Sleep',   7]
        ]);

        var options = {
          title: 'My Daily Activities'
        };

        var chart = new google.visualization.PieChart(document.getElementById('piechart'));

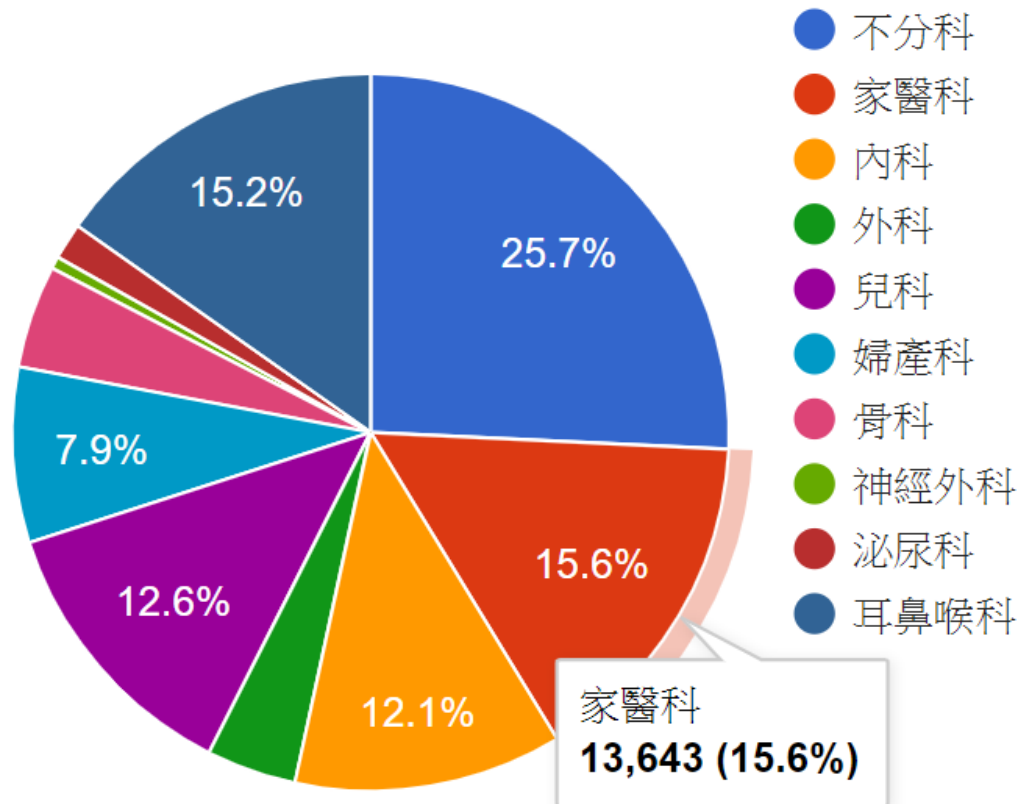
        chart.draw(data, options);
      }
    </script>
  </head>
  <body>
    <div id="piechart" style="width: 900px; height: 500px;"></div>
  </body>
</html>
```

// 在此處更改數據 用以產製圖形

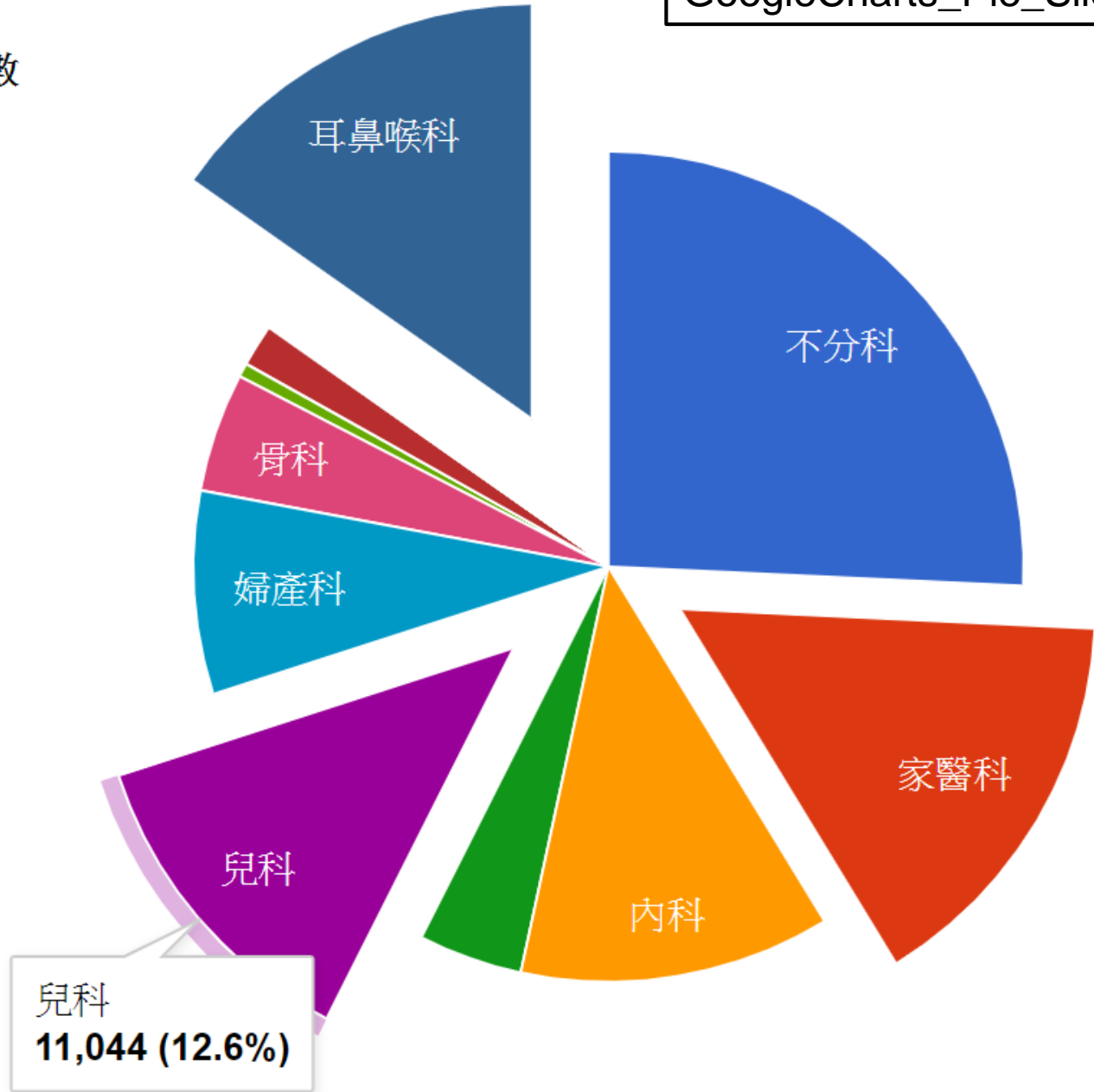
```
function drawChart() {  
  var data = google.visualization.arrayToDataTable([  
    ['科別', '看診數'],  
    ['不分科', 22580],  
    ['家醫科', 13643],  
    ['內科', 10615],  
    ['外科', 3553],  
    ['兒科', 11044],  
    ['婦產科', 6943],  
    ['骨科', 4068],  
    ['神經外科', 474],  
    ['泌尿科', 1443],  
    ['耳鼻喉科', 13367],  
  ]);  
  
  // Optional; add a title and set the width and height of the chart  
  var options = {'title': '各科看診數', 'width': 550, 'height': 400};  
  
  // Display the chart inside the <div> element with id="piechart"  
  var chart = new  
  google.visualization.PieChart(document.getElementById('piechart'));  
  chart.draw(data, options);  
}
```

# 圓餅圖

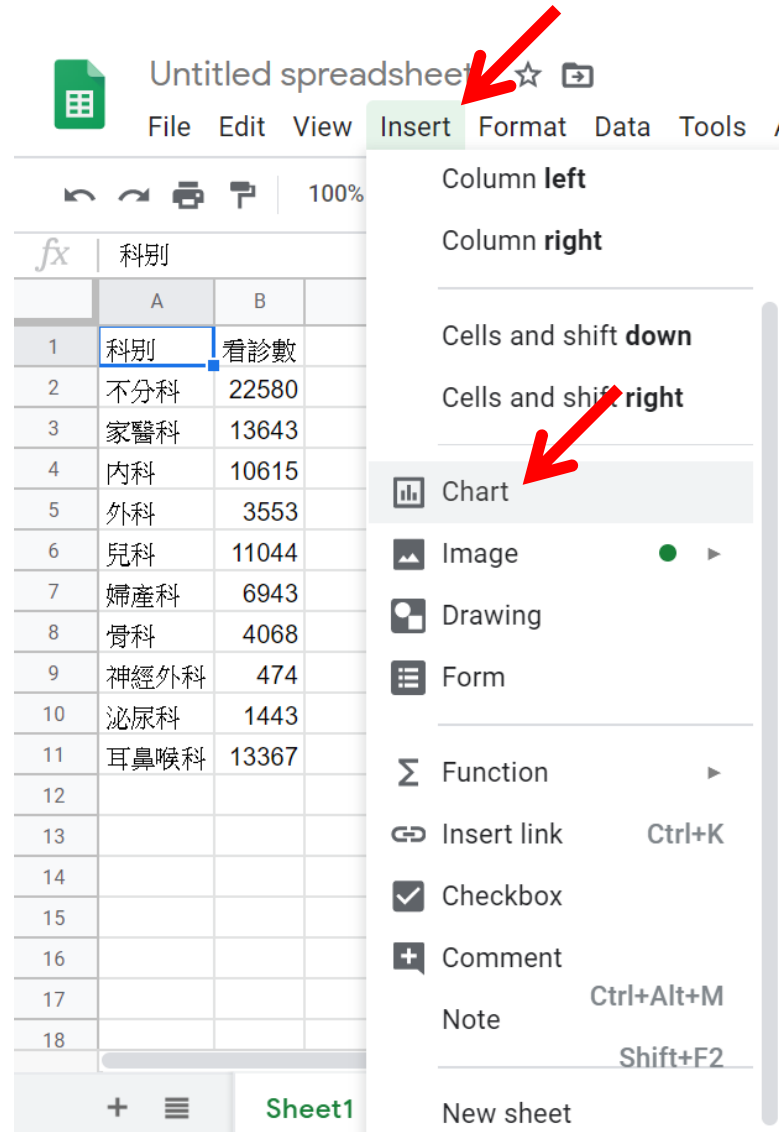
各科看診數



各科看診數



# Create Google Charts from Google Sheets



The screenshot shows the Google Sheets interface with the 'Insert' menu open. A red arrow points to the 'Insert' menu, and another red arrow points to the 'Chart' option. The spreadsheet data is as follows:

	A	B
1	科別	看診數
2	不分科	22580
3	家醫科	13643
4	內科	10615
5	外科	3553
6	兒科	11044
7	婦產科	6943
8	骨科	4068
9	神經外科	474
10	泌尿科	1443
11	耳鼻喉科	13367
12		
13		
14		
15		
16		
17		
18		

\* 需有 Google 帳號



Share



100% | \$ % .0 .00 123 | Default (Ari... | 10 | **B** *I* A | ...



Chart editor



Setup

Customize

A1:B11



Label

科別



Aggregate

Value

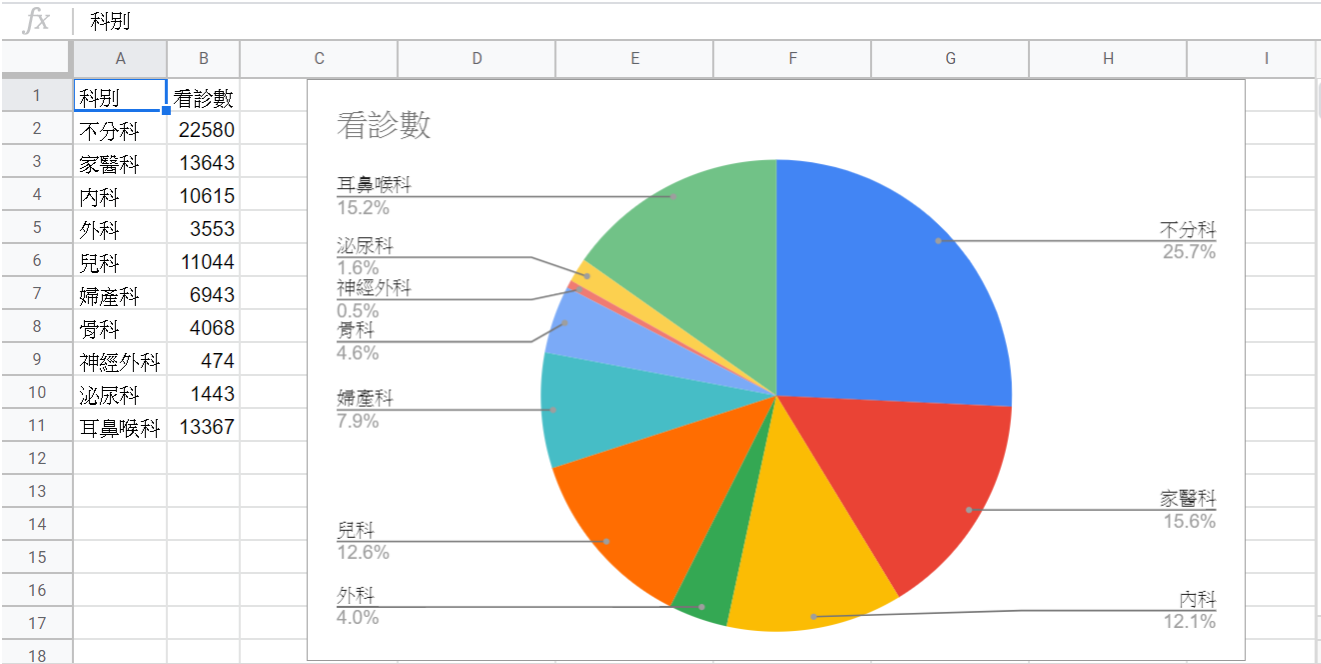
123 看診數



Switch rows / columns

Use row 1 as headers

Use column A as labels

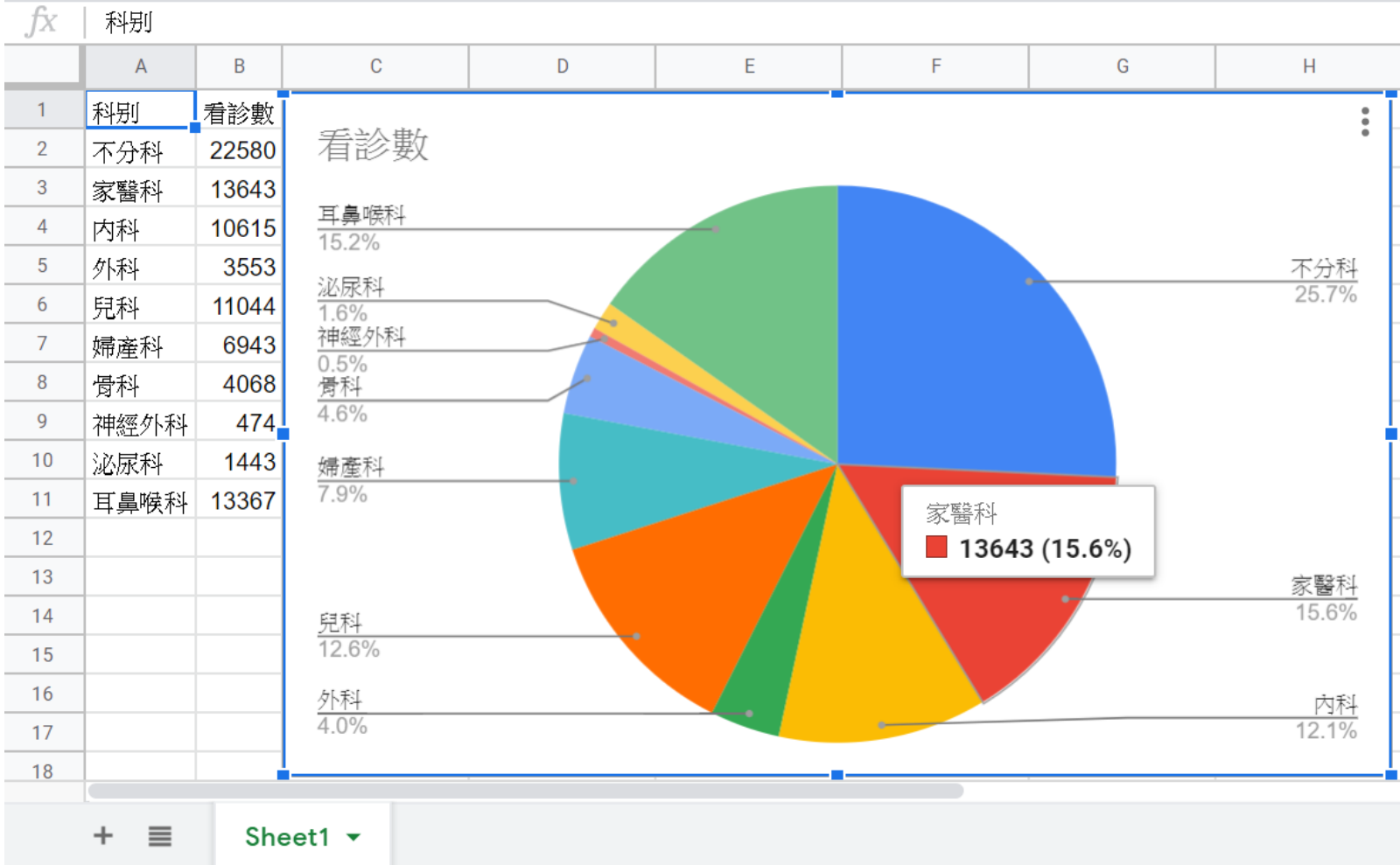




Untitled spreadsheet ☆ ↻

File Edit View Insert Format Data Tools Add-ons Help [All changes saved in Drive](#)

100% | \$ % .0 .00 123 | Default (Ari... | 10 | **B** *I* S A | ↵ | 🏠 | ⋮



\* 關掉 Chart editor 後，圖形才會是互動式。

SECTION II

# GOOGLEVIS



## googleVis: R Interface to Google Charts

R interface to Google's chart tools, allowing users to create interactive charts based on data frames. Charts are displayed locally via the R HTTP help server. A modern browser with an Internet connection is required and for some charts a Flash player. The data remains local and is not uploaded to Google.

Version: 0.6.4  
Depends: R ( $\geq 3.0.2$ )  
Imports: methods, [jsonlite](#), utils  
Suggests: [shiny](#) ( $\geq 0.4.0$ ), [httpuv](#) ( $\geq 1.2.0$ ), [knitr](#) ( $\geq 1.5$ ), [wbstats](#), [data.table](#)  
Published: 2019-05-16  
Author: Markus Gesmann [aut, cre], Diego de Castillo [aut], Joe Cheng [ctb], Ashley Baldry [ctb]

# googleVis examples

It may take a little while to load all charts. Please be patient. All charts require an Internet connection.

These examples are taken from the googleVis demo. You can execute the demo via

```
library(googLeVis)
demo(googLeVis)
```

For more details about the charts and further examples see the helpfiles of the individual googleVis function and review the [Google Charts API documentation](#) and [Terms of Service](#).

## Line chart

```
df=data.frame(country=c("US", "GB", "BR"),
               val1=c(10,13,14),
               val2=c(23,12,32))
```

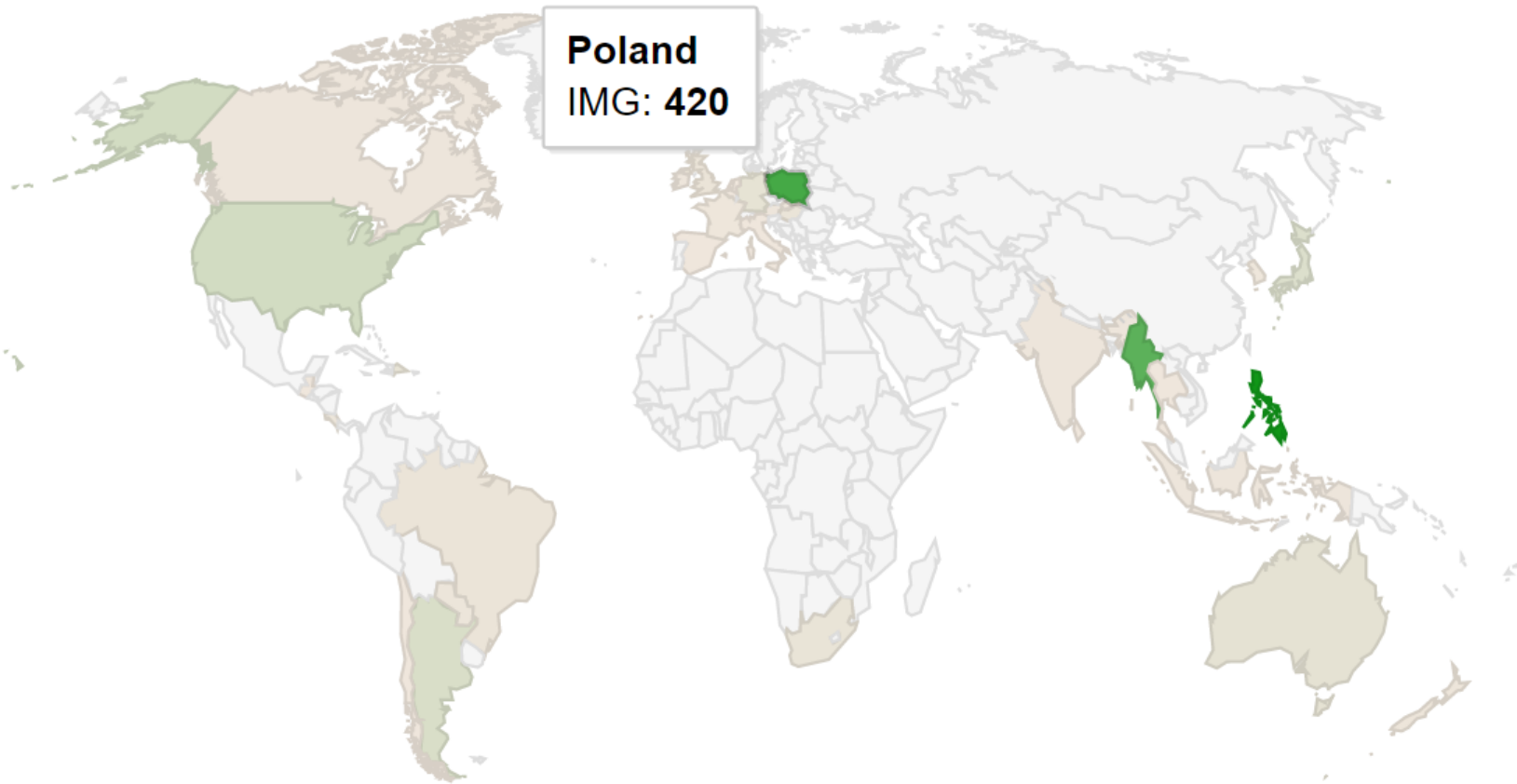
```
Line <- gvisLineChart(df)
plot(Line)
```

<code>gvisAnnotatedTimeLine</code>	<code>gvisLineChart</code>
<code>gvisAnnotationChart</code>	<code>gvisMap</code>
<code>gvisAreaChart</code>	<code>gvisMerge</code>
<code>gvisBarChart</code>	<code>gvisMotionChart</code>
<code>gvisBubbleChart</code>	<code>gvisOrgChart</code>
<code>gvisCalendar</code>	<code>gvisPieChart</code>
<code>gvisCandlestickChart</code>	<code>gvisSankey</code>
<code>gvisColumnChart</code>	<code>gvisScatterChart</code>
<code>gvisComboChart</code>	<code>gvisSteppedAreaChart</code>
<code>gvisGauge</code>	<code>gvisTable</code>
<code>gvisGeoChart</code>	<code>gvisTimeline</code>
<code>gvisGeoMap</code>	<code>gvisTreeMap</code>
<code>gvisHistogram</code>	<code>gvisWordTree</code>
<code>gvisIntensityMap</code>	

# Geo Chart 地理圖

- 參見 WorldMap\_googleVis.r
- 可在檔案內更改相關數據，以產製圖形
- 需聯上網路，會另在瀏覽器裡開啟 html 檔案
- 圖形係互動式
- 資料來源 Int J Health Plann Manage 2019;34:e291 (doi: 10.1002/hpm.2647) [PMID: 30204262] 的 Figure 1

# 檔案置於 IMG 子目錄



Data: Status2017 • Chart ID: [GeoChartID2654526a11d1](#) • [googleVis-0.6.4](#)  
R version 3.6.1 (2019-07-05) • [Google Terms of Use](#) • [Documentation and Data Policy](#)

SECTION III

# **VALUABLE RESOURCES**



LEARN GOOGLE CHARTS  
display interactive charts

### Google Charts Tutorial

- Google Charts - Home
- Google Charts - Overview
- Google Charts - Environment Setup
- Configuration Syntax
- Google Charts - Area Charts
- Google Charts - Bar Charts
- Google Charts - Bubble Charts



LEARN GOOGLE CHARTS  
simply easy learning

## Google Charts Tutorial

- Quick Guide
- Resources
- Job Search
- Discussion

**Google Charts** is a pure JavaScript based charting library meant to enhance web applications by adding interactive charting capability. Google Charts provides wide variety of charts. For example, line charts, spline charts, area charts, bar charts, pie charts and so on.

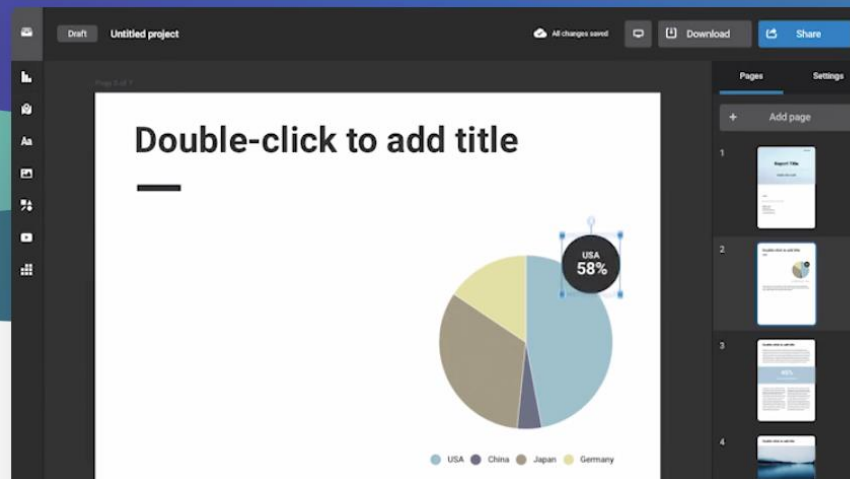
This tutorial will teach you basics of Google Charts. Tutorial contains chapters discussing all the basic components of Google Charts with suitable examples.

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